Anaheim OUTDOORS
Connectivity Plan “IT’S YOUR BACKYARD”
acknowledgments

We would like to thank the many citizens, staff, and community groups who provided extensive input for the development of the Anaheim Outdoors Connectivity Plan.

ANAHEIM CITY COUNCIL
Tom Tait, Mayor
Gail E. Eastman, Mayor Pro Tem
Kris Murray, Council Member
Jordan Brandman, Council Member
Lucille Kring, Council Member

CORE TEAM MEMBERS
Pamela Galera, Anaheim Community Services
JJ Jimenez, Anaheim Community Services
Susan Kim, Anaheim Planning
Keith Linker, Anaheim Public Works
Matthew Budds, Anaheim Police
Douglas K. Park, Anaheim Public Works
Al Shaikh, Anaheim Public Utilities
Anaheim Sporn, Anaheim Community Services
Tanya LaSoya, Convention, Sports & Entertainment
Linda Johnson, Transit Planning

PLANNING TEAM
Steve Lang, MIG
Rick Barrett, MIG
Emily Kiefer, MIG
Darren Rector, MIG
Ruth Stafford, MIG
Mukul Malhotra, MIG
Jeff Liljegren, MIG
Christopher Gray, Fehr & Peers
Jeff Siggers, Fehr & Peers
Pat Fuscoe, Fuscoe Engineering
Tony Maggio, SCS Engineering
ANAHEIM OUTDOORS CONNECTIVITY PLAN

table of contents

EXECUTIVE SUMMARY
Introduction ES-3
Background and Planning Process ES-5
Key Findings ES-8
Implementation ES-10
Document Resources ES-11
Key Policy Considerations ES-11

GLOSSARY OF TERMS

CHAPTER 1: COMMUNITY
1.1 Incorporate “Hi Neighbor”! 19
1.2 Build plan based upon community input process 20
1.3 Look to transform vacant and underutilized parcels into parks 20
1.4 Engage youth, non-profits and neighborhood groups to embrace and implement the plan 21
1.5 Establish foot, bike and equestrian neighborhood volunteer patrols 21
1.6 Create neighborhood identity landmarks 21
1.7 Identify opportunities for urban agriculture and growing local food 22
1.8 Establish community gardens 23
1.9 Investigate opportunities for dog parks 23
1.10 Identify outdoor venues for special events and festivals 24
1.11 Include interpretive features that provide interest and information 25
1.12 Support and cultivate cultural arts 25

CHAPTER 2: CONNECTIVITY
2.1 Look for opportunities to embrace the intent of “Complete Streets” while reducing impacts to property owners and businesses 29
# Table of Contents

2.2 Link specific trails and bike routes with transit and destinations 30  
2.3 Enhance crossings at the river, mid-block, and freeways 31  
2.4 Enhance opportunities for bicycling 31  
2.5 Enhance opportunities for pedestrians 36  
2.6 Enhance opportunities for equestrians 37  
2.7 Accessibility 37  
2.8 Use of Infrastructure Corridors 38  

## Chapter 3: Health

3.1 Increase and promote non-motorized transportation options 43  
3.2 Build trails with exercise stations 44  
3.3 Create fitness loops with mileage/time markers 44  
3.4 Improve existing parks with focus on healthy living 44  
3.5 Establish programs with health care agencies 44  
3.6 Promote the availability of fresh, local, healthful food 45  
3.7 Reduce obesity through improved access to recreation 46  
3.8 Combat “Nature Deficit Disorder” 46  

## Chapter 4: Recreation

4.1 Expand river trails 51  
4.2 Consider active and passive recreational opportunities in  
    underutilized land areas where appropriate 53  
4.3 Transform flood control channels into recreational and  
    transportation corridors 53  
4.4 Encourage the creation of large and small parks for organized  
    and non-organized sports 53  
4.5 Expand recreational uses within electric utility corridors 54  
4.6 Enhance joint use agreements with school districts to expand  
    recreational opportunities 54  
4.7 Encourage aquatic recreation 55  
4.8 Promote organized sports 55  

## Chapter 5: Sustainability

5.1 Enhance the urban forest by creating tree planting program 60  
5.2 Landscape excess right-of-ways 60  
5.3 Create plant and animal habitat in underutilized land areas  
    where appropriate 61  
5.4 Enhance stormwater management 61  
5.5 Identify improvements for key vacant/underutilized parcels 64  
5.6 Consider water saving opportunities 64  
5.7 Continue developing opportunities for roof gardens, solar panels,  
    and alternative energy 66  
5.8 Strive to reduce Green House Gas (GHG) emissions by enhancing  
    the transportation network 68  
5.9 Promote Green Streets 69
### Table of Contents

5.10 Encourage the use of electric vehicles 69  
5.11 Adopt a landscape palette and standards that include native and drought-tolerant plants 70

**CHAPTER 6: ECONOMICS**  
6.1 Increase property values and attract new businesses 73  
6.2 Utilize plans to spur improvements 74  
6.3 Provide parks and open space in park-deficient areas 74  
6.4 Work with developers and business owners 75  
6.5 Identify opportunities to coordinate with tourism 76

**CHAPTER 7: SAFETY**  
7.1 Pedestrian safety 82  
7.2 Bicycle safety 82  
7.3 Trail safety 83  
7.4 Railroad safety 83  
7.5 SCE safety 83  
7.6 Safety education 84

**CHAPTER 8: IMPLEMENTATION**  
8.1 Consider all potential projects regardless of size - ‘no project too small’ 87  
8.2 Coordinate with Anaheim Capital Improvement Projects (CIP) and other agency improvement projects 87  
8.3 Strengthen public/private partnerships 88  
8.4 Identify opportunities for private and non-profit investment 88  
8.5 Enhance inter-agency partnerships 88  
8.6 Identify and apply for local, state and federal grants 89  
8.7 Identify opportunities for bonds, assessments, fundraising etc. 89  
8.8 Work with regulatory agencies and property owners to encourage establishing and protecting habitat 91  
8.9 Establish a maintenance and operations plan 92  
8.10 Establish optional bike licenses opportunities for revenue and theft protection 92  
8.11 Identify CEQA Requirements 92

Opportunity Sites 95

**APPENDICES**  
Appendix A. Anaheim Outdoors Connectivity Plan Map  
Appendix B. Anaheim Outdoors Plant Palette  
Appendix C. Bicycle Best Management Practices
table of contents

Appendix D. Railroad Improvements
D.1 Rail-with-Trail Research: Guidelines and Standards
D.2 SCRRRA Rail-with-Trail Design Guidelines
D.3 Amtrak Fact Sheet

Appendix E. Community Outreach
E. 1 Summary Report Workshop #1
E. 2 Summary Report Workshop #2
E. 3 Workshop #3 Flyer
E. 4 Summary Report Workshop #3

Appendix F. Anaheim Outdoors References
F. 1 Task Force directory
F. 2 Website & Recommended Sites

Appendix G. ADA and Safety
G. 1 Americans with Disabilities Act (ADA) Changes
G. 2 Safety Handouts
executive summary
INTRODUCTION
The Anaheim Outdoors Connectivity Plan, “It’s Your Backyard” (Plan), is a city-wide undertaking to evaluate non-motorized connections throughout the City of Anaheim, but especially among the Platinum Triangle, The Anaheim Resort™, Downtown Anaheim and Anaheim Canyon areas. Key objectives of this Plan are to identify opportunities to create a minimum of 100 acres of new public green space throughout the City, and reduce Green House Gas (GHG) emissions to levels consistent with the California Global Warming Act of 2006. By providing improved bike routes and walkways that encourage alternative modes of transportation, overall personal health and fitness can be improved and GHG emissions associated with automobiles will be reduced.

In addition to increasing green space throughout the City of Anaheim, the Plan focuses on developing a system of green corridors connecting residents, visitors, and employees to both existing and planned high-density urban areas, employment centers, and the residential neighborhoods of the City.

The Plan is inspired by Boston’s Emerald Necklace, which was designed by Frederick Law Olmsted, the nation’s first landscape architect. Conceived, planned and constructed over a 40-year period beginning in 1850, the Emerald Necklace includes 1,100 acres of nine parks and promenades over a seven-mile length from the formal downtown Boston Commons to the great country park, Franklin Park.

“THE City of Anaheim is a diverse city, and one in which we are so proud. From great neighborhoods, parks, schools and libraries, to world-class sports and entertainment, to ARTIC and transportation options for our residents, businesses and guests, there is something for everyone in Anaheim.

I am especially enthused about the Anaheim Outdoors Connectivity Plan because it will enhance the quality of life in our City, as well as offer a way for residents to get involved with planning the look and design of our outdoor space. From increased and enhanced parks, trials, bike paths and more, Anaheim will be an even more connected community.”

-MAYOR TOM TAIT
Much like Boston’s Emerald Necklace, the Plan is a long-term vision plan but also a toolkit for projects that can be implemented in the near term. The goals of the Anaheim Outdoors Connectivity Plan are:

- Reduce Reliance on Automobiles
- Create Green Corridors
- Promote Human Interaction
- Enhance the Public Realm
- Develop Strong Pedestrian Orientation
- Increase City Park Acreage
- Promote Public Health
- Engage the Community in the Implementation of the Vision

The Plan identifies projects that emphasize shade trees, pocket parks, open spaces, multi-modal non-motorized trails and pathways, demonstration gardens, wildlife corridors, bioswales, and stormwater filtration and collection systems. The Plan also provides an updated city-wide plant palette of native and California-friendly plants that are recommended for the Anaheim public and private realm.

The Plan is based on the City of Anaheim’s “Hi Neighbor” program. While the “Hi Neighbor” program encourages personal communications between neighbors for stronger, safer and vibrant neighborhoods, the Plan provides the recommendations for the physical improvements that will encourage such communications.
There are eight key topics which form the framework of the Plan and the chapters of this document. These elements were determined by the community during the extensive public input process. The development of new green spaces throughout the City should take into consideration each of these important elements. They are:

- Community
- Connectivity
- Health
- Recreation
- Sustainability
- Economics
- Safety
- Implementation

**BACKGROUND & PLANNING PROCESS**

The efforts for this Plan began in 2008 when the City of Anaheim identified the need to create better pedestrian and bicycle connections throughout the City to encourage non-motorized forms of transportation. In 2010 the City of Anaheim successfully applied for and received two planning grants, the Proposition 84 Urban Greening Planning grant and the SCAG Compass Blueprint Demonstration Projects grant. Both of these efforts included a need for the City to assess its current conservation and transportation resources, build a comprehensive plan synthesizing the existing information, and identify potential future green spaces and options for additional non-motorized forms of transportation.

To facilitate the planning process, four levels of engagement were established at the beginning of the project. They included the Core Team, City Team, Task Force, and the Community. At each meeting throughout the planning process, the Plan was built from the comments and feedback from the team members and the public. The City and the consulting team utilized a number of tools to conduct public outreach and solicit...
the public's opinions regarding current pedestrian, bicycle
and equestrian needs, as well as city-wide urban greening
needs and solutions.

CORE TEAM
The Core Team met on a bi-weekly basis during the project
to generate ideas, facilitate outreach efforts, and discuss
and review project materials. It included key members from
the following City of Anaheim departments and MIG, the
City’s planning consultant:
- Community Services
- Convention, Sports & Entertainment
- Planning
- Police
- Public Utilities
- Public Works

CITY TEAM
The City Team met three times over the duration of the
project and included key members from the following City
departments:
- Community Development
- Community Services
- Convention Center, Sports and Entertainment
- Fire
- Planning
- Police
- Public Utilities
- Public Works

Left: Anaheim Outdoors Open House

Right: Planting seeds at the Anaheim Coves Park Dedication
TASK FORCE
The Anaheim Outdoors Task Force met six times during the project and included representation from the following areas:

- Anaheim City School District
- Anaheim Neighborhood Councils
- California Department of Fish & Game
- Caltrans
- City of Buena Park
- City of Fullerton
- City of Garden Grove
- City of Orange
- City of Yorba Linda
- Kaiser Permanente
- Orange County Bicycle Coalition
- Orange County Flood Control District
- Orange County Health Care Agency
- Orange County Parks (OC Parks)
- Orange County Public Works, Flood Control District
- Orange County Transportation Authority (OCTA)
- Orange County Water District (OCWD)
- Orange Unified School District (OUSD)
- Rancho Del Rio Stables
- Southern California Air Quality Management Agency (SCAQMD)
- Southern California Association of Governments (SCAG)
- Southern California Edison (SCE)
- Trails 4 All
- Union Pacific Railroad
- Urban Land Institute
- US Army Corps of Engineers

PLANNING TEAM
The Planning Team worked throughout the duration of the project to develop non-motorized transportation opportunities, identify stormwater filtration and collection sites, and analyze the potential for GHG emissions reduction in the City. The Planning Team members included:

- Fehr & Peers Transportation Consultants
- Fuscoe Engineering
- SCS Engineers

ADDITIONAL MEETINGS
Additional meetings were held with representatives of the following groups to solicit comments, ideas and information on recreational and green space needs within the City of Anaheim:

- Anaheim Colony
- Audubon Society
- Canyon Velo Bike Club
Key Findings of the Plan:
- Identifies 130 acres of open space
- Identifies 200 miles of bike ways
- Reduction of 120,000 vehicle miles traveled
- Reduction of 56 metric tons of CO₂ equivalent

City of Anaheim Health and Lifestyle Expo
- Disneyland Resort
- East Anaheim Neighborhood Group
- Healthy Community Task Force
- Lennar
- Regional Recreational Trails Advisory Committee
- Santa Ana River Trail and Parkway Advisory Committee
- Urban Land Institute Infrastructure Committee (Orange County Inland Empire Chapter)
- West Anaheim Neighborhood Development Council (WAND)

Key Findings
The Plan identifies several goals that are envisioned for the implementation of this planning effort. In order to achieve some of those goals, over 130 acres of new open space and parks throughout the City have been identified within eighteen (18) Opportunity Sites. The Opportunity Sites also include critical bike routes and walking paths to enhance connectivity throughout the City of Anaheim. These projects are recommended as short- to long-term implementation projects based on site availability, funding, neighborhood needs, and connectivity opportunities.

Over 200 miles of proposed bike lanes and bike ways have been identified by the Plan. These include all proposed bike lanes and bike paths as indicated on the Connectivity Plan Map. The proposed network consists of Class I, II or III bike routes and shared use roadways (sharrows). Pathways and green spaces are strategically located to enhance connections and opportunities in high-density development areas of the City as well as the residential neighborhoods.

Reducing vehicular travel can result in several significant benefits, including a reduction in emissions and improvement in traffic congestion. One method to reduce automotive travel is through the addition of bicycle lanes, which have been shown through previous studies to shift travel from automobiles to bicycles. The Plan identifies a reduction of over 120,000 vehicle miles traveled (VMT) and the associated improvement in greenhouse gas emissions (GHG) which result from this shift.

In addition, with the additional bike routes that the Plan proposes, and the resultant reduction in VMT, overall GHG emissions will be reduced by 56 metric tons of carbon dioxide equivalent.

By reducing the number of VMT via promoting the use of public transport, bicycle routes, carpooling, and other mechanisms to meet SB375’s sustainable communities’ strategy, the City of Anaheim is also reducing its GHG reduction emissions and achieving its target, through integrated land use, housing, and transportation planning.

The California Air Resources Board will collect data throughout the state to incorporate it into the region’s federally enforceable regional transportation plan. Air emission reductions will not only help improve the air quality in the City of Anaheim, but throughout the region and worldwide. With growing enforcement throughout California, the entire State can look forward to cleaner air for everyone’s enjoyment.
Quantification of the reduction in VMT was developed in three stages. In the first stage of the analysis, historical data pertaining to the relationship between bicycle lane additions and changes in bicycle commuting were identified. This study identified an increase in bicycle commuting which occurred from the addition of bicycle lanes in other communities. The second stage of the analysis used outputs from the Orange County Transportation Authority Regional Travel Demand Model to estimate VMT for both sub-areas of the City and the City as a whole. The third stage of the analysis then applied the relationship identified through this historical study to the VMT, which resulted in the estimated VMT reduction.

This VMT reduction was then applied to the GHG emissions to determine the benefits of these additional bicycle lanes. GHG reduction is an important consideration for the City for several reasons. First, the City can demonstrate its commitment to addressing these issues in a tangible way, thereby demonstrating their commitment to broader environmental issues. Second, GHG emissions contribute to global warming and climate change, and any reduction in GHG emissions would be beneficial. Third, there are several state legislative initiatives which encourage GHG reductions at the City level, including AB 32, SB 375, and SB 226. The additional bicycle lanes provide one method to reduce city-wide emissions, in addition to other potential strategies.

Overall, implementation of the Plan improvements could result in a reduction of GHG emissions, which would greatly assist the City of Anaheim in achieving the goals of Assembly Bill 32, the California Global Warming Solutions Act of 2006.

In addition, between the additional park and open space areas identified by the Plan, and the street tree planting improvements in association with the proposed bike and pedestrian routes, it is conservatively estimated that over 2,500 new trees will be planted. This alone will result a reduction of over 100 metric tons of carbon dioxide equivalent attributable to the carbon sequestration capability of trees.
Significantly, the Plan improvements — including enhanced connectivity throughout the City of Anaheim, new parks and open space, new bike routes, and new tree planting — will not only result in reduced GHG emissions, but will create opportunities to spend more time outdoors in active and passive recreational pursuits. Numerous studies indicate a direct link between reductions in greenhouse gases, increases in human-powered transportation, and a reduction in obesity and asthma.

The Plan includes a water-efficient Plant Palette designed specifically for the Anaheim environment. This Plant Palette, when implemented, will save water and reduce overall maintenance needs. Habitat demonstration gardens at several of the Opportunity Site locations will introduce residents to the plants and trees with interpretive signage and educational brochures. Community garden opportunities and existing agricultural resources are identified by the Plan, to bring attention to the importance of fresh, local food sources within the City.

IMPLEMENTATION

The Plan includes recommended policies, guidelines, standards and Opportunity Sites for implementation of the Plan. Prior to implementation, the associated environmental impacts must be analyzed pursuant to the California Environmental Quality Act (CEQA) and amendments to the General Plan and other related policy documents must be approved and/or adopted.

On April 30, 2013, by Resolution No. 2013-XXX, the Anaheim City Council approved the Anaheim Outdoors Connectivity Plan and initiated amendments to the General Plan and the other related policy documents that are required to be amended in order to implement the Plan. These amendments will be processed, and the Opportunity Sites will be developed, subject to the requirements of CEQA and the availability of funding.
DOCUMENT RESOURCES

Documents that have been referenced in the development of the Plan include the following:

- City of Anaheim Municipal Code
- City of Anaheim General Plan, including the following sections:
  - Circulation Element – Bicycle Facilities
  - Green Element – Open Space
  - Land Use Element
  - Appendix A: Anaheim Vision
  - Appendix B: Bicycle Master Plan – Bicycle Facilities
  - The Anaheim Colony: Vision, Principles, and Design Guidelines
- City of Anaheim Specific Plans, including the following:
  - The Highlands at Anaheim Hills
  - Sycamore Canyon
  - The Summit of Anaheim Hills
  - PacifiCenter Anaheim
  - Anaheim Hills Festival
  - East Center Street Development
  - The Disneyland Resort
  - The Anaheim Resort
  - Hotel Circle
  - Northeast Area (Anaheim Canyon Business Center)
- City of Anaheim Platinum Triangle Master Land Use Plan
- City of Anaheim Greater Downtown Guide for Development
- City of Anaheim Green Connection Resolution
- City of Anaheim Trail Standards
- City of Anaheim Standard Plans and Details
- City of Anaheim Master Plan of Drainage
- City of Anaheim Water Quality Management Plan
- City of Anaheim Pedestrian Accessibility Guidelines
- City of Anaheim Cultural Plan
- Orange County 4th District Bikeways Plan

KEY POLICY CONSIDERATIONS

1. Encourage Anaheim businesses to provide bike racks and benches to promote bicycling and walking.

2. Consider implementing bicycle routes, priority signaling and bicycle amenities on Anaheim streets whenever roadways are improved.

3. Give additional maintenance priority to Anaheim streets with bike lanes or bike routes.

4. Consider using vacant publicly-owned properties throughout Anaheim for pocket parks, landscape, habitat, and recreation purposes.

5. Provide everyday opportunities to connect with nature through the promotion of trails, bicycle routes, and habitat friendly landscaping.

6. Consider planting additional street trees along Anaheim streets whenever roadways are improved.
7. Consider planting new trees in parks and public properties to replace existing trees in declining health.

8. Construct new sidewalks, trails and new curb ramps throughout Anaheim to promote walkability and accessibility.

9. Improve access to fresh food by exploring opportunities to reduce impediments to opening corner markets, farmers markets and community gardens throughout Anaheim.

10. Initiate amendments to the General Plan and other related policy documents that would need to be amended to implement the Anaheim Outdoors Connectivity Plan, including but not limited to the following:

   a. City’s Bicycle Master Plan.

   b. City of Anaheim Master Street Tree Plan for Arterial Corridors.

   c. City of Anaheim Riding and Hiking Trail Design Standards.
The following is a glossary defining critical terms within the Anaheim Outdoors Connectivity Plan document.

**ARTIC (Anaheim Regional Transportation Intermodal Center)** – located in Anaheim, Orange County, the ARTIC is a transportation gateway and mixed-use activity center on a 16-acre site owned by the City of Anaheim. On opening day, ARTIC services will include: Metrolink, Amtrak, OCTA bus, Anaheim Resort Transportation, shuttles, taxis and tour and charter buses.

**Assembly Bill SB 32** - is the Global Warming Solutions Act of 2006, which set the 2020 greenhouse gas emissions reduction goal into law. SB 32 directed the California Air Resources Board to begin developing discrete early actions to reduce greenhouse gases while also preparing a scoping plan to identify how best to reach the 2020 limit. The reduction measures to meet the 2020 target are to be adopted by the start of 2011.

**Bicycle Boulevard** - a low speed street which utilizes a variety of traffic calming elements to achieve a safe environment for bicycle traffic. Bicycle Boulevards discourage cut-through motor-vehicle traffic but allow local traffic, and are intended to improved bicyclist comfort and/or safety.

**Bulbouts** - pedestrian bulbouts extend the corner sidewalk at an intersection. Large bulbouts can support landscaping. The benefits of these types of street improvements are that they shorten the distance across the intersection for pedestrians, they improve visibility of pedestrians by drivers, and they slow traffic.

**Connectivity Plan Map** - a map developed specifically for the Anaheim Outdoors Connectivity Plan that includes geographically-related components that are integral to the Plan. The map is included in Appendix A of this report.

**Emerald Necklace** - designed by Frederick Law Olmstead, America’s first landscape architect, the Emerald Necklace consists of an 1,100-acre chain of parks linked by parkways and waterways in Boston and Brookline, Massachusetts. It gets its name from the way the parks are linked like the chain of a necklace. The parks offer valuable recreation opportunities and an ecologically important urban retreat for nesting birds and other animals.

**General Plan** - a planning document that cities and counties create and adopt for the purpose of guiding the growth and land development of their communities. The General Plan is the foundation for establishing goals, purposes, zoning and activities allowed on each land parcel.

**GHG (Greenhouse Gas)** – a gas in an atmosphere that absorbs and emits radiation within the thermal infrared range. Greenhouse gases greatly affect the temperature of the Earth. The most abundant greenhouse gases in the Earth’s atmosphere are: water vapor, carbon dioxide, methane, nitrous oxide, and ozone.
glossary of terms

GOALS - Headquartered in Anaheim, GOALS is a long-standing not for profit program that involves thousands of low-income youth annually through a combination of athletics, after-school educational enrichment and community service. More than 20,000 youth have participated in the programs since 1994.

Green Resolution - In 2006, the City Council of Anaheim adopted the Green Resolution, which sets out a series of goals for the City, grounded in the principles of environmental soundness and sustainable development.

HEAL (Healthy Eating Active Living) Grants & Partnerships - a community health initiative funded by Kaiser Permanente. The focus of HEAL is on healthy eating and active living to improve nutrition and physical activity and reduce overweight and obesity issues. The HEAL Cities Campaign, a partnership between the League of California Cities and the California Center for Public Health Advocacy, realizes that cities play a central role in reversing the trend toward sedentary behavior by making specific land-use decisions around planning, zoning and infrastructure that influence access to everyday physical activity. These activities include walking, biking, availability of open space for recreation, and access to healthy food.

“Hi Neighbor” - is a community-building program through the City of Anaheim that encourages residents to get to know their neighbors. "Hi Neighbor" provides the tools to help community members police their communities, prepare for emergencies, plan neighborhood events, create community gardens and more.

LEED (Leadership in Energy and Environmental Design) - is an internationally recognized green building program. LEED is a voluntary, consensus-based, market-driven program that provides third-party verification of green buildings. From individual buildings and homes, to entire neighborhoods and communities, LEED addresses the entire lifecycle of a building. The process demonstrates leadership, innovation, environmental stewardship and social responsibility, and provides building owners and operators with the tools they need to create high performance buildings and healthy indoor spaces for occupants.

Native Plants - plants that are endemic or naturalized to a given area in a geologic time. In North America, a plant is often deemed native if it was present before colonization.

Nature Deficit Disorder – the disorder that might result from a lack of routine contact with nature. The term was coined by Richard Louv in his book Last Child in the Woods. Louv explains that we have entered a new era of suburban sprawl that restricts outdoor play, in conjunction with a plugged-in culture that draws kids indoors. Nature-deficit disorder is caused by the alienation from nature and over-stimulation of the electronic era. Its symptoms can include attention problems, obesity, anxiety and depression.
glossary of terms

**Project Say (Support Anaheim’s Youth)** - the City of Anaheim’s Youth Development Program. The program serves junior high and high school age youth and their families living in Anaheim. Using outreach, recreation, educational workshops and individualized guidance, it engages youth in positive and constructive activities to promote the healthy development of young people.

**Roundabouts** - a circular intersection or junction in which road traffic is slowed and flows almost continuously in one direction around a central island. Traffic exits onto the various intersecting roads, thus eliminating the opportunity for the most deadly types of crashes, T-bone or perpendicular crashes. Pedestrians are routed away from the roundabout, to separate crosswalks located outside the intersection. In this way pedestrians only have to cope with traffic that is coming from one direction at a time, and which is travelling slowly enough for visual engagement with drivers.

**Senate Bill 1 (SB 1)** - signed in 2006, this Bill enacts the Million Solar Roofs Initiative and expands upon the current California Solar Initiative and the Energy Commission’s New Solar Homes Partnership. The statute adds sections to the Public Resource Code that require building projects applying for ratepayer-funded incentives for photovoltaic (PV) systems to meet minimum energy efficiency levels and recommends that PV system components and installations meet rating standards and specific performance requirements.

**Sharrow** - a street marking placed in a travel lane to indicate that a bicyclist may use the full lane. Sharrows, or shared-lane markings, alert motorists of the lateral location bicyclists are likely to occupy and encourage safe passing of bicyclists by motorist.

**YMCA (Young Men’s Christian Association)** - a worldwide organization founded in 1844. It aims to put Christian principles into practice by developing a healthy “body, mind and spirit”. Local YMCAs are voluntarily affiliated through their national organizations. Activities are focused around religion, sports/athletics, parent-child programs and after-school programs. Importance is placed on the values of caring, honesty, respect and responsibility.

**VMT (Vehicle Miles Traveled)** – the total number of miles driven by all vehicles within a given time period and geographic area.
Anaheim OUTDOORS
Connectivity Plan “IT’S YOUR BACKYARD”
OVERVIEW
The City of Anaheim has engaged many stakeholders in a variety of meetings and interviews to garner the community’s concerns and interests in developing a plan that links the entire City. The following topics describe the Anaheim Outdoors Connectivity Plan (Plan) goals for enhancing Community in the City of Anaheim.

- Incorporate “Hi Neighbor”
- Build Plan based upon community input process
- Look to transform vacant and underutilized parcels into parks
- Engage youth, non-profits and neighborhood groups to embrace and implement the Plan
- Establish foot, bike and equestrian neighborhood volunteer patrols
- Create neighborhood identity landmarks
- Establish community gardens
- Identify opportunities for urban agriculture and growing local food
- Investigate opportunities for dog parks
- Identify outdoor venues for special events and festivals
- Include interpretive features that provide interest and information
- Support and cultivate cultural arts

1.1 Incorporate “Hi Neighbor”
“Hi Neighbor” is a city-wide program established by Mayor Tait of Anaheim. The program encourages neighbor to neighbor communication regarding improvement opportunities, neighborhood policing, and emergency preparedness. “Hi Neighbor” encourages the residents of Anaheim to build a stronger, safer and more resilient community by creating and enhancing neighborhood relationships. Visit the website at: www.anaheim.net.

Community members enjoy a neighborhood park
The Plan builds on the connection of residents through the physical network while the Hi Neighbor program works to connect residents through the social network. Both the Plan and the Hi Neighbor Program recommend projects that will provide opportunities for neighbors to get together.

1.2 Build Plan based upon community input process
The City of Anaheim included as many of the residents in the planning process as possible to ensure a sense of authorship and ownership in the Plan. Outreach methods included weekend and weeknight workshops, outreach programs targeting specific groups, and on-site interactions with pedestrians, bicyclists and equestrians. Activities have been held at a variety of locations, making it easier for residents of all parts of the City to attend. An interactive project website was also established to disseminate information and solicit citizens input in the planning process. Public outreach materials can be found in Appendix E of this document.

1.3 Look to transform vacant and underutilized parcels into parks
As part of the Plan, the City desires to transform publicly owned vacant and underutilized government owned parcels into more productive landscapes. Depending on each unique site location and suitability, these landscapes could become parks, wildlife habitat, bioswales, green infrastructure, community gardens and more. Neighborhoods will benefit not only from the improved aesthetics and function of these vacant parcels, but also in increased community interaction and safety through stronger connectivity. Opportunity Sites are described further in Chapter 8 of this report.
1.4 Engage youth, non-profits and neighborhood groups to embrace and implement the Plan

The Plan will continue to engage various youth and non-profit groups to become stewards of the Plan including: the Anaheim Ballet, Anaheim Beautiful, Anaheim Colony Historic District, Back to Natives Restoration, Boys & Girls Club of Anaheim, Boy Scouts, California Bicycle Coalition, equestrian groups, Girl Scouts, GOALS, Inside the Outdoors, KaBOOM!, Orange County Conservation Corps (OCCC), Project SAY, Sea & Sage Audubon Society, and YMCA, as well as many faith-based organizations. These groups often utilize recreational facilities and are ideal candidates for strengthening community connections.

Partners such as Inside the Outdoors already strengthen community connections through outdoor education programs that serve youth and families in Anaheim. Leveraging existing avenues of engagement with organizations like Inside the Outdoors will be an important element for successful implementation of the Plan.

1.5 Establish foot, bike and equestrian neighborhood volunteer patrols

Throughout the community outreach process many residents expressed an interest in participating as volunteer patrols on foot, bike or horse. The Whittier Narrows Mounted Assistance Unit (www.wnmau.com) is an example of a group whose goals align with those of the Plan. Their mission is to conduct equestrian patrols in and on designated County parks and trails to contribute to the enhancement of public safety. This type of program is encouraged by the City and can be facilitated by the Plan.

1.6 Create neighborhood identity landmarks

People identify with their distinct neighborhoods in Anaheim, and creating physical icons and features can help to express community identity. For instance, in the Colony there are distinct markers that identify the edges of the district and add visual interest to the area. The Plan encourages residents to embrace the unique character of Anaheim’s neighborhoods through a variety of visually appealing methods which...
might include: stone columns, archways, signage, murals and signature landscaping.

Murals can provide a sense of place and unify a community to express their identity. However, months of hard work and enthusiasm can be destroyed in a matter of minutes by graffiti or vandalism. To increase the lifespan of the mural, artists should be available to oversee repairs, longer lasting mosaic tiles with graffiti coating should be considered, and murals should be located in high traffic, well lit areas. Residents should be aware that any mural “visible from public right-of-ways” requires a conditional use permit per Code Section 18.44.050.0104 and will have to be approved by the City.

1.7 Identify opportunities for urban agriculture and growing local food

Creating opportunities for small-scale urban agriculture can benefit the residents of Anaheim in many ways. Locally grown food can be sold to consumers at the peak of freshness, nutrition and taste. Small-scale farming is often healthier for the environment and humans, as small farms tend to use fewer chemicals. Agricultural fields woven into the urban environment also contribute to oxygen cleansing, reduced ambient air temperatures and enhanced views for neighboring buildings.

Existing agricultural fields such as the various strawberry fields throughout the City, and the historic orange groves along Santa Ana St. and Harbor Blvd., are identified on the Connectivity Plan Map in Appendix A.

There are also several active Farmer’s Markets in Anaheim including the Downtown market, the Kaiser Permanente market between Lakeview Medical Office...
All of these Farmer’s Markets provide fresh fruits and vegetables at reasonable prices.

1.8 Establish community gardens
One way to take advantage of vacant and underutilized parcels is in the formation of community gardens. Community gardens have the power to bring people of all ages and abilities together. They also provide an opportunity for learning and sharing knowledge, a stage for neighborhood social events, and a multitude of health benefits including better nutrition and increased exercise.

In Anaheim, the Hi Neighbor Community Gardens movement, spearheaded by active community members, has installed temporary community gardens in vacant and unused spaces throughout the City. To date it has established three Hi Neighbor community gardens, one in west Anaheim, one in south, and one in the east. Each location has access to nearby residents and groups who are beginning to participate in the program. Two additional gardens are proposed, and both existing and proposed community gardens can be found on the Connectivity Plan Map in Appendix A.

1.9 Investigate opportunities for dog parks
Most often dog parks are community-led opportunities driven by neighborhood needs. They function as social centers where people gather to exercise their pets, exchange information, discuss pet issues and socialize. Dog parks do not require a large amount of amenities and are another way to turn vacant parcels into productive and important properties.

In 2010 the City of Anaheim convened a Dog Park Task Force to identify possible locations of dog parks city-wide. This Task Force was composed of residents, community members, veterinary professionals, and representatives from the City of Anaheim Police Canine detail. The Task Force achieved their initial
goal of identifying dog park locations in the west, central, and east parts of the City. Since that time, park funds have been allocated for the development of a dog park at Olive Hills Park. City staff continues to pursue locations in the central and the west side of town and is actively negotiating with SCE on development of their easements. There are several areas within the SCE easement that are ideal locations for dog parks. These locations are identified on the Connectivity Plan Map in Appendix A.

1.10 Identify outdoor venues for special events and festivals

Special events and festivals can be used as vehicles for bringing people into underutilized parcels of the City. For example, there are many areas along the Santa Ana River that would be suitable for nature festivals or concerts. Marathons could also be held along the River or along utility corridors to bring energy and attention to areas of the City that residents and visitors don’t typically frequent. These types of events can reinforce connectivity to the larger Anaheim community.

Community volunteer groups are vital in assisting with special events and festivals in the City of Anaheim, and the Plan encourages them to expand their already successful efforts. Currently, the City and community volunteer groups partner to offer the following events: Cinco de Mayo, the Fall Festival, Concerts in the Canyon, Anaheim Western BBQ, July 4th Celebration, the Summer Nights at Pearson Park Amphitheater, the Halloween Parade, two Holiday Tree Lighting events, and the Children’s Festival.

There are many large areas throughout the City that either already host or have the potential to host large events such as: along the Santa Ana River, Grand Plaza at the Convention Center, in the Anaheim Stadium parking lot, along the Promenade in downtown, in front of the Anaheim ICE hockey rink, and in Yorba Regional Park.
1.11 Include interpretive features that provide interest and information

The Plan recommends many projects that can incorporate interpretive features to help explain the urban greening process. Interpretive features provide an excellent opportunity to increase awareness of the environment. Residents can also gain a sense of satisfaction from understanding more about their community. Other topics might include: animal habitat, history, water conservation, groundwater recharge and stormwater treatment.

1.12 Support and cultivate cultural arts

The Cultural Plan for Anaheim was completed in July 2000. Since that time many of the objectives of the plan have been met. However, the City continues to “design a comprehensive approach to siting and building a network of city and non-profit community cultural facilities.”

The completion of the Muzeo, Citrus Packinghouse and Packard Building has established downtown Anaheim as the cultural arts heart of the City. The City is moving forward to “develop and equip an indoor 300 to 500 seat theatre/performing arts venue.”

The City is also investigating the opportunity to install a shade structure at Pearson Park to enhance programming opportunities.
connectivity
chapter 2

Anaheim OUTDOORS
Connectivity Plan “IT’S YOUR BACKYARD”
OVERVIEW
With the nearly 20 mile breadth of Anaheim’s city limits and wide range of community resources, destinations, and assets, providing convenient public access throughout the City is a crucial part of keeping people connected. One of the main goals of the Anaheim Outdoors Connectivity Plan (Plan) is to create a network of non-motorized transportation options that connect to every area of the City. Some of these options include: pedestrian sidewalks and trails, bikeways (Class I, II, and III), bike trails, overcrossings, undercrossings and equestrian routes. The following topics describe the Plan’s goals for enhancing connectivity in the City of Anaheim.

■ Look for opportunities to embrace the intent of “Complete Streets” while reducing impacts to property owners and businesses
■ Link specific trails and bike routes with transit and destinations
■ Enhance crossings at the river, mid-block, and freeways
■ Enhance opportunities for bicycling
■ Enhance opportunities for pedestrians
■ Enhance opportunities for equestrians
■ Accessibility
■ Use of infrastructure corridors

2.1 Look for opportunities to embrace the intent of “Complete Streets” while reducing impacts to property owners and businesses
The Plan embraces the Complete Streets Act, which was recently signed into law in California. Complete Streets are streets that enable safe access for all users, regardless of age, ability, or mode of transportation. It ensures that every transportation project will make the street network better and safer for drivers, transit users, pedestrians and bicyclists. As of January 1, 2011, the law requires that cities and counties, when updating the roadway and traffic flow portion of their general plan, ensure that those plans account for the needs of all roadway users.

Example of a Complete Street
The California Department of Transportation also embraces Complete Streets as the policy covering all phases of state highway projects, from planning to construction to maintenance and repair. As the result, California has become the second state to implement Complete Streets policies covering every public street, road and highway (www.completestreets.org).

Although there is no singular design that works for every street, Complete Streets might include: sidewalks, bike routes (or wide paved shoulders), special bus lanes, comfortable and accessible public transportation stops, frequent and safe crossing opportunities, median islands, accessible pedestrian signals, curb extensions, narrower travel lanes, roundabouts, and more.

2.2 Link specific trails and bike routes with transit and destinations

Anaheim boasts an intricate bus system through the Orange County Transportation Authority (OCTA). The busses currently operate on 26 different routes within or passing through the City, including one express bus route and several OCTA StationLink routes that serve Metrolink stations. Metrolink bus routes honor valid Metrolink tickets as full fare for travel to and from stations. OCTA is currently conducting a study of non-motorized access to all OC Metrolink stations.

The Anaheim train station, located near Anaheim Stadium, serves both Amtrak’s Pacific Surfliner from San Luis Obispo to San Diego and Metrolink’s Orange County Line from Los Angeles to Oceanside. The OCTA bus routes connect to the station, as does The Anaheim Resort Transportation.

The Anaheim Canyon Station is located at La Palma Avenue and North Tustin Avenue, just north of the 91 Freeway. It is served by the Inland Empire-Orange County Metrolink Line and OCTA.

In FY2010, Anaheim train station was the 14th busiest of the 73 California stations served by Amtrak with over 300,000 boardings and alightings for the year (Amtrak Fact Sheet, FY2011, State of California). The Metrolink Orange County Line is one of the busiest Metrolink lines, with an average weekday ridership of over 7,000 passengers in FY2011 (Metrolink Quarterly Report, Sept 15, 2011).

The Anaheim Regional Transportation Intermodal Center (ARTIC) will soon be built just south of the Honda Center. The station platforms will connect to the existing platforms of the Anaheim train station. This 16-acre site owned by the City of Anaheim will serve as a hub and transportation gateway for Orange County and the region. Freeways, major arterials, bus routes and rail system will converge at this mixed-use activity center where civic space and retail uses will provide amenities for visitors and passengers. ARTIC will also accommodate future plans for the Anaheim Rapid Connection (ARC) and the California High-Speed Rail.
2.3 Enhance crossings at the river, mid-block, and freeways

Residents pack up their bicycles in their cars to drive less than ½ mile to access bicycle paths, especially along the Santa Ana River Trail. The river is a destination, but it can also be a barrier due to limited areas for crossing. The Connectivity Plan Map highlights several potential crossings throughout the City which will alleviate many of these barriers. They are: 1. Continue Fairmont Blvd. across Santa Ana River and SR-91 with a new pedestrian bridge; 2. Connect neighborhoods south of SR-91 with Santa Ana River Trail (SART) with underpass alongside Camino Arroyo storm drain and Anaheim Hills Road; 3. Connect Peralta Park to SART with pedestrian bridge over SR-91 on east edge of park; 4. Connect Crescent Intermediate School to SART via new pedestrian underpass alongside Deana Street storm drain.

CalTrans is currently undergoing the conceptual planning stages for development of a vehicular bridge at Fairmont Blvd. The Plan recommends providing pedestrian, bicycle and equestrian access at this crossing that would not conflict with the proposed bridge if/when it is constructed.

2.4 Enhance opportunities for bicycling

Develop a connected bicycle path network.

It is legal to ride your bicycle on any street in the City of Anaheim. However, busy streets and complicated intersections can be intimidating to some riders. Ideally, the bicycle network should provide a multitude of routes that users of varying skill levels feel comfortable riding on and that are accessible for all. It is important that bicycle routes remain free from debris, cracked concrete/asphalt, and other potential hazards. Routine street sweeping is recommended for all bike routes.

Increased crossing opportunities, designated routes, traffic calming methods, specialized signals, and signage are elements that would enhance the bicycle network so that cyclists of all abilities would feel comfortable utilizing it. More detailed information regarding Bicycle Best Management Practices can be found in Appendix C of this document.
Consider the transportation needs and options for the disadvantaged.
The OCTA provides bus services and programs for youth, students, seniors and disabled people in the community. OCTA also has a professional team of representatives that offer personal instruction on bus use to the public.

However, people who are disadvantaged often cannot afford automobiles. For them, biking is a more preferable form of transit. Considerations should be made for disadvantaged groups to get to local shops and entertainment venues as well as workers making daily commutes by bicycles.

Consider the transportation needs of commuters. The Disneyland Resort is the largest single point employer in the state of California. The Anaheim Resort includes the Convention Center, Garden Walk, hotels, and restaurants. Many of their employees commute to and from work by bicycle. Routes for biking are especially important to employees with variable work schedules.

Consider reduction of width or number of traffic lanes where possible.
Where there are opportunities to reduce traffic lanes or lane widths, there is an opportunity to incorporate a bike route. Traffic calming measures such as these can make bicycle traffic along busy streets more comfortable and less intimidating to riders. The Plan identifies an opportunity site along a portion of Lemon Street that is ideally suited for lane reduction. On this site, modifying the existing 2-way street to 1-way vehicle travel would allow for the creation of a 10’ bike lane. Refer to Lemon Street Bike Boulevard in Chapter 8 of this document for more information.

Top left & right: Getting around town on bicycle, Anaheim
Bottom: One of many options for Lemon Street Bike Boulevard - Proposed one-way street
Examples of proposed bike route configurations:

**ANAHEIM BLVD. - SANTA ANA ST. TO BALL RD. (LOOKING NORTH)**

- Existing Sidewalk
- Parking & Travel Lane w/ Sharrow
- Travel Lane
- Raised Median 78’ Curb to Curb
- Existing Sidewalk

**ANAHEIM BLVD. - BALL RD. TO CERRITOS AVE. (LOOKING NORTH)**

- Existing Sidewalk
- Bike Lane
- Travel Lane
- Travel Lane
- Raised Median
- Travel Lane
- Bike Lane
- Existing Sidewalk

**CERRITOS AVE. - ANAHEIM ST. TO STATE COLLEGE BLVD. (LOOKING EAST)**

- Existing Sidewalk
- Bike Lane
- Travel Lane
- Travel Lane
- Turning Lane
- Travel Lane
- Travel Lane
- Bike Lane
- Existing ROW

**SANTA ANA ST. - WALNUT ST. TO LEMON ST. (LOOKING EAST)**

- Existing Sidewalk
- Parking
- Travel Lane w/ Sharrow
- R/R ROW 50 Curb to Curb
- Parking
- Existing Sidewalk

**SANTA ANA ST. - LEMON ST. TO ANAHEIM (LOOKING EAST)**

- Existing Sidewalk
- 8’ Parking
- Travel Lane w/ Sharrow
- R/R ROW
- Travel Lane w/ Sharrow
- Parking
- Existing Sidewalk

**SANTA ANA ST. - WALNUT ST. TO LEMON ST. (LOOKING EAST)**

- Existing Sidewalk
- 8’ Parking
- Travel Lane w/ Sharrow
- R/R ROW
- Travel Lane w/ Sharrow
- Parking
- Existing Sidewalk
Identify opportunities for the removal of on-street parking.
In certain situations, the City can remove on-street parking and create the opportunity for bike routes without removing car lanes. This is recommended only when it is feasible and doesn’t present an economic hardship.

Implement bike signal priority on key intersections.
Bicycle signals are bicycle-specific traffic control signal heads used in combination with existing signalized intersections to provide guidance for bicycle movements through intersections. These are typically configured with the standard three red, yellow and green lenses, with a bicycle shape to clearly identify the bicycle phase. Bicycle traffic signals can be used to separate bicycle-only phases from other vehicle movement through an intersection with potential turning conflicts, and give priority to bicycles with leading intervals.

Signal detection for bicycles is another way to enhance bicycle travel in the urban environment. Bicycle detection should be installed at actuated traffic signals to identify bicycle crossing demand. This is important at the minor road approaches to intersections where vehicle volumes may be very low and bicycles would not otherwise have an opportunity to cross legally. Signal detection for bicycles reduces delay, establishes legal crossing for bicycles and can be used to activate a longer green phase when bicycles are crossing. Both automated in-pavement loops, calibrated to detect bicycles, and push buttons may be used, though in-pavement loops are preferred for efficiency and ease of use by on-road cyclists. As new signals are installed or major updates occur to existing signalized locations, bicycle loop detectors should be installed on the bikeway system at the stop bar for all actuated movements of the signal.

Include bike parking
Secure and convenient bike parking is an essential element of a bicycle trip, and critical in the effort to increase bicycle activity. Bicycle parking can be categorized as either short- or long-term, and the different purpose and design of short- and long-term bicycle parking must be considered.
Short term parking is intended for less than two hours and should be conveniently located at destinations. Long-term parking is meant to accommodate users expected to park bikes for several hours, and should therefore be secure and weather protected. Both short- and long-term bicycle parking should be compatible with standard U-locks, as this is the most recommended and secure lock type.

In order to encourage bicycling, cities should establish a comprehensive bicycle parking program and bicycle parking requirements for new buildings. Zoning code can be used to outline minimum bicycle parking requirements for different land uses, and municipal code can include comprehensive bicycle parking requirements, such as best practice specifications for the number of short- and long-term parking facilities, design standards, dimensions and placement.

Improve connectivity to adjacent cities. The Connectivity Plan Map includes bike routes from adjacent cities. The neighboring cities of Stanton, Garden Grove, Orange, Yorba Linda, Placentia, and Fullerton all have bike routes that connect, or have the potential to connect, to the City of Anaheim. Moving people between cities as they travel for work, school and play is essential in forming a successful intercity bike network.

Create Bicycle Boulevards. There are opportunities along Lemon St., Santa Ana Blvd., and Sycamore St. to create Bike Boulevards. A Bike Boulevard has specific signage and striping to alert vehicles to the presence of bicycle traffic. These specialized streets often have reduced or irregular speed limits, bulbouts, roundabouts and additional landscaping to slow vehicles and enhance the pedestrian and bicycle experience. Bike Boulevards do not prohibit cars, but promote equal access for bicyclists and pedestrians.
chapter two

One option for creating a Bike Boulevard on Lemon Street would be to constrict traffic to one-way on certain portions of the street. Constricting traffic to one-way would allow for wider bike routes and thus increase the appeal for this street as a Bike Boulevard. Additional enhancements could include roundabouts and bulbouts. A roundabout at W. North St. and Lemon St. could help to slow traffic and provide a break between one-way and two-way portions of the street. Bulbouts would allow for additional landscaping and sidewalk amenities, giving a more pedestrian feel to the street. The Plan recommends that all options and amenities receive thorough traffic study testing and extensive community input prior to implementation.

Other cities have had great success implementing Bike Boulevards such as Tucson (AZ), Long Beach (CA), Berkeley (CA), Minneapolis (MN), and Portland (OR). The recently constructed Bike Boulevard along Vista Street in Long Beach provides a safe route for students at several elementary schools located along the street, as well as a convenient, direct cycling route for students, commuters, and recreational cyclists. The Bike Boulevard improvements included eight roundabouts, bike route identification and directional signage, pavement markings, and a new traffic signal.

2.5 Enhance opportunities for pedestrians

Ensure continuous wide sidewalks.

Anaheim has a great network of sidewalks with curbouts. Many people enjoy walking from their homes to neighboring parks, shopping centers and business areas. People also utilize walking as a form of recreation and exercise. Making sure there are continuous wide sidewalks throughout the City is important for enhancing perceptions of safety as well as pedestrian comfort. Many sidewalks in the City are wide and well-maintained. However, sidewalks are often lacking in the Canyon, industrial, and East Anaheim areas. People who work in industrial areas often have to walk in the street or walk loops around parking lots for exercise.
Provide Safe Routes to Schools.
The Safe Routes to School program is a Federal-Aid program of the U.S. Department of Transportation’s Federal Highway Administration. While the amount of federal funding for the program changes each year, the combined efforts made by schools, parents, schoolchildren, community leaders and local, state, federal, and tribal governments have continued to boost the program’s momentum and longevity. The goal of the program is to make walking and bicycling to school safer and more accessible for children, thereby increasing the number of children who do it. Walking to school can enhance children’s health and well-being, ease traffic congestion near schools and improve community interaction.

2.6 Enhance opportunities for equestrians
Implement network of trails and highlighted crossings.
Anaheim is home to a large population of equestrian riders. Access from private stables to trail areas can be challenging with limited street and bridge crossings present throughout the City. Trails should be compatible for horses, and opportunities to connect to larger regional trail systems should be considered.

Provide access to the Santa Ana River from East Anaheim.
There is a large population of equestrian-neighborhoods in east Anaheim. Connecting to the larger network of equestrian trails, including the Santa Ana River trail, can be challenging for these folks. There are many opportunities to expand horse trails and make connections to the River, including improving access at bridge crossings.

Include staging areas with tie up, mounting blocks and water stations.
Staging areas with amenities for horses and riders are needed in certain areas of the City. Staging areas should include parking for regular sized vehicles as well as horse trailers. Hitching posts to tie-off horses while tacking-up and grooming, water-troughs with hoses, hoses mounted on posts to wash off horses, picnic tables, restrooms, and public horse corrals are also ideal for these locations. The Plan identifies two prime locations for these types of facilities: in Deer Canyon and near Rancho Del Rio Stables (see Appendix A for Connectivity Plan Map).

Develop equestrian exercise courses.
Vacant and underutilized parcels could provide an opportunity for the development of equestrian exercise courses. These areas should connect to trails, but not necessarily to paved roads.

2.7 Accessibility
Promote and design for accessibility for all.
Throughout the network of pedestrian connections there should be several design elements which aid and promote travel by all. These key elements are:

- Directional curb ramps with detectable warnings at intersections, oriented in the direction of travel, not leading into the intersection.
- Accessible pedestrian signals with count-down timers and adequate timing at intersections.
- Sidewalks free of overhanging or protruding objects that are hazardous for people with vision disabilities.
Sidewalks free of tree or drainage grates with large openings, drop-offs at walkway edges, and vertical changes of elevation

Sidewalks in compliance with ADA standards*, free of excessive cross slopes that make it difficult for people who use mobility devices such as wheelchairs or walkers.

*See Appendix G for latest updates to ADA standards regarding trail use.

2.8 Use of Infrastructure Corridors
Consider trails within existing and abandoned rail ROWs.

Existing and abandoned railroad Right of Ways (ROWs) provide important linkages within the transportation network. These passages connect to transit stations and are often removed from congested streets and highways, making them ideal locations for trails and bike routes. The Rails to Trails Conservancy assists communities in transforming former railroad tracks into vibrant trails for walking, biking and more. More detailed information regarding Rails to Trails can be found in Appendix D of this document.

Consider bike routes on utility corridor trails. There are a number of utility easements throughout the City that could accommodate bike routes and other amenities. Working with utility providers to share the use of these spaces provides a great opportunity for expanding the pedestrian and bicycle network. The Plan identifies several green space opportunities along the SCE corridor including: 1. West Corridor Greenbelt, 2. South Corridor Greenbelt, 3. Energy Field Extension, 4. Disney Way Corridor Greenbelt, and 5. Cerritos Corridor Greenbelt.

Top left: Accessible pathway through Anaheim Coves
Top right: Coastal Trail next to ROW, San Clemente
Bottom: Railroad ROWs in the City of Anaheim
The Plan also identifies green space opportunities within Orange County Water District (OCWD) and Orange County Flood Control District (Flood Control) properties near the Cities rivers and basins. These opportunities include: 1. West Anaheim Youth Center Trail Extension, 2. Crescent Basin Open Space & Trail Improvements, 3. Anaheim River Park, 4. Five Coves, 5. Canyon Basins Turf Conversion, 6. Canyon Metrolink Station Connection, 7. East Anaheim Santa Ana River and SR91 Crossings, and 8. Santa Ana River Trail - East Extension.

**Identify no-outlet streets for potential conversion and/or access to open space.**

There are several opportunities within the City to provide green space at the end of no-outlet streets and cul-de-sacs. For example, on Dakota Street the City has recently initiated plans to develop a park at the end of the street. These improvements will also result in increased traffic calming in the neighborhood. There are also opportunities, especially in the Canyon areas, to provide access to trails and open space at the ends of no-outlet streets. Robber’s Roost is a neighborhood driven example of this. The area received a gate at the end of their street that prevents vehicle traffic but still allows pedestrian access to nearby trails. Other areas that have potential for street closures within the City are: north of La Palma Park, Fairmont Blvd., Oak Canyon Drive, and Claudina Street.
health
chapter 3
Anaheim OUTDOORS
Connectivity Plan “IT’S YOUR BACKYARD”
OVERVIEW
A goal of the Anaheim Outdoors Connectivity Plan (Plan) is to provide additional opportunities for improved public health by encouraging non-motorized access throughout the City. Convenient trails, exercise stations, air and water quality improvements, community gardens, enhanced neighborhood parks and pocket parks will encourage greater, healthy multi-generational activity throughout the City.

The following topics describe how this Plan proposes to improve health in the City of Anaheim.

- Increase and promote non-motorized transportation options
- Build trails with exercise stations
- Create fitness loops with mileage/time markers
- Improve existing parks with focus on healthy living
- Establish programs with health care agencies (i.e. Kaiser Permanente, OC Health, etc.)
- Promote the availability of fresh, local, healthful food
- Reduce obesity through improved access to recreation
- Combat “Nature Deficit Disorder”

3.1 Increase and promote non-motorized transportation options
Fitness can be incorporated into everyday activities. During the community outreach residents have expressed a need for better sidewalks in their neighborhoods. Due to the current economic climate, many people can no longer afford to subscribe to health clubs and are instead looking to their neighborhoods for taking walks and recreating. It is important to make changes where people live, work and play in order to make it easier for people to be active and rely less on their vehicles.
3.2 Build trails with exercise stations
Many parks are now incorporating modern exercise stations into their trail systems. These stations contain simplified versions of popular health club items including stair steppers and elliptical machines. These easy-to-use machines draw users from every age group. In the City of Anaheim, both Stoddard and Edison Parks have exercise stations and the City is looking for more opportunities to install these stations.

3.3 Create fitness loops with mileage/time markers
Creating fitness loops with mileage markers gives people the option of a 15min walk, a 30min walk, or more. This feature helps keep people motivated when they realize they are walking further each time. It also reduces feelings of intimidation for those who have limited ability by presenting achievable goals. There is a great example of utilizing mile markers at Anaheim Coves. The Plan recommends including these types of features, as well as encouraging users to utilize technological applications on their hand-held devices to chart distances and let people know how many calories they’ve burned.

3.4 Improve existing parks with focus on healthy living
Existing parks often contain fields that only get used on occasion. There is an opportunity to utilize these spaces for exercise. For instance, the steps of ball field bleachers can be used as an exercise station along a fitness course. Minor improvements can go a long way towards contributing to a more active community. Lighting at park facilities can significantly extend evening opportunities for family exercise, particularly in the winter months.

3.5 Establish programs with health care agencies
Kaiser Permanente’s HEAL Zones program is a perfect example of how health care agencies are joining with communities in the battle against obesity. The Healthy Eating Active Living (HEAL) Zones initiative invests money into specific communities who pledge to increase opportunities for engaging in healthy
behaviors. Activate Anaheim, led by The Anaheim Family YMCA, has recently been awarded a HEAL Zone grant by Kaiser Permanente. The specific area of focus for this grant is bordered by Lincoln St., State College, the 91 freeway and East St., and encompasses 13,124 residents.

Anaheim’s HEAL Zone plan focuses on getting the entire community involved, including parents, students, teachers and principals, markets, restaurants, and local schools (Edison Elementary, Lincoln Elementary and Sycamore Junior High). Some strategies include engaging residents as “Champion Moms/Dads”; adding trails and bike routes; establishing shared community spaces for outdoor play; working with local businesses to make healthy food options more accessible; and providing more opportunities for physical activity before, during and after school.

Activate Anaheim, the team responsible for implementing the HEAL Zone plan, is a robust coalition of partners led by the Anaheim Family YMCA, and includes the City of Anaheim, Disneyland Resort, Anaheim Police Department, Anaheim City and Anaheim Union High School districts, Kaiser Permanente, Tiger Woods Learning Center, Orange County Health Care Agency, and local organizations and resident leaders.

3.6 Promote the availability of fresh, local, healthful food
A major contributor to obesity and illness among urban citizens is the lack of healthy food choices. As fast food chains and convenience stores are increasing in numbers, the presence of fresh, nutritious food sources is dwindling. People eat what is convenient and affordable. In order to counteract this urban health crisis, fresh, local, healthful food should be made available throughout the City.

Awareness programs to teach people the value of healthy eating will be essential in keeping these foods available. Community gardens, school gardens and farmers market venues can provide real opportunities to improve nutrition.
In Anaheim, the Hi Neighbor Community Gardens movement, spearheaded by active community members, is currently working to install temporary community gardens in vacant and unused spaces throughout the City. To date it has established three Hi Neighbor community gardens, one in west Anaheim, one in south, and one in the east. Two additional community gardens are planned for downtown Anaheim and near La Palma Park. Each location is accessible to nearby residents and groups who are beginning to participate in the program. Existing and proposed community gardens are shown on the Connectivity Plan Map in Appendix A.

3.7 Reduce obesity through improved access to recreation
Childhood obesity has both immediate and long-term effects on health and well-being. Prevention is the number one solution to reducing this harmful epidemic. Teaching children from a young age about healthy lifestyle habits is essential. Physical activity is a key element of maintaining a healthy lifestyle and it can be encouraged by establishing attractive, exciting areas for play.

3.8 Combat “Nature Deficit Disorder”
Nature Deficit Disorder refers to the trend that children are spending less time outdoors, resulting in a wide range of behavioral problems. Especially in urban environments, children are more likely to spend after school hours at their computer or video screens rather than outdoors. This lack of activity and connection to the natural environment puts children at risk for mood disorders and childhood obesity.

Getting children excited about walking, biking and play is a critical step in combating Nature Deficit Disorder and promoting a future citizenry that values the environment. Parks and green spaces provide a place for hands-on exploration of plants, trees, bugs and many other types of nature. The Plan encourages the preservation and development of native habitat, demonstration gardens and open play spaces for kids to learn from and interact with living things.
Adults and Senior citizens are also at risk for Nature Deficit Disorder. Adults are spending more time at their computers, on their phones and watching the ever-expanding options of television programming. Access and accessibility often limit seniors’ use of natural open spaces.

Several of the Opportunity Sites described in the Plan offer choices for people of all ages to get connected with the outdoors on a daily basis. The Plan also recommends incorporating ADA standards and guidelines at all parks and greenways within the City. The following proposed projects will include the opportunity to explore natural plant and animal habitats: Nohl Ranch Road Open Space, Olive Hills Park Improvements, Five Coves North, and Crescent Basin Open Space and Trail Improvements. These projects are described in detail in Chapter 8 of this document.
OVERVIEW
The Anaheim Outdoors Connectivity Plan (Plan) will encourage greater pedestrian and bicyclist activity via linkages between recreation areas throughout the City. These areas include parks, school sites, trails, open spaces, golf courses, equestrian facilities, recreation centers, and the Santa Ana River corridor.

The following topics describe ways to connect people with recreation in the City of Anaheim.

- Expand Santa Ana River trails
- Consider active and passive recreational opportunities in underutilized land areas where appropriate
- Transform flood control channels into recreational and transportation corridors
- Encourage the creation of large and small parks for organized and non-organized sports
- Expand recreational uses within electric utility corridors
- Enhance joint use agreements with school and water districts to expand existing recreational opportunities
- Encourage aquatic recreation
- Promote organized sports

4.1 Expand River Trails
The Santa Ana River winds approximately 10.5 miles through the eastern part of Anaheim from Yorba Regional Park to just south of Anaheim Stadium. The Plan recommends not only increasing recreation and mobility opportunities along the Santa Ana River, but also contributing to the completion of the Santa Ana River Trail and Parkway.
The City of Anaheim is a member of the Santa Ana River Trail and Parkway Partnership: three counties (Orange, Riverside, and San Bernardino Counties) and 14 cities, working with the Santa Ana Watershed Project Authority and the Wildlands Conservancy, to complete the Santa Ana River Trail and Parkway. The Partnership has successfully obtained funding for trail construction and will coordinate for long-term trail management.

This regional facility will ultimately include over 100 miles of recreational trail extending along the Santa Ana River, from the San Bernardino Mountains to where the river meets the Pacific Ocean.

In the City of Anaheim there is currently existing paved trail along the river’s east bank through Anaheim extending to Featherly Park to the north, and ultimately 25 miles south to the Pacific Ocean at Huntington Beach. There is developed bicycle trail on the west bank of the river south of the Honda Center. The remaining west and north bank of the curving Santa Ana River from the Honda Center to the Imperial Highway bridge crossing has no riverside trail for public access.

The Orange County Water District’s (OCWD) land north of Lincoln Avenue could be improved as multi-use trails, similar to the recently developed Anaheim Coves along the OCWD’s Burris Basin between Lincoln and Ball Roads.

There is also an opportunity to implement a bike route across Ball Road in order to provide a continuous trail network connecting the San Gabriel River to the Santa Ana River. Utilizing Pacific Coast Highway, this loop would function as a River to River Bike Route, and provide a total of 43.5 miles of trail.
4.2 Consider active and passive recreational opportunities in underutilized land areas where appropriate

In areas planned for dense development such as the Platinum Triangle, it is particularly important to create opportunities wherever possible that provide green space for outdoor enjoyment and relief from the paved, often noisy, urban world. Pocket parks can be a place to retreat and enjoy aspects of nature with plants, animals and sunlight. In addition a water feature or children’s play area can refresh spirits and provide a place to connect with others. A half-court basketball court on a small parcel in an industrial area can provide workers with an opportunity for a lunch time or after work pick-up game. A small parcel can be converted into a community garden for multi-story neighbors who have no soil of their own to tend.

4.3 Transform flood control channels into recreational and transportation corridors

There are a number of flood control channels that cross through Anaheim and could be cooperatively developed to provide more opportunities for people to get off the streets and enjoy walking and biking without conflicting vehicle traffic. These channels eventually tie into the river and could be fingers into the community that encourage access to the river trail. Often these channels pass near existing parks and schools and could provide another off-street bicycle route. Flood control remains the principal role of these channels but during non-flooding seasons the adjacent service roads could be improved to create multiuse pedestrian and bicycle trails that would better link the greater Anaheim community.

4.4 Encourage the creation of large and small parks for organized and non-organized sports

The ability for children and adults to have a place to run and play with unplanned abandon or with rules in an organized sport is a genuine recreation resource for any healthy community that promotes mental and physical health. Convenient practice fields for baseball, softball, soccer and football are particularly hard to find, so any increase in open turf areas would certainly benefit the community.
4.5 Expand recreational uses within electric utility corridors

Utility corridors which cross the City provide a huge opportunity for cooperative development of recreational trails, exercise stations, soccer fields, park amenities, dog parks and/or habitat revegetation that can dramatically improve connectivity across the community.

The primary role of these corridors is to carry high power transmission lines across the region. However, dual use of the corridor is very common and emphasis should be on those activities that best serve the community and could not be provided elsewhere.

Recreational pedestrian trails and bike routes are the easiest to accommodate within the restrictions of the power companies. The City holds a franchise agreement with Southern California Edison (SCE) to provide a fifteen foot wide hiking and biking trail along the SCE corridor. These corridors could provide important connections across the City for pedestrians and bicycle riders of all skill levels.

The Opportunity Sites described in Chapter 8 of this document include several potential projects within the SCE corridor. See Chapter 8 for more detailed information regarding: Energy Field Extension, South Corridor Greenbelt, West Corridor Greenbelt, and Cerritos Corridor Greenbelt.

4.6 Enhance joint use agreements with school districts to expand recreational opportunities

There are nearly 100 school sites within the City of Anaheim. Many of these have open areas or are adjacent to parks or flood control channels that offer opportunities for expanded recreational facility development. Joint-use projects between the City and school districts have included field renovation, sports lighting, and play area upgrades on school sites for after-school public use.

The City also has a joint-use space at the new Ponderosa Library. This 3,500 square foot School Library opened in 2012, and currently serves a student population of 1,083 during the day and the community after school and on weekends.
4.7 Encourage aquatic recreation

There are many opportunities within the City of Anaheim to encourage aquatic recreation. The Santa Ana River is the largest body of water in the City, and some portions are suitable for kayaking and other water sports. Kayaking is currently provided via guided tour in the area of Featherly Regional Park, between the Gypsum Canyon and Yorba Linda bridges.

Fishing is a popular activity at the Santa Ana Lakes and could be enjoyed at other locations throughout the City. Kayak, fishing equipment, picnic pavilion and other types of rentals could benefit the OCWD as a source of income. The County has approved kayak use on the river.

4.8 Promote organized sports

Working with Anaheim youth groups and sports organizations to incorporate their needs is an important part of the Plan. These groups should have the opportunity to stay and play in Anaheim for practices and games.

There are currently 49 parks and schools that are scheduled for sports each year in Anaheim. Many of these parks have more than one field in use, and all fields are used extensively year-round. The turf is often worn out from the wear and tear of repeated practices and games.

For FY2012, 588 permits were issued to organizations for a total of more than 90,000 hours of use on sports fields. The City was unable to accommodate approximately 15% of the demand for use by either existing and/or new user groups.

The greatest need is for soccer fields. An estimated 6,500 soccer players from nine different youth and adult organizations utilize fields in the City of Anaheim.
There are many opportunities to improve Anaheim’s urban environment through sustainable development. Sustainable site planning and construction techniques can reduce pollution and help protect environmental resources for future generations. Promoting interconnected green space such as pocket parks, linear greenbelts and streetside rain gardens can provide opportunities for urban heat island reduction, stormwater retention, and improved water quality. In addition, increasing efforts to reduce water and energy use can lead to a more sustainable and economically stable community.

The City of Anaheim puts forth a strong effort to implement innovative, sustainable and green projects for residents and businesses. In 2012, the City received the Orange County Eco-City Award given by the U.S. Green Building Council. The award recognized the City’s many accomplishments including city incentives, Leadership in Energy and Environmental Design (LEED) Certified buildings, City Council Sustainable goals, website information supporting green building and sustainability, and more.

The following topics describe opportunities for sustainable development and the protection of natural resources in the City of Anaheim.

- Enhance the urban forest by expanding tree planting programs
- Landscape excess rights-of-way
- Create plant and animal habitat in underutilized land areas where appropriate
- Enhance storm water management
- Identify improvements for key vacant/underutilized parcels
- Consider water saving opportunities
- Continue developing opportunities for roof gardens, solar panels, and alternative energy
- Strive to reduce Green House Gas (GHG) emissions by enhancing the transportation network
- Promote Green Streets
- Encourage the use of electric vehicles
- Adopt landscape palette and standards that include drought-tolerant and native plants
5.1 Enhance the urban forest by expanding tree planting programs

Enhancing the City’s TreePower planting program can have a number of beneficial results for the greater Anaheim community. Healthy mature trees break up heat islands, decrease flooding from stormwater runoff, absorb carbon dioxide and reduce energy consumption by shading buildings. Large areas of asphalt and concrete trap the heat of the sun and reflect it back into the environment, contributing to smog, global warming and higher energy costs. Trees provide shading that mitigates these harmful effects.

The TreePower planting program is a free shade tree program offered by Anaheim Public Utilities in partnership with Anaheim’s Community Services Department. TreePower has been in operation for 20 years and has provided over 46,000 free shade trees to Anaheim homeowners, multi-family complexes, schools, businesses, and non-profits. Well-placed, mature shade trees can reduce air conditioning use by 10% to 40%, saving money and electricity. Trees make the air feel cooler by releasing water vapor from their leaves. Mature trees have a significant potential to save energy, conserve water and clean the air. They can reduce water use of a lawn by 30% to 50%. Further, trees help keep the air healthy by releasing life-sustaining oxygen. These naturally attractive additions to the landscape also enhance the community’s beauty.

There is opportunity within the City to create volunteer programs to remove invasive species, plant native trees and care for trees in the City’s parks and public places. Offering programs that help residents care for and maintain their own trees will result in healthier trees and increase the overall tree canopy in the City.

5.2 Landscape excess rights-of-way

Landscaping in medians, sidewalks and other excess rights-of-way enhances the livability of the...
Anaheim urban environment. The addition of trees, shrubs, groundcovers and landscape amenities can transform excess right-of-ways where people walk, shop and meet in many ways. In addition to the aesthetic benefits, landscaping also provides environmental benefits such as increased shading, decreased flooding from stormwater runoff, and increased habitat for urban animals and insects. More extensive greening often contributes to greater usage by pedestrians and bicycle riders as well as a more positive association with the route and surrounding community, both of which are goals of the Anaheim Outdoors Connectivity Plan (Plan).

5.3 Create plant and animal habitat in underutilized land areas where appropriate

There are many opportunities within Anaheim’s urban environment to create habitat and areas for animals and insects to forage. Underutilized land areas such as street closures in quiet streets, empty lots, park perimeters, and canyon slopes can provide appropriate space for naturalized landscaping. Trees should be used to allow small birds to rest, to screen and protect moving wildlife and to provide shelter from hot summer temperatures. Shrubs that are dense and offer a range of resources such as seed, nectar, and nesting material should be considered. Maintenance practices should be non-intrusive and take consideration of nesting seasons and other factors specific to the existing flora and fauna.

Where habitat areas are created adjacent to trails, residences and businesses, particularly near the hills of east Anaheim, it is important that caution be taken to avoid conflict with predatory animals.

The Plan proposes several Opportunity Sites with a native plant component including: Nohl Ranch Road Open Space, Olive Hills Park Improvements, Five Coves North, and Crescent Basin Open Space and Trail Improvements. These projects are described in detail in Chapter 8 of this report.

5.4 Enhance storm water management

Consider Low Impact Development (LID) practices

Low Impact Development (LID) is an approach to site planning that focuses on stormwater management for water quantity and quality protection. It is an alternative to more traditional development and management practices that involve rapid removal of stormwater runoff via storm drains and pipes. The intent of LID is to mimic a site’s pre-development hydrology, especially runoff rates and volumes, by using planning and design methods that minimize development impacts, protect important hydrologic features, and integrate BMPs (Best Management Practices) to keep stormwater on the development site as much as possible.

LID results in reduced peak runoff flows that are typical of traditionally developed sites, and the BMPs tend to improve water quality through removal or treatment of pollutants and suspended solids. In addition to limiting disturbance of existing
vegetation and soil, common design BMPs include use of permeable paving, rain gardens and other bioretention facilities, vegetated swales and buffers, treatment wetlands, green roofs, dry wells, and rooftop runoff collection using rain barrels or cisterns.

LID also includes training and outreach for proper maintenance and pollution prevention practices. More information on LID is available through the U.S. Environmental Protection Agency website at http://water.epa.gov/polwaste/green/index.cfm.

The Opportunity Sites proposed by the Plan can integrate various LID practices to help the City address stormwater volume and water quality standards. More than half of Anaheim’s domestic water is provided by groundwater aquifers. Water captured and infiltrated at these sites can be used to recharge vital groundwater stores. LID practices can also help to reduce flooding and clean polluted water before releasing it into stormwater channels. Some sites lend themselves to becoming neighborhood- or

district-level stormwater facilities where larger areas can be used to collect runoff for flood detention, biofiltration and infiltration. Possible design BMPs for the Opportunity Sites include the following:

- Permeable pavements in parking lots (under parking stalls).

Rain Gardens and bioswales:

Permeable Paving:

Permeable paving in parking strip

Permeable paving - cross section

Bioswale

Bioswale - cross-section
- Rain gardens and bioswales integrated into landscapes.
- Bioswale “strips” along bike trails with drought tolerant planting.
- Inverted bioswales or raised planters in parkways to capture, treat, and infiltrate run-on flows from adjoining buildings or lots.
- Small treatment wetland “basins” located at sumps or confluences of tributary City storm drains.
- Drywells located to capture and deliver rainwater to recharge groundwater/aquifer.
- Impoundments in channels to capture dry season flows for diversion to treatment wetlands.
- Permeable pavements encouraging infiltration where soils are conducive.
- Curb bump-outs at intersections and mid-block crossings, or red curb zones (no parking losses) to capture, treat and infiltrate gutter flows. Note: induces traffic calming for improved pedestrian experience.

- Consider “alternative” standards for streets, alleys, and trails that enable non-traditional, but practical and effective stormwater management.
- Investigate combined flood control detention and Stormwater quality functions in District or Community level basins (e.g. Stadium area).
- Retrofit or enhance soft bottom channels for maximum infiltration.
- Incorporate Stormwater planters that detain and filter water before releasing it back into the storm drain.

**Stormwater Planter:**

- Stormwater planters

**Treatment Basin/Wetlands and Dry Well:**

- Treatment basin
- Treatment wetland
- Dry well
5.5 Identify improvements for key vacant/underutilized parcels

Several vacant/underutilized public parcels throughout Anaheim have been selected as prime locations for improvements. These areas were chosen due to their ability to fulfill several goals of the Plan. They are depicted on the map below.

Several of these sites are identified as Opportunity Sites and are described in further detail in Chapter 8 of this document. In total, these parcels add up to over 130 acres of potential greenspace.

5.6 Consider Water Saving Opportunities

Consider storing water at well sites

When restarting a drinking water well, the City pumps the well water to waste (e.g., into a storm drain) for a certain period of time to assure that potential pollutants are removed before the well begins pumping into the City’s drinking water system. This procedure, which is to meet the California Public Health drinking water regulations, results in the loss of approximately 30 million gallons of water each year. The City of Anaheim could incorporate storage ponds or underground tanks at some of the well sites (such
as Ponderosa and Chaparral Parks well sites) to save some of this water for irrigation purposes.

Moreover, the City is also actively pursuing the development and use of recycled/non-potable water in its service area to offset the use of potable water. Recently, the City completed a City-wide Water Recycling Study that identified potential uses of recycled water in its service area. Ten primary recycled/non-potable water supply alternatives were developed to meet existing and future non-potable water demands at various locations within the City. The potential sources of water included local shallow groundwater, brackish groundwater, and the Orange County Water District’s Groundwater Replenishment System (GWRS) pipeline. The City is currently evaluating the feasibility of delivering water from the GWRS pipeline to Anaheim Resort and the Platinum Triangle areas. The recycled water could provide a drought-proof, reliable source of water for industrial uses, toilet flushing, and landscape irrigation.

Encourage water efficiency education for residents
For highly urbanized areas such as Anaheim, water use efficiency continues to be the most cost-effective approach to ensuring reliable water supplies for future generations. Anaheim has emphasized a voluntary and incentive-based approach over mandates and penalties to encourage customer adoption of long-term water use habits. The City offers incentive programs designed to assist all customers, from residents to big business, in improving water use efficiency and reducing their utility costs.

More than half of the urban water supply is used to irrigate landscapes, and one of the best ways to conserve limited resources is to make these landscapes water-efficient. The City of Anaheim has adopted the Landscape Water-efficiency Ordinance and Guidelines to provide landscape design parameters and specifications for residents, landscape professionals, developers, and contractors to follow when planning and completing landscape projects in the City.

In addition to the Guidelines, the City is currently constructing a Water Recycling Demonstration Facility to demonstrate water recycling and landscape water efficiency techniques first-hand to the public. It will incorporate sustainable elements such as a demonstration garden featuring drought-tolerant landscaping and water efficient irrigation. It will also feature porous pavement and rainwater harvesting elements which help in storm water management and groundwater recharge.
5.7 Continue developing opportunities for roof gardens, solar panels, and alternative energy

City-wide roof garden and alternative energy efforts
The placement of roof gardens and solar panels on municipal buildings is a growing trend in cities around the nation. Solar panels are an environmentally and economically responsible improvement that cities can benefit from. Many funding opportunities exist for these types of improvements, making them attainable in the current economic climate.

Roof gardens reduce the overall heat absorption of a building and heat island effects, thus reducing energy consumption. Small-scale food production can occur at these sites, and building inhabitants can join in gardening efforts as well as in consuming the fruits of their labor.

Anaheim has already installed a green roof garden on the Anaheim Convention Center. The City has been committed incorporating solar energy since 2000 when it completed a 100 kW capacity system for the Convention Center. Currently, the City has planned a solar energy system that will have minimum capacity of 1.5 MW. It is scheduled to commence construction in the summer of 2013 and be completed in the winter of 2014.

The Anaheim Solar Advantage Program was developed in 2006 to meet the requirements of SB1. The City's Public Utilities Department is allocating $35 million to be spent between 2006 and 2016 in technological and financial support for customers who install solar energy systems. Since 2006, the concept of green roofs has gained popularity as a way to improve the environment and reduce energy consumption in buildings.
Utilities Department has paid incentives totalling $9.8 million to help create 365 solar energy systems that are producing 3.9 MW of energy.

The Public Utilities ‘renewable energy programs’ are also key elements in meeting the State mandate for the proportion of energy derived from renewable sources by December 2020. The focus is on local sources of renewable energy (distributed generation), specifically private solar energy systems.

During the past year, the Department provided $3.7 million in incentives to its electric utility customers; 166 grid-connected energy systems were installed; 706 kW of additional capacity online; and 2,029,031 kWh were delivered to the grid.

The Green Power for the Grid Program is another element of the City’s Renewable Energy Program. It offers customers the opportunity to accelerate the Department’s acquisition of green power by contributing an additional two cents for each kilowatt-hour they consume. Nearly 100 customers participated this past year allowing over 1 million kWh to be purchased for renewable energy sources.

The Plan recommends that all new public and private buildings developed within the City consider the installation of roof gardens and/or solar panels following LEED green roof and solar practices.

The City can also incorporate solar cells on street lights that are installed along trails to areas that cannot be reached by electric service. Solar powered emergency phone boxes can also be added on some of these street light poles at regular intervals along the trails.

County-wide alternative energy efforts
In 2004, the County of Orange began design and construction on the conversion of its existing Central Utility Facility (CUF) to produce electricity through the power of cogeneration (cogen). The 10.4 MW CUF cogen plant began operation in November 2009 and is saving the County approximately $5 million annually in avoided electricity costs. At the beginning of 2011, John Wayne Airport brought the County’s second cogeneration plant on-line, a 6 MW facility.

Another type of alternative energy being produced by the County is landfill gas-to-energy. The County currently has landfill gas-to-energy projects at three of its landfills and is in the process of developing three more. Also, in 2005, the County installed a small solar system at its Foothill Ranch Library; and in 2010, the County Board of Supervisors approved a Solar Power Purchase Agreement with PsomasFMG that is anticipated to save the County approximately $4.4 million over 20 years.

The County has also pursued energy efficiency and other sustainability measures. With federal Energy Efficiency and Conservation Block Grant funds the County completed lighting retrofits of 10 buildings and hired a consultant to write an Energy Roadmap for the County. The County owns and operates...
a compressed natural gas fueling facility. As the permitting authority for its unincorporated areas, the County promotes on-line permitting options. For its own procurement practices, the County has an Environmentally Preferable Purchasing Policy. In May 2012, the County hosted its third annual OC Green Fair. The County continues to explore all options for how it can reduce its operating expenses and be green simultaneously.

5.8 Strive to reduce Green House Gas (GHG) emissions by enhancing the transportation network

In order to help to meet the Anaheim’s GHG reduction targets for 2020 and 2035, set by the Global Warming Solutions Act of 2006 (AB32) and the Sustainable Communities and Climate Protection Act of 2008 (SB375), the City is promoting the use of alternative transportation (public transport, bicycle routes, carpooling) through various initiatives. One of these initiatives to reduce emission is to reduce Vehicle Miles Traveled (VMT) by introducing new bicycle facilities and routes. The Plan proposes to implement a city-wide Urban Greening Program which will add 180 miles of additional bicycle routes. The goal of this initiative will be to reduce the overall number of VMT and reduce GHG emissions in the various districts.

This City is divided into eight subareas within which the city-wide potential GHG reduction emissions will be calculated.

The GHG emission reductions were calculated using VMT reductions that would occur following the implementation of the proposed bike routes shown on the Connectivity Plan Map. These numbers were calculated by district. Note that these values can be considered to be conservative in that they only address commute trips (non-work trips were not included).

GHG emission factors were then calculated using the Emission Factor (EmFac2011) model developed by the California Air Resources Board (CARB). Carbon dioxide emissions are the primary GHG emission associated with vehicle travel. Carbon dioxide, methane, and nitrous oxide have different GHG impacts. Methane has an impact equivalent to 21 times that of the equivalent mass of carbon dioxide, and nitrous has an impact equal to 310 times that of the equivalent mass of carbon dioxide. Total emissions are shown in metric tons of carbon dioxide equivalent (MTCO2e). The City would reduce its GHG emission reductions by approximately 56 metric tons of carbon dioxide equivalent if all 180 miles of bicycle facilities proposed by the Plan were implemented.
5.9 Promote Green Streets

Paved streets comprise a large percentage of the urban environment. Because of their imperviousness, plus the motor vehicle pollutants that collect on paved surfaces, streets contribute substantially to a city’s stormwater runoff quantity and water quality problems. Developing “Green Streets” is an approach to street design and retrofitting to improve stormwater management, while also enhancing neighborhood aesthetics and walkability. Green Streets can incorporate the following elements: more vegetation (including trees) in parkway strips to intercept and infiltrate rainfall, corner bulbouts with filtration plantings to help detain and treat stormwater runoff, permeable paving where possible in the right-of-way (e.g., parking zones), and structural soils for street trees that are surrounded by paving.

5.10 Encourage the use of electric vehicles

Anaheim has a long history of promoting the use of green vehicles. The Anaheim Public Utilities department currently offers financial assistance in the form of a rebate for electric vehicle (EV) owners.

The 2006 Anaheim Green Resolution dictates that 90% of the City’s light and medium utility fleet vehicles will be replaced by Alternative Fuel Vehicles by 2020. There are several EV charging stations throughout the City, as shown above, which are available for use by residents, local employees and visitors who drive EVs. The City encourages all private and public property owners to install EV charge stations.
5.11 Adopt a landscape palette and standards that include drought-tolerant and native plants

Utilizing a standardized list of plant species within the City of Anaheim makes it easier for both public and private developers to choose plants that are best suited to Anaheim’s climate and appropriate for the level of desired maintenance. The Plan encourages the use of resource conserving native and drought-tolerant plants, and includes an extensive list of plants that are appropriate for different situations such as residential, streetscape, commercial or wildland. This list, or plant palette, can be found in Appendix B.

Avoid invasive species
The Plan strongly recommends avoiding “invasive” plant species in both public and private landscapes. Invasive species of plants are those that adversely affect the surrounding habitat and/or threaten biological diversity. Some common invasive species that are often planted in the urban environment include: Pampas grass (Cortaderia selloana, Cortaderia jubata), Scotch Broom (Cytisus scoparius), Fountain Grass (Pennisetum setaceum) and Mexican Feather Grass (Nassella tenuissima).

These plants are often selected for their attractive and fast-growing nature. However, they tend to grow at such a rapid rate that they quickly outgrow their surroundings and spread throughout the neighborhood and into surrounding natural areas. Once established, these plants out-compete native plants for resources, creating mono-cultures and reducing the diversity that insects, birds and other animals rely on for their survival.

Many of these plants also produce large quantities of seeds and other debris that become a nuisance to homeowners and landscape maintenance crews. Their rapid growth is difficult to control and often requires the use of repeated chemical application which is expensive and toxic to the environment.

Utilize drought-tolerant and native plants
Drought-tolerant and plants native to southern California are naturally adapted to dry conditions. These types of plants are especially suitable to the low-rainfall and warm, sunny climate of Anaheim. Depending on the species, drought-tolerant and native plants can survive with little to no supplemental water in arid regions. However, in the urban environment it is often beneficial to supply some water year-round to ensure that plants bloom frequently and look their best. In areas where turf is essential, low water use turf species should be considered.

Drip irrigation is often recommend for these types of plants, as it provides a low volume of water with little loss to evaporation. Using drought-tolerant and native plants in combination with drip irrigation can drastically reduce landscape water usage, and is recommended by the Plan for both public and private landscape developments whenever possible.
OVERVIEW
Creating improved non-motorized trails, greenbelts, neighborhood parks and pocket parks will result in more recreation opportunities and aesthetic enhancements that increase associated property values, help reduce vacancy rates and attract employers to the City. The Anaheim Outdoors Connectivity Plan (Plan) enhancements will provide a city-wide attraction for continued business and residential investment in the community.

The following topics describe opportunities for economic benefit in the City of Anaheim.

- Increase property values and attract new businesses by enhancing access to recreation and open space opportunities
- Utilize the Plan to spur neighborhood and district improvements
- Increase property values and decrease vacancy rates by providing parks and open space in park deficient areas
- Work with developers and business owners to coordinate plans
- Identify opportunities to coordinate the Plan with tourism (i.e. Disney Marathons, Outdoor Exhibitions at Anaheim Convention Center, etc.)

6.1 Increase property values and attract new businesses by enhancing access to recreation and open space opportunities
Access to parks and open space is a strong factor in determining where people live and work. Residents and workers desire to be near parks and open space for passive and active recreational opportunities.

A recent study conducted by the Trust for Public Land entitled *Measuring the Economic Value of a City Park System* looked at the effects of parkland on homes and local business. “Using the conservative value of 5 percent as the amount that parkland added to the assessed value of all dwellings within 500 feet of parks,”
The study concluded that in Washington, D.C. the total amount that parks increased property value was approximately $1.2 billion (Harnik and Welle, 2009). That calculated out to a total of almost $7 million in additional property tax revenue for the City in the year 2006.

The study also looked at parks as a potential draw for tourists and tourist spending. San Diego, home to Balboa Park and several other park attractions, received over 16 million visitors in the year 2007. A survey conducted by the report determined that 20% of those visitors “visited because of the parks”. After calculating the average daily spending of the tourists, the study was able to determine that total park-derived tourist spending in San Diego in 2007 came to over $114 million. Tax revenue for the City was calculated at over $8 million for park tourist spending alone. The local economy also profited from the tourist’s spending, at an estimated $40 million.

These numbers confirm that increasing and enhancing parks and open space in the City of Anaheim can offer many benefits to residents, businesses and local government.

6.2 Utilize the Plan to spur improvements
The Plan identifies opportunities for improving access to parks and open space and can be a catalyst for change. Neighborhood groups and individual citizens on a street by street basis can use and leverage appropriate aspects of the Plan to spur transformation and change near their homes and places of work. This can come through focused discussions with neighborhood and civic leaders, volunteer and non-profit organizations and direct application for local state and federal grants to fund neighborhood improvements such as creating new parks, trails, enhanced sidewalks and open space.

6.3 Provide parks and open space in park-deficient areas
As with any city, there are certain areas of Anaheim that have fewer parks and open space resources. It is important to address these park-deficient areas by either creating more park space or enhancing connectivity to existing park space.
6.4 Work with developers and business owners

Developers and business owners have already begun embracing the Plan due to its economic value. The team has met members of the development community to discuss opportunities, and review their individual plans for development. Development proposals that slowed during the recent economic downturn could be revisited with an eye on opportunities for how individual plans can be modified and coordinated with the Plan. Examples of this coordination include orientating buildings and street frontages towards new open spaces and parks, improved access to bike routes and hiking trails and providing of on-site amenities such as bike racks and lockers.
6.5 Identify opportunities to coordinate with tourism

The Plan is being coordinated with leaders in Anaheim tourism including the Disneyland Resort, Anaheim Convention Center, Angels Stadium and Honda Center. While the Plan is geared towards residents and workers in Anaheim, the City has a significant tourism population that can share in the opportunities for new and improved parks and open space, and enhanced connectivity including bike routes and hiking trails. Hotels can provide improved access to parks and trails for visitors. Tourists staying in local hotels would also benefit from improved bike and pedestrian routes such as tree-lined promenades connecting them to events at Angels Stadium and Honda Center.

Tourists and residents alike can take advantage of the new bike sharing program in the City of Anaheim. This is a pilot program, at no cost to taxpayers, and operates in the City’s major activity centers including The Anaheim Resort and Platinum Triangle.

The Plan identifies several projects that would be a draw for tourists. With the Santa Ana River adjacent to major entertainment venues such as Angels Stadium of Anaheim, Honda Center, The City National Grove and major transportation hubs such as ARTIC (with Amtrak, Metrolink, bus service and future ARC) the Santa Ana riverfront has the potential to become a community treasure and national destination.

Near the Angel Stadium lies a large swath of land ideal for featuring a cultural plaza, meandering walking trails, viewing platforms, art displays, murals, and more. From farmer’s markets to eclectic festivals, this linear pathway of peaceful nature within the rich and vibrant urban environment could offer a multitude of events.

River walks are popular with tourists for their diverse offerings from picnicking to bird-watching to food-festivals. They’ve become popular with cities across the nation as a way to increase revenue and utilize vacant land along riverfronts. The famous San Antonio River Walk attracts more than five million visitors annually to its four-mile path along the San Antonio River.
The proposed Five Coves North and the existing Anaheim Coves are also perfect for vacationers who desire outdoor recreation opportunities. These riverfront greenspaces offer a relaxing change from the high sensory experience of Disneyland and other attractions and could be used as venues for special events (i.e. benefit walks, marathon routes, competitive cycling circuits, etc.).
OVERVIEW
The City of Anaheim is dedicated to the safety of all persons who live, work, play and go to school within our City. The Anaheim Outdoors Connectivity Plan (Plan) embraces that same dedication and philosophy by incorporating public safety into each project from the beginning stages of design.

The Plan will contain design features within each of the varied projects that, when implemented, will provide residents, visitors and our emergency responders with a clear road-map to safety for everyone involved. Features such as uniform wayfinding unique to each specific project, lighting, parking and accessibility, hours of operations, as well as, the layout of the specific project will all be designed with the safety of its visitors in mind.

During an emergency or any situation where rescue personnel are needed, the caller can feel secure knowing the City of Anaheim projects have been created to maintain the aesthetic beauty of their surroundings while giving emergency personnel immediate and simple landmarks to assist with locating the caller and getting the necessary services on site as quickly and efficiently as possible. Additionally, internal education and awareness training for key personnel, public awareness campaigns and safety education within our schools, businesses and neighborhoods will highlight these safety features and reinforce the mission of our public safety agencies.

Specialized community events focused on safety, as well as increased business and neighborhood watch participation will create a partnership between the emergency responders, key interest groups and the people who utilize the bike and pedestrian facilities. This exceptional blend of cutting edge technology, facility design and good old fashioned face to face interaction will add to the family friendly appeal of the City of Anaheim.

The following topics describe how the Plan aims to enhance safe outdoor movement in the City of Anaheim.

- Pedestrian Safety
- Bicycle Safety
- Trail Safety
- Railroad Safety
- SCE Safety
- Safety Education
7.1 Pedestrian safety
Pedestrians can be faced with a variety of challenges in the urban environment including: uneven surfaces, narrow sidewalks, limited and busy intersection crossings and lack of sidewalk curb ramps. In areas where there is busy vehicular traffic, pedestrians may desire increased setbacks from the busy road to increase their sense of safety. On the other hand, areas with slower traffic might require increased night lighting and visibility. Every situation is different and each project requires a thorough understanding of site specific variables. Some factors that can enhance the comfort of the pedestrian experience include: well-marked cross walks, street names under bridges, median pedestrian refuge areas, wider sidewalks, traffic calming and appropriate crossings.

Wayfinding is an important aspect of safe pedestrian navigation through Anaheim’s public streets and trails. The modern definition of wayfinding refers to the user experience of orientation and choosing a path. It includes signage and other cues in the environment to aid orientation. Proper signage and/or a signage program should be considered during the initial planning stages of all Opportunity Site projects described in Chapter 8 of the Plan.

7.2 Bicycle safety
City designated bicycle routes will be implemented wherever possible to provide alternative travel options throughout the City. When possible, the routes should be designed so that riders of all skill levels feel comfortable, from the most experienced commuters to cyclists who ride only once or twice a year.

Proper safety equipment coupled with bicycle safety training benefit both commuter and recreational bike riders. The City should strive to host several community bicycle safety events each year. Opportunity sites such as the Lemon Street Bike Boulevard and Santa Ana Bike Boulevard are ideal locations to hold demonstrations and workshops on bicycle safety. The recently constructed Anaheim Coves would also be a great location for increasing public awareness of local bike routes while teaching proper trail sharing etiquette.

Multi-modal transit design, such as the ARTIC in Anaheim, should include many features to increase the safety and comfort of cyclists. Trail access, bike lockers, under and over crossings and wayfinding signage are some of the elements designed for the ARTIC that should be considered in all future projects that cater to multi-modal transit.

Refer to the following documents in Appendix G of this report for more information on bicycle safety:
- Bike Riding Dangers
- Bike Safety Quiz
- Rules of the Road for Riding Safely
7.3 Trail safety
Bicyclists, pedestrians and equestrians often share the use of trails. Knowing when to yield the right of way to those passing is an important aspect of trail safety. Well maintained trail surfaces and lit pathways can also enhance safety and increase the enjoyment of the trail experience. Safely getting to and from trails can be a challenge. Increased trail connections can help encourage the use of trails as well as enhance the safety of existing users. The Plan describes several Opportunity Sites for incorporating new trails.

Refer to the following documents in Appendix G of this report for more information:
* Sharing our Trails – A Guide to Trail Safety and Enjoyment

7.4 Railroad safety
The rail system in Anaheim has been established and active for decades. Most of the rail lines in Anaheim are active lines, and development of trails or bike routes within the right-of-way will require balancing trail safety with railroad operations. When designed properly, this type of project can increase mobility and recreation choices, improve the appearance of the right-of-way, enhance property values and reduce trespassing and injuries or death from illegal track crossings.

Planning for projects within the railroad right-of-way should involve the rail owner/operator from the earliest stages. Coordination with California Operation Lifesaver is recommended (www.caol.us). Safe trail design, liability, indemnification, design approval by the rail operator, and maintenance access should all be considered in the project design and development stages.

7.5 SCE safety
The high powered transmission lines within the utility easements require safety considerations for compatible ground use. Specific vertical and horizontal safety clearances from towers are required by SCE and affect planting and proposed site improvements. Grounding of all metal improvements within the easement (fences, gates, drinking fountains, signs, site furnishings, exercise or play equipment) are required to prevent accidental electrocution. Signage warning of unsafe uses such as

Refer to the following documents in Appendix G of this report for more information:
* Sharing our Trails – A Guide to Trail Safety and Enjoyment

Above: Anaheim ‘Share the Trail’ Sign

Development in SCE easement at Liberty Park, Cerritos
as fires, kite flying, metallic balloons, etc. must be posted in accordance with SCE requirements in dual use areas. Irrigation systems must be installed to avoid contact with existing and future towers and SCE maintenance equipment. Trails and pathways must be designed so that large maintenance trucks and earth moving equipment do not intercept with bicyclists and pedestrians.

### 7.6 Safety Education

Whether you are a pedestrian, bicyclist or equestrian, education is key to making safe choices. Being aware of the rules of the road, the appropriate safety attire and equipment, and the surrounding environment all contribute to a safe trip. It is important that people of all ages protect themselves with the proper equipment, not just young children and commuters.

The following materials, which can be found in Appendix G, will test your knowledge of bike and pedestrian safety.

- Bike Riding Dangers
- Bike Safety Quiz
- Being Safe with Signs
- Getting to School Safely
- Rules of the Road for Riding Safely
- The ABC Quick Check
- Protect Yourself from Violent Crime
The Anaheim Outdoors Connectivity Plan (Plan) is meant to be a catalyst for initiating or further developing physical connections and site enhancements that will promote healthy access and outdoor activities throughout the community.

The following topics lay out the framework for implementing the Plan in the City of Anaheim.

- Consider all potential projects regardless of size - ‘no project too small’
- Coordinate with Anaheim Capital Improvement Projects and other agency improvement projects
- Strengthen public/private partnerships
- Identify opportunities for private and non-profit investment
- Enhance inter agency partnerships
- Identify and apply for local, state and federal grants
- Identify opportunities for bonds, assessments, fundraising, etc.
- Work with regulatory agencies and property owners to encourage establishing and protecting habitat
- Establish a maintenance and operations plan
- Establish optional bike licenses
- Identify CEQA Requirements

8.1 Consider all potential projects regardless of size - ‘no project too small’

As part of the phasing strategy, connections or enhancements that require the least amount of coordination, effort, or money to implement will be identified and prioritized. These projects will likely include: improvement of existing easements; existing City owned facilities and properties; single agency collaborations; public/private partnerships and favorable grant funding opportunities.

8.2 Coordinate with Anaheim Capital Improvement Projects (CIP) and other agency improvement projects

All Anaheim CIP projects and other agency projects have the potential to include connectivity aspects and/or take advantage of potential collaborative projects that would improve the greening and linkage opportunities envisioned in the Plan. This coordination is especially important in any road or street improvements where alternative transportation modes (pedestrians, bicyclists, transit users) should be considered. As streets are rehabilitated, each project should be evaluated to determine if facilities for pedestrians, bicyclists, and/or equestrians could be included, on a case by case basis.
8.3 Strengthen public/private partnerships
Continue to communicate with business owners, utility companies, railroads and developers and present the connectivity opportunities and benefits of a collaborative approach to improving the connectivity and quality of life in Anaheim. A great example of this approach is The Anaheim Resort enhancements which have benefitted not only the associated businesses but the community aesthetic overall.

8.4 Identify opportunities for private and non-profit investment
There are many private and non-profit groups who would benefit from the connectivity enhancements envisioned in the Plan. Equestrians, Boy Scouts and Girl Scouts, the Bicycle Coalition, YMCA, senior groups, service clubs, sports groups, Audubon society, Back to Natives, and Inside the Outdoors have definite interests in the greening and connectivity opportunities in the City. At the public meetings there was interest expressed in volunteer opportunities to assist in installations and maintenance of landscape improvements.

8.5 Enhance inter agency partnerships
With the confluence of freeways, watersheds, river, creeks, storm channels, railroads, etc., there are many agencies that have interests and responsibilities in Anaheim. All have been involved to some degree in the development of the Plan. The intent in implementation is that partnership opportunities are continually explored and developed as the City evolves and wherever possible, collaborative greening projects can produce a benefit to multiple agencies and the community at large. An excellent example of this is the collaboration between the City and OCWD to create a recreation trail resource at Anaheim Coves. The improvements, funded by State grants obtained by the City, were implemented on OCWD property at Burris Basin.

The Plan identifies several Opportunity Sites within the SCE Corridor. In most of these areas SCE owns the right-of-way in fee and leases the right-of-way to the City or some other owner. When this is the case, all recommended additions to the land must

<table>
<thead>
<tr>
<th>Opportunity Sites</th>
<th>City of Anaheim</th>
<th>Orange County Water District</th>
<th>Orange County Flood Control</th>
<th>Southern CA Edison</th>
<th>CalTrans</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Anaheim Youth Center Trail Extension</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>West Corridor Greenbelt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>South Corridor Greenbelt</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Crescent Basin Open Space and Trail Improvements</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy Field Extension</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Disney Way Corridor Greenbelt</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Lemon Street Bike Boulevard</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Santa Ana Bike Boulevard</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cerritos Corridor Greenbelt</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anaheim River Park</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Five Coves</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canyon Basins Turf Conversion</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canyon Metrolink Station Connection</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Olive Hills Park Improvements</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>East Anaheim Santa Ana River and SR91 Crossings</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Nohl Ranch Road Open Space</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Santa Ana River Trail - East Extension</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
be approved by SCE, and working with SCE can be a long and complicated process. Some cities have acquired the greenbelt property in fee and given SCE a perpetual easement for their transmission lines. Deeding the property to the City takes the liability risk off of SCE and allows the City to put more recreational uses along the greenbelt. The deed generally includes restrictions to prevent any development that might interfere with SCE access and operation of their transmission lines. If the proposed additions and improvements for recreation purposes are very limited, pursuing acquisition of the right-of-way in fee is not usually necessary. Therefore the process for each Opportunity Site project should be considered on a case by case basis.

8.6 Identify and apply for local, state and federal grants

With the variety of environments and potential connectivity projects afforded in Anaheim, there will likely be strong opportunities to apply for grants to plan and implement specific Opportunity Site projects envisioned in the Plan. Having the Plan is a definite advantage in competing for grants as it illustrates the City’s vision and commitment toward sustainability, health, greening and linking urban resources to better serve the greater Anaheim community. Potential funding bodies include:

- Land & Water Conservation Fund - provides matching grants to States and local governments for the acquisition and development of public outdoor recreation areas and facilities

- Southern California Association of Governments (SCAG) - the nation’s largest metropolitan planning organization, representing cities and more than 18 million residents, SCAG undertakes a variety of initiatives to encourage a more sustainable southern California

- Habitat Conservation Fund - allocates approximately $2 million each year for grants to cities, counties and districts to provide for nature interpretation and other non-capital outlay programs which bring urban residents into park and wildlife areas, to protect various plant and animal species or to acquire or develop wildlife corridors and trails

- Recreation Trails program - provides funds to the States to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. The RTP is an assistance program of the Department of Transportation’s Federal Highway Administration. Federal transportation funds benefit recreation including hiking, biking and equestrian uses

- California Department of Transportation (Caltrans), Transportation Planning Grant Program - funds are available each fiscal year for planning projects that improve mobility and lead to the planning, programming, and implementation of transportation improvement projects

Above: Grand opening at Lemon Park, Fullerton

Below left: Grand Opening at Colony Park, Anaheim

Below right: Grand opening at Lemon Park, Fullerton
Orange County Transportation Authority (OCTA) Measure M - OCTA administers a variety of funding programs through Measure M including Freeway, Transit, Streets and Environmental Mitigation.

OCTA Bicycle Corridor Improvement Program (BCIP) - funded using federal Congestion Mitigation and Air Quality (CMAQ) funds. Available to local government agencies in Orange County for transportation-related projects that reduce congestion and improve air quality.

Caltrans - Environmental Justice and Community-Based Transportation Planning Grants Program - provide grants for developing and studying the sustainability of land use plans. Products include expanded transportation choices, encouragement of transit oriented and mixed use development, and a contribution to positive local planning efforts.

Caltrans - Bicycle Transportation Account (BTA) is an annual program providing state funds for city projects are designed and developed to achieve the functional commuting needs and physical safety of bicyclists.

Environmental Protection Agency (EPA) - provides grant funding for several areas including projects that improve water quality, control water pollution, and watershed and wetland conservation.

8.7 Identify opportunities for bonds, assessments, fundraising etc.

Explore assessment and/or bond funding opportunities for construction and on-going maintenance costs of connectivity improvements that clearly benefit those financially supporting the improvements.

General Obligation Bonds make sense when a city has several different types of facilities it needs to develop and there is strong community support. There is a two-thirds voter approval required by General Obligation Bonds. General Obligation Bonds are paid for out of the city’s General Tax Allotment Fund, so the allocation of dollars for park purposes will compete with the city’s needs for ongoing operations and other types of needed park improvements. Only cities with excess general fund capacity are really able to use General Obligation Bonds for park and facility development.

Revenue Bonds are a popular way for cities to finance capital improvements, especially recreation and park facilities, when the facility being developed will generate the necessary revenue to pay the debt service on the bonds. This method is common for development of sports arenas, convention centers, theatres and other facilities that generate revenue through admission, concessions, and rentals. Revenue Bonds require the city to provide collateral equal to one and half times the value of the bond issue. Revenue Bonds do not require voter approval but do require a four-fifths vote of the city council.

There are two main methods for establishing assessments to pay for recreation and park facility development. These are:

- Lighting and Landscape Assessment Districts
- Mello-Roos and other state legislation allowing cities and park districts to create assessment districts for capital improvements.

Each of these requires approval by the property owners who are within the district and are subject to paying the assessment.

State law AB1600 allows local agencies to impose an assessment on properties within an improvement area when the agency can show a nexus that the improvements being made are a benefit to the properties being assessed. Under this method, the agency sends a direct mail ballot to the property owners.
owners. If fewer than 50% of the owners vote ‘No’, it could implement the assessment.

Another type of funding source is fundraising. Depending on the type of project, there might be an opportunity to provide naming opportunities within the park or green space to bring in additional funding. Benches, bricks, tiles and other materials that are to be used at the site can be dedicated by individuals or include company naming rights. Banners and signs might be appropriate in certain situations, and can bring in continued support from advertising companies.

An excellent example of this type of fundraising has been successfully implemented at Millennium Park in Chicago. The Millennium Park design included twelve naming opportunities at the cost of $5M each and a monument displaying the names of 100 contributors who each paid $1M. In addition to bonds and other funding strategies, these fundraising efforts helped to finance the development of the Millennium park.

8.8 Work with regulatory agencies and property owners to encourage establishing and protecting habitat

Establishing and protecting habitat is particularly appropriate along the Santa Ana River (Anaheim Coves, Yorba Regional Park, Featherly Regional Park) and in East Anaheim Hills where native flora and fauna exist or conditions to reintroduce them are conducive. Maintaining and expanding wildlife corridors for passive nature trails should be considered similar to Deer Canyon Preserve, Anaheim’s Oak Canyon Nature Center and Weir Canyon Wilderness Park.

There are potential mitigation opportunities in the canyons and areas along the Santa Ana River. When projects impact naturally occurring wetlands, critical habitat, migration corridors and other sensitive plants and wildlife, evaluations of those impacts are made so that similar resources can be conserved and restored elsewhere. These opportunities are sometimes referred to as Mitigation Banks. There are several potential Mitigation Bank opportunities that the City could participate in with OCWD including: Deer Canyon, Pelanconi, Oak Canyon and Fremont Canyon. Opportunity Site projects that would include restoration or conservation of native habitat include: Nohl Ranch Road Open Space, Olive Hills.
Park Improvements, Five Coves North, and Crescent Basin Open Space and Trail Improvements (refer to Opportunity Sites in this Chapter).

8.9 Establish a maintenance and operations plan
During the community outreach it was brought up how important maintenance is for both residents and future economic development. The City should strive to establish maintenance and operations plans to create standards to insure Anaheim’s parks, trails, bike routes, sidewalks, plazas and open spaces meet community expectations and levels of comfort. Here are some examples of items the maintenance programs could address: pavement conditions, bike lane clearance, landscaping, graffiti, litter and tree health.

Some guidelines have already been created by the City, including the recently proposed City of Anaheim Tree Policies and Guidelines Manual. This manual includes a section on maintenance guidelines including tree planting methods, tree care, watering schedules and pest control.

A coordinated maintenance and operations plan will also help to ensure compatible use of jointly managed project sites such as transmission line corridors, storm water channel easements, water district properties, roadways, and railroad right-of-ways. It is important that safety consideration and measures are taken to protect facilities and operations as well as public users in these areas. Ongoing maintenance is an economic benefit for the city, as deferred maintenance often leads to greater costs in the end.

8.10 Establish optional bike licenses opportunities for revenue and theft protection
To contribute toward development and maintenance costs associated with bicycle trail enhancements, a bike licensing program could be enacted in Anaheim. These types of programs also discourage bike theft as they make it easier for police to recover stolen bikes. According to the National Bicycle Registry, bicycle theft is on the rise, and it is estimated that over $1.5 million bicycles are stolen every year (NBR 2012). License fees generally range from $1 to $5.

8.11 Identify CEQA Requirements
The Plan identifies 18 opportunity areas, 8 of which occur along the Santa Ana River. Since these improvements meet the definition of a project under the California Environmental Quality Act (CEQA Guidelines section 15378), preparation of an environmental document of some type will be required.

Collectively, these opportunity areas should be viewed as a recreation master plan, and there is sufficient detail for each opportunity area to analyze their potential environmental impacts at a general, programmatic level (CEQA Guidelines section 15168). The schedule for funding suggests that one or more improvements could be started in the next several years. Even though overall environmental impacts associated with any single improvement would be beneficial over the long term, there still could be adverse impacts to air quality and greenhouse gas emissions, biological resources, water quality, and public safety, especially during construction. Moreover, since the 18 improvements have been clearly identified in the Plan, it is not permissible under CEQA to analyze each project individually since this is considered “piecemealing.” All 18 improvements must be analyzed together to comply with CEQA requirements.
The first step in environmental analysis would be to prepare an Initial Study (IS) checklist to determine whether a programmatic level Environmental Impact Report is required. Completing the IS checklist requires a preliminary evaluation of environmental impacts to the following:

- Aesthetics
- Agriculture and forestry resources
- Air Quality
- Biological resources
- Cultural resources
- Geology and soils
- Greenhouse gas emissions
- Hazards and hazardous materials
- Hydrology and water quality
- Land use and planning
- Mineral resources
- Population and housing
- Public services
- Recreation
- Transportation/traffic
- Utilities and service systems

Within each IS topical area, specific criteria are evaluated, with evaluations ranging from “No Impact” to “Potentially Significant Impact.” Any criterion rated as a “Potentially Significant Impact” would require preparation of an Environmental Impact Report. If feasible mitigation is identified to reduce all “Potentially Significant Impacts” to less-than-significant levels, then a Mitigated Negative Declaration can be prepared.

The following is a preliminary overview of potential impacts in several topical areas addressed in CEQA documents.

Air Quality and Greenhouse Gas Emissions: There would probably be short-term adverse impacts from emissions associated with using construction equipment. Orange County is in a non-attainment area for ozone and particulate matter. As a result, it is possible there would be operational cumulative air quality impacts with regard to ozone and particulate matter when all projects are considered together. In particular it is possible this Plan/project would result in potentially significant impacts with regard to emissions of state or federal criteria pollutants.

Biological Resources and Water Quality: There would probably be short-term impacts associated with ground disturbing activities and generation of sediment sources, particularly from improvement opportunities in close proximity to the Santa Ana River. If any of the improvements in close proximity to the Santa Ana River generate sediment that could enter the water body, then permits from California Department of Fish and Game, California Regional Water Quality Control Board, and Army Corps of Engineers would likely be required.

Hazardous Resources: There could be potentially significant impacts with regard to public safety associated with public use of SCE utility corridors during construction as well as recreation use following construction. Ground disturbing activities could expose unknown/undiscovered hazardous materials associated with any transformers, transmission lines, and substations present in SCE right-of-ways. Following construction of recreation improvements, routine utility corridor operations and maintenance could create potential safety hazards to recreationists.
At a minimum, completing the IS would result in preparing a Mitigated Negative Declaration for the 18 improvement areas, if all the identified potential impacts can be mitigated to less-than-significant levels. However, if just one impact that might be significant and unavoidable is identified in the IS, a program EIR would be required. If the City of Anaheim desires to start project work in three years, then it would be prudent to begin the CEQA process within the next 6 months to a year.

Completing a program EIR will require 12 to 18 months and costs could range from $200,000 to $300,000 with supporting technical studies. After the EIR is completed, permits may be required for certain improvements, particularly those that have the potential to release sediment into the Santa Ana River. The permitting process can take up to an additional six months and costs range from $25,000 to $50,000. To develop a timeline for environmental compliance and permitting, it is recommended the City of Anaheim complete an IS within the next several months. Completing an IS checklist is relatively straightforward, and can be done in a few weeks, with costs ranging from $5,000 to $10,000.
OPPORTUNITY SITES

This Plan proposes a series of projects for early implementation. The projects make the best use of significant Opportunity Sites to enhance connectivity and promote greening throughout Anaheim. The key map below shows the locations of the 18 Opportunity Sites, followed by more details associated with each project.

Key to Opportunity Site Map

1. WEST ANAHEIM YOUTH CENTER TRAIL EXTENSION
2. WEST CORRIDOR GREENBELT
3. SOUTH CORRIDOR GREENBELT
4. CRESCENT BASIN OPEN SPACE AND TRAIL IMPROVEMENTS
5. ENERGY FIELD EXTENSION
6. BALL ROAD BICYCLE FACILITIES
7. DISNEY WAY CORRIDOR GREENBELT
8. LEMON STREET BIKE BOULEVARD
9. SANTA ANA BIKE BOULEVARD
10. CERRITOS CORRIDOR GREENBELT
11. ANAHEIM RIVER PARK AT KATELLA
12. FIVE COVES
13. CANYON BASINS TURF CONVERSION
14. CANYON METROLINK STATION CONNECTION
15. OLIVE HILLS PARK IMPROVEMENTS
16. EAST ANAHEIM SANTA ANA RIVER AND SR91 CROSSINGS
17. NOHL RANCH ROAD OPEN SPACE
18. SANTA ANA RIVER TRAIL - EAST EXTENSION
**Opportunity Site #1: WEST ANAHEIM YOUTH CENTER TRAIL EXTENSION**
Carbon Creek Trail, from Schweitzer Park Bridge east to Lincoln Ave.

**SIZE** 2.2 acres / 0.74 miles  
**OWNERSHIP** Orange County Flood Control District  
**ZONING** Transitional with Flood Hazard Overlay  
**GENERAL PLAN DESIGNATION** Water Uses  
**POSSIBLE IMPROVEMENTS**  
- Bike path  
- Safe Route To School  

**NEXT STEPS BY CITY OF ANAHEIM**  
- Memorandum of Understanding (MOU)  
- Community Outreach  
- Environmental compliance  
- Lease Agreement  
- Secure Funding (Grants)  
- Engineering  
- Construction  
- Maintenance  

**COST OF CONSTRUCTION** $650,000  
**ANNUAL COST OF MAINTENANCE** $4,500  

**West Anaheim Youth Center Trail Extension**  
The project proposes to extend the existing West Anaheim Youth Center trail from the park eastward to Lincoln Avenue on either the north or south side of Carbon Creek, depending on access and right-of-way limitations. The project also provides an important southerly connection to the Magnolia Corridor Greenbelt, and eventually eastward to Disney Resort and the Platinum Triangle.
**EXISTING SITE**

Looking east

Looking west

Looking east from Schweitzer Park bridge

**PROJECT EXAMPLES**

Multi-use trail, Anaheim Coves

Multi-use trail, Anaheim Coves

Multi-use trail, Gateway Park, El Monte
Opportunity Site #1: WEST ANAHEIM YOUTH CENTER TRAIL EXTENSION
Carbon Creek Trail, from Schweitzer Park Bridge east to Lincoln Ave.

**Sustainability Opportunities**
Implementing a trail along Carbon Creek Channel can deploy edge bioswales as noted with the Santa Ana River Trail Extension. However, this project has a narrower width, so “tilting” the trail towards the riprap channel bank and integrating a bioswale on only the one (lower) side may work best. Another option is a partially permeable surface for the trail if the bioswale cannot be fitted in.
Opportunity Site #2: WEST CORRIDOR GREENBELT
Greenbelt between Cerritos Ave. and Carbon Creek

SIZE 26.2 acres / 1.02 miles

OWNERSHIP Southern California Edison

ZONING Transitional

GENERAL PLAN DESIGNATION Open Space

POSSIBLE IMPROVEMENTS
- Bike path
- Hiking trail
- Exercise loop
- Seating
- Dog park
- California-friendly planting
- Soccer open play

NEXT STEPS BY CITY OF ANAHEIM
- Community outreach
- Environmental compliance
- Lease agreement with SCE
- Secure funding (Grants)
- Engineering
- Construction
- Maintenance

WEST CORRIDOR GREENBELT
Located within the SCE Corridor west of Magnolia, proposed improvements would extend from Cerritos Avenue on the south to Carbon Creek to the north, excluding the existing park within the SCE corridor. The project provides a critical north-south link between Schweitzer Park on the north and Dale Junior High School and Salk Elementary School to the south.

COST OF CONSTRUCTION $1.3 million

ANNUAL COST OF MAINTENANCE $201,000
chapter eight

EXISTING SITE

Looking south

Looking north

PROJECT EXAMPLES

Soccer field

Open play in utility R.O.W.

Pedestrian trail with exercise stations

Informal seating area
Opportunity Site #2: WEST CORRIDOR GREENBELT
Greenbelt between Cerritos Ave. and Carbon Creek

Sustainability Opportunities
The SCE corridor from Cerritos north to the Carbon Creek Channel is developed as a Park, nursery and open space. The Project would enhance and replace these uses with trails. There is an opportunity to “retrofit” biofiltration swales leading to wetland planted capture zones next to catch basins. If the nursery uses remain, a security fence along a connector trail would be required. A linear bioswale could be squeezed in along the fence as part of that barrier.
Opportunity Site #3: SOUTH CORRIDOR GREENBELT

SIZE 15 acres / 0.75 miles

OWNERSHIP Southern California Edison
                      City of Anaheim, Private

ZONING Transitional

GENERAL PLAN DESIGNATION Open Space

POSSIBLE IMPROVEMENTS
- Bike path
- Hiking trail
- Exercise loop
- Seating
- Dog park
- California-friendly planting
- Soccer open play

NEXT STEPS BY CITY OF ANAHEIM
- Community outreach
- Environmental compliance
- Lease agreement with SCE
- Secure funding (Grants)
- Engineering
- Construction
- Maintenance

COST OF CONSTRUCTION $1.2 million

ANNUAL COST OF MAINTENANCE $100,000

South Corridor Greenbelt
Located within the SCE Corridor from Brookhurst on the west to east of Euclid, this project adds a multi-functional recreation component to the linkage between Magnolia and Energy Field Park.

Sustainability Opportunities
This linear corridor can feature planted bioswales, rain gardens and larger treatment wetlands for stormwater management.
EXISTING SITE

Looking west at Nutwood St.

Looking east at Nutwood St.

Looking east from Brookhurst Ave.

PROJECT EXAMPLES

Bridge and bench

Meandering trail

Exercise loop
Opportunity Site #4: CRESCENT BASIN OPEN SPACE & TRAIL IMPROVEMENTS
Crescent Ave. at Brookhurst St.

**SIZE** 12 acres / 0.36 miles

**OWNERSHIP** Orange County Flood Control District

**ZONING** Transitional with Flood Hazard Overlay

**GENERAL PLAN DESIGNATION** Open Space

**POSSIBLE IMPROVEMENTS**
- Bike path / riding / hiking trail
- Interpretive signage
- Seating
- Native planting / Butterfly garden
- Retention basin
- Exercise stations

**NEXT STEPS BY CITY OF ANAHEIM**
- Community outreach
- Environmental compliance
- Lease agreement
- Secure funding (Grants)
- Engineering
- Construction
- Maintenance

**COST OF CONSTRUCTION** $983,000

**ANNUAL COST OF MAINTENANCE** $40,000

Crescent Basin Open Space & Trail Improvements

The project proposes to provide a walking and exercise trail around the perimeter of Crescent Avenue Basin located just west of I-5, and to extend those trails on the north side of Carbon Creek to the northeast corner of the intersection of Crescent Avenue and Brookhurst Street. The basin itself can be utilized during the dry season for informal recreation.
EXISTING SITE

Looking southeast

Existing trail

Trailhead at Brookhurst

PROJECT EXAMPLES

Bike path

Interpretive signage

Riding/hiking trail
Opportunity Site #4: CRESCENT BASIN OPEN SPACE & TRAIL IMPROVEMENTS
Crescent Ave. at Brookhurst St.

Sustainability Opportunities
Crescent Basin has a primary flood detention function, but could become a “joint use” facility allowing passive or low level uses that can tolerate periodic inundation. One option may be to excavate half the basin “down” and elevate the other half to create a relative “dry zone” for a more intensive use. In any case, periodic flooding simply introduces a maintenance cost. Since the basin adjoins a wet and substantial drainageway, a low flow impound and lift station could deliver urban runoff to the basin for irrigation (e.g. low pressure, low volume systems). This “capture and use” strategy is an important aspect of new stormwater regulations and could be used to offset development BMPs around that area. In addition, the parkway along Crescent Avenue can become a bioswale for Crescent Avenue runoff while enhancing the access or pedestrian/cycling movement along that street.
Opportunity Site #5: ENERGY FIELD EXTENSION
Edison Corridor between 9th St. and Walnut St.

- **SIZE**: 5 acres / 0.5 miles
- **OWNERSHIP**: Southern California Edison
- **ZONING**: Transitional
- **GENERAL PLAN DESIGNATION**: Open Space
- **POSSIBLE IMPROVEMENTS**
  - Bike path
  - Hiking trail / Exercise loop
  - Seating
  - Art wall
  - Drought tolerant planting
  - Dog park
  - Open play area / soccer
  - Community garden
- **NEXT STEPS BY CITY OF ANAHEIM**
  - Community outreach
  - Environmental compliance
  - Lease agreement w/ SCE
  - Secure funding (Grants)
  - Engineering
  - Construction
  - Maintenance
- **COST OF CONSTRUCTION**: $1.4 million
- **ANNUAL COST OF MAINTENANCE**: $125,000

**Energy Field Extension**
This project proposes a link between the existing Energy Field on the west and the Disneyland Resort on Walnut Street on the east, within the SCE corridor. It would add significant recreation amenities while also completing the connection with Walnut Street bikeways.
EXISTING SITE

Looking west from Walnut

PROJECT EXAMPLES

Sports area in utility R.O.W. (Liberty Park, Cerritos)

Looking west from Ninth at Energy Field Park

All-weather trail & exercise stations under utility easement, Compton Greenleaf Parkway

Perimeter of Energy Field Park

Turf play
Opportunity Site #5: ENERGY FIELD EXTENSION
Edison Corridor between 9th St. and Walnut St.

Sustainability Opportunities
This is another SCE right-of-way being used for nursery stock that can become an “extension” of Energy field. There is a catch basin and natural low point at 9th Street, as well as at Walnut, which border the site. A treatment wetland and flood “peaking” basin could be implemented adjoining these catch basins to treat site and street runoff. Special SCE approvals are required for larger basins.
Opportunity Site #6: BALL ROAD BICYCLE FACILITIES
Ball Road from Walnut St. to Harbor Blvd.

SIZE: .77 mile

OWNERSHIP: City of Anaheim

POSSIBLE IMPROVEMENTS:
- Standard Class II Bike Lane
- Buffered Class II Bike Lane
- Barrier-Separated Cycle Track
- Grade-Separated Bike Path

NEXT STEPS BY CITY OF ANAHEIM:
- Outreach with Caltrans and Disney
- Coordinate with City CIP projects
- Preliminary and final design
- Grants
- Engineering
- Construction
- Maintenance

COST OF CONSTRUCTION: $1.1 -$15 million
ANNUAL COST OF MAINTENANCE: $20,000

Ball Road Bicycle Facilities
Ball Road represents a significant connection within the overall bicycling network within the City of Anaheim for several reasons. First, Ball Road is a Primary Arterial Roadway within the City and a major east-west travel route. Second, Ball Road is one of the few routes which travels through the Disneyland Resort area and provides an important connection to the Resort from adjacent housing and tourist centers.

Creating bicycle facilities along Ball Road is challenging in that there is limited space along the roadway to add bicycle lanes. There is also a significant Interstate bridge crossing. Several concepts for each location above (Locations A, B and C) have been developed to identify their potential for implementation.
Location A
Two potential options were evaluated for Location A, which is west of Flore Street. The existing cross-section has 6 11’ travel lanes and a 16’ median. Scenario #1 (Standard Class II Bike Lane) would install a 5’ bicycle lane on each side of the roadway adjacent to the curb by removing 1’ from the middle travel lane and 8’ from the median. Scenario #2 would provide a 6’ wide bicycle lane to create an additional buffer (Buffered Class II Bike Lane). Scenario #1 and #2 differ further in terms of the median width. Scenario #2 has the median narrowed to 6’ from the existing 16’ to provide additional room for the buffer between the Bike Lane and the travel lane.
Opportunity Site #6: BALL ROAD BICYCLE FACILITIES
Ball Road from Walnut St. to Harbor Blvd.

Location B
Two potential options were also identified for Location B, which is west of the Disneyland Dr. intersection. The existing cross-section has 6 travel lanes, varying in width from 11’ to 13’. There are also 2 left-turn lanes with widths of 10’ and 11’ respectively and a 12’ wide right turn lane. There is a painted area 4’ wide adjacent to one of the turn lanes. Scenario #1 (Standard Class II Bike Lane) adds a 5’ bicycle lane on one side and a 4’ bicycle lane between the through and right-turn lane on the other side of the roadway. The bicycle lane is accommodated by narrowing the travel lanes and the painted area outside of the median. Scenario #2 (Buffered Class II Bike Lane) provides additional width for the bicycle lane by eliminating the painted area outside of the turn lanes, leaving no buffer between traffic.
Location C
Three potential options were identified for Location C, which is the portion of Ball Road which crosses over I-5 on a bridge. The existing cross-section has 6 travel lanes with widths varying from 11’ to 15’. Scenario #1 (Bicycles on Sidewalk) assumes that no bicycle lanes can be added within the existing curb-to-curb width. Bicycles are assumed to be walked across the bridge given that the sidewalk is only 7’ wide based on measurements taken in the field. Signage would be added indicating that bicycles would be walked across the bridge. Scenario #2 (Class II Bike Lanes Reduced Median) reduces the median width and the outside travel lane width to provide a 5’ bicycle lane in each direction. Scenario #3 (Barrier-Separated Cycle Track) provides a 7’ bicycle lane that would be physically separated from the travel lanes through a fixed-barrier to create a cycle track. Seven foot is considered ideal because it allows for small street-cleaning vehicles to remove debris within the cycle track.
Opportunity Site #7: DISNEY WAY CORRIDOR GREENBELT
SCE corridor between Harbor Blvd. and Union Pacific Railroad Corridor

---

**SIZE** 7.5 acres / 0.5 miles

**OWNERSHIP** Southern California Edison / Caltrans

**ZONING** West of I-5: Per Disneyland Resort Specific Plan, Parking District with C-R Overlay (medium density hotel/motel). East of I-5: Industrial.

**GENERAL PLAN DESIGNATION** Comm./Rec. west of I-5
Comm./Industrial east of I-5

**POSSIBLE IMPROVEMENTS**
- Bike path
- Bike Station
- Riding/hiking trail
- Interpretive signage
- Seating
- Landscaping

**NEXT STEPS BY CITY OF ANAHEIM**
- Community outreach
- Environmental compliance
- Lease agreement with SCE/Disney
- Secure funding (Grants)
- Engineering
- Construction
- Maintenance

**COST OF CONSTRUCTION** $2.27 million

**ANNUAL COST OF MAINTENANCE** $120,000

---

**Disney Way Corridor Greenbelt**

This opportunity site could include trails between Harbor Boulevard and the Union Pacific Corridor within the SCE Corridor on the north side of Disney Way. It provides an important safe connection under the I-5 freeway from the Platinum Triangle and downtown to The Anaheim Resort for pedestrians and bicyclists.

**Sustainability Opportunities**

This linear shaped area can incorporate planted bioswales; pocket “rain gardens”; and larger treatment wetlands that act as flood detention. Vertical dry wells can facilitate rain garden infiltration for smaller areas while the larger basins should be located alongside City catch basins for proper function. Any basins will require SCE approval as a specialized use within their right-of-way.
chapter eight

EXISTING SITE

Looking east at Harbor Blvd.

Looking west at Clementine Street

Looking east at Clementine Street

PROJECT EXAMPLES

Bike path at Lemon St., Fullerton

Multi-use walk at Lemon St., Fullerton

Interpretive Signage, Founder’s Park, Anaheim
**Opportunity Site #8: LEMON STREET BIKE BOULEVARD**
Lemon Street between Ball Rd. and La Palma Ave.

**Lemon Street Bike Boulevard**
Several Community meetings were focused on this area where it was stated that there is traffic that cuts through the neighborhood to avoid the adjacent arterials. The residents stated that this traffic exceeds the speed limit and often does not stop at stop signs. A Traffic Calming Committee has been established and traffic studies were conducted in 2003. The Committee feels that these studies are outdated and do not represent current conditions. Therefore they have requested that a new traffic study be completed before any major improvements that could affect traffic are implemented. The community did clearly state their objectives and possible improvements.

**Community Goals**
- Promote a healthy neighborhood where residents are encouraged to walk and bike.
- Enhance connectivity for biking, walking and the disabled.
- Promote walking around Pearson Park.
- Reduce neighborhood impact of special event parking by encouraging offsite parking. Utilize the parking structure on Center Street Promenade for special events and develop a strong pedestrian connection to the park.
- Reduce cut through and high speed traffic.
- Enhance the pedestrian connection to Anaheim High School.

**Size**
2.1 miles

**Cost of Construction**
$515,000

**Ownership**
City of Anaheim

**Annual Cost of Maint.**
$20,000

**Possible Improvements**
- Sharrows
- Roundabouts
- Bulbouts
- Bike racks
- Special way finding and branding signage
- Landscaping
- One-way conversion of streets including portions of Lemon
- Permanent vehicular traffic barricades (existing at Broadway, shopping center, and La Palma)
- Additional traffic signals

**Next Steps by City of Anaheim**
- Traffic Study of area south of La Palma, north of Lincoln, east of Harbor, and west of Anaheim Boulevard
- Community outreach
- Secure funding (Grants)
- Engineering
- Construction
- Maintenance
EXISTING SITE

Looking north at Broadway (right turn only for vehicles)

PROJECT EXAMPLES

Large roundabout, Vista Bike Blvd., Long Beach

Sharrow,s

Section A. Looking north

Pathway at W. Oak St. and Lemon St.
Opportunity Site #9: SANTA ANA BIKE BOULEVARD
Santa Ana Street between Walnut St. and State College Blvd.

Santa Ana Bike Boulevard
The project proposes to create shared bike lanes and travel lanes (sharrows) on Santa Ana Street from Walnut Street on the west to State College on the east. The project includes unique sharrow bike symbols on the pavement, bike boxes at signalized intersections, bulbouts, roundabouts and special wayfinding and branding signage.

SIZE 2.3 miles

OWNERSHIP City of Anaheim

POSSIBLE IMPROVEMENTS
- Sharrow
- Bike racks
- Bulbouts
- Roundabouts

NEXT STEPS BY CITY OF ANAHEIM
- Community outreach
- Secure funding (Grants)
- Engineering
- Construction
- Maintenance

COST OF CONSTRUCTION $515,000

ANNUAL COST OF MAINTENANCE $20,000
EXISTING SITE

At Anaheim Blvd. looking east

At Lemon St. looking west

At Olive St. looking east

PROJECT EXAMPLES

Bicycle boulevard roundabout, Vista Blvd, Long Beach

Sharrow on bicycle boulevard, Vista Blvd, Long Beach

Bicycle boulevard signage, Vista Blvd, Long Beach
Opportunity Sites #8 & #9: LEMON ST & SANTA ANA ST BIKE BOULEVARDS

Sustainability Opportunities
These urban streets can become “green streets” by deploying a few features that keep traffic calm, enhance the pedestrian experience and filter stormwater runoff from the street and adjoining properties. The following green street features are feasible:

- Curb return bulges with pervious pavers and shade tree
- Structured soils and underground tree filters where shade trees are planted
- Parkway planters where no parking or red curb exists
- Porous concrete or asphalt in the parking zone
- Curb bumpouts with filtration planters
- Colored bike path using pervious asphalt to delineate the bikeway while infiltrating stormwater runoff
Opportunity Site #10: CERRITOS CORRIDOR GREENBELT
Along Cerritos Ave. between Anaheim Blvd. and Douglass Road to Santa Ana River Trail

SIZE 14.4 acres / 0.57 miles
OWNERSHIP City of Anaheim/SCE/Union Pacific RR/Caltrans/OCWD/OCFCD
ZONING Transitional and Industrial
GENERAL PLAN DESIGNATION Open Space
POSSIBLE IMPROVEMENTS
• Bike lanes on roads
• Bike path along river
• Riding/hiking trail
• Interpretive signage
• Seating
• Native planting
• Pedestrian bridge across river
• River walk

NEXT STEPS BY CITY OF ANAHEIM
• Community outreach
• Environmental compliance
• Lease agreement with SCE / OCFCD
• Secure funding (Grants)
• Engineering
• Construction
• Maintenance

Cerritos Corridor Greenbelt
The project includes the SCE greenbelt along Cerritos Avenue and associated trails within the corridor between State College Boulevard on west, and the Santa Ana River on the east. The project also includes recommended extension of corridor trail through to the river, and turning east onto Honda Center property to access the Santa Ana River trail.

COST OF CONSTRUCTION $620,000
ANNUAL COST OF MAINTENANCE $38,000
EXISTING SITE

Looking west along Cerritos Avenue

Looking east along Cerritos Avenue

Looking west at SR-57

PROJECT EXAMPLES

Multi-use trail, Anaheim Coves

Trail with native plantings in utility R.O.W., West San Gabriel River parkway, Lakewood

Sundial Bridge, Redding
Opportunity Site #10: CERRITOS CORRIDOR GREENBELT
Along Cerritos Ave. between Anaheim Blvd. and Douglass Road to Santa Ana River Trail

Sustainability Opportunities
The westerly portion of this site is bounded by East Cerritos Avenue, South State Street and the Railway tracks. It has a natural “fall” towards the rail tracks and is vacant. A fenced use could be planned to leave a drainage setback along the railway to become a “bioswale” discharging into the existing catch basin on South State Street. The easterly portion has an active nursery use on it. Changing to community gardens and agriculture would replace the nursery stock without substantial changes to the site. Some feasible stormwater best practices include two planted bio-infiltration basins – one at each low point on the site. Direct surface flows to these for treatment prior to discharge into adjoining catch basins and use “dry wells” if poor percolation exists due to clay soils.
Opportunity Site #11: ANAHEIM RIVER PARK AT KATELLA
Towne Center Place to Ball Road along the Santa Ana River

**SIZE** 7.3 acres / 1.0 mile

**OWNERSHIP** City of Anaheim / OCWD
Orange County Flood Control District

**ZONING** Varies

**GENERAL PLAN DESIGNATION** Open Space

**POSSIBLE IMPROVEMENTS**
- Bike lanes
- Riding/hiking trail
- Interpretive signage
- Seating

**NEXT STEPS BY CITY OF ANAHEIM**
- Community outreach
- Environmental compliance
- Work with private developers, entertainment, sports venues
- Secure funding (Grants)
- Engineering
- Construction
- Maintenance

**COST OF CONSTRUCTION** $1.1 million

**ANNUAL COST OF MAINTENANCE** $80,000

**Anaheim River Park**
Provides approximately 7.3 acres of restored and new park space between the Santa Ana River and the Angel Stadium parking lot, extending from Towne Center Place on the south to the Douglass Road under-crossing below SR-57. This project will provide enhanced connectivity north-south connecting south of Orangewood Ave to Ball Road. It will provide a setting for activities associated with Angel Stadium and a gateway to the Resort. This project also provides a significant setting on the Anaheim side of the river that becomes a major park and recreation amenity, as well as a meeting place and staging area for bicyclists and users of the Santa Ana River Trail. This open space also has the potential to provide green infrastructure to help manage stormwater runoff from the stadium parking lot.
chapter eight

EXISTING SITE

Looking north

Looking northeast

Douglass Road under SR-57

PROJECT EXAMPLES

Pittsburgh waterfront

Pearl Brewery at San Antonio River

PNC Stadium and waterfront, Pittsburgh
Opportunity Site #12: FIVE COVES
Lincoln Ave. to Frontera St. connection along the Santa Ana River

SIZE 11.4 Acres / 0.9 mi trail
OCWD-8.4 ac / 1,800 LF
OCFC-3 ac / 800 LF
SCE-1.19 ac/275 LF

OWNERSHIP Orange County Water District
Orange County Flood Control
Southern California Edison

ZONING Transitional
GENERAL PLAN DESIGNATION Open Space, Water Uses, and Medium-density Residential

POSSIBLE IMPROVEMENTS
• Bike path
• Riding/hiking trail
• Interpretive Signage
• Seating
• Native planting

NEXT STEPS BY CITY OF ANAHEIM
• Memorandum of Understanding (MOU)
• Environmental compliance
• Community outreach
• Lease agreement
• Secure funding (Grants)
• Engineering
• Construction
• Maintenance

COST OF CONSTRUCTION $1.7 million
ANNUAL COST OF MAINTENANCE $87,000

Five Coves
Provides paved and decomposed granite trails (0.9 mile trail each) that extend Anaheim Coves trails from Lincoln Street to Frontera Street. Builds on existing trail and offers additional green space for the neighborhood.
EXISTING SITE

South entrance

Looking south

Looking northwest along Carbon Creek diversion channel

PROJECT EXAMPLES

Multi-use trail, Anaheim Coves

Seating, Anaheim Coves

Interpretive signage, Anaheim Coves
Opportunity Site #12: FIVE COVES
Lincoln Ave. to Frontera St. connection along the Santa Ana River

Sustainability Opportunities
The Five Coves Project has two discrete components: a long trail connection from Lincoln Avenue to the Glassell/SR-91 intersection and an enclosed appendage parcel that borders the Carbon Canyon Channel. The trail could deploy bioswale “edges”, while the triangular shaped remnant parcel could include a large rain-garden adjoining a rest turnout or interpretive station.

Example of a rain garden

Remnant parcel

Trail site
Opportunity Site #13: CANYON BASINS TURF CONVERSION
Selected OCWD recharge basins north of SR-91

SIZE 10.8 acres / 1.8 miles

OWNERSHIP Orange County Water District
Orange County Flood Control District

ZONING Open Space per Northeast Industrial Area Specific Plan 94-1

GENERAL PLAN DESIGNATION Water Uses/Open Space/Commercial

POSSIBLE IMPROVEMENTS
• California-friendly planting
• Walking / jogging / hiking trail
• Interpretive signage
• Seating

NEXT STEPS BY CITY OF ANAHEIM
• Community outreach
• Environmental compliance
• Lease agreement with SCE
• Secure funding (Grants)
• Engineering
• Construction
• Maintenance

CANYON BASINS TURF CONVERSION
This project would convert approximately 10.8 acres of irrigated and inaccessible turf into California-friendly planting with trails and seating areas around Kraemer Basin, Anaheim Lake, and Warner Basin. Work would be done in conjunction with the Orange County Water District. Improvements would be made outside of OCWD fenced area and would not interfere with their operations. This project will result in water savings of approximately nine million gallons per year.

COST OF CONSTRUCTION $2.6 million
ANNUAL COST OF MAINTENANCE $150,000
EXISTING SITE

Anaheim Lake from Miller St.

Looking South along Miller St.

Santa Ana River Lakes

PROJECT EXAMPLES

Trail with native plantings, West San Gabriel River, Lakewood

Trail with native plantings, West San Gabriel River, Lakewood
Opportunity Site #14: CANYON METROLINK STATION CONNECTION
Santa Ana River Trail southeast of SR-91 bridge to Anaheim Canyon Metrolink Station

SIZE 0.7 miles

OWNERSHIP Orange County Water District
Caltrans

ZONING East of Tustin Ave: Open Space (per Northeast Industrial Area Specific Plan 94-1), with Flood Hazard Overlay. West of Tustin Ave: Industrial Limited (ML), per PacifiCenter Specific Plan 88-3.

GENERAL PLAN DESIGNATION Water Uses

POSSIBLE IMPROVEMENTS
• Bike lanes
• Riding/hiking trail
• Pedestrian bridge

NEXT STEPS BY CITY OF ANAHEIM
• Community outreach
• Environmental compliance
• Lease agreement with SCE
• Secure funding (Grants)
• Engineering
• Construction
• Maintenance

COST OF CONSTRUCTION $22 million

ANNUAL COST OF MAINTENANCE $14,000

Canyon Metrolink Station Connection
Provides access from Santa Ana River Trail on south side of river, across river and recharge basins (with new pedestrian bridge), along north edge of SR-91 slope, under Tustin Avenue (with new pedestrian underpass), and surface trail to Metrolink Station. Provides critical link between station and Santa Ana River Trail.

Sustainability Opportunities
The pedestrian bridge over the river will not offer any practical stormwater option. However, the connecting Tustin Avenue underpass must collect and treat any runoff. A trench drain or flush inlet at each entrance will need a small lift pump to deliver runoff to a planted treatment zone.
EXISTING SITE

Looking southeast at Tustin Avenue, south side

Looking west

Looking southeast at Tustin Avenue, north side

PROJECT EXAMPLES

Multi-use trail with overlook, Anaheim Coves

Water's edge walking trail, Yorba Regional Park

Pedestrian bridge, Town Center Park, Santee
Opportunity Site #15: OLIVE HILLS PARK IMPROVEMENTS
Olive Hills Park (Nohl Canyon)

SIZE 10.45 acres / 0.5 miles

OWNERSHIP City of Anaheim

ZONING Transitional with Scenic Corridor Overlay

GENERAL PLAN DESIGNATION Park

POSSIBLE IMPROVEMENTS

- Hiking trail
- Interpretive signage
- Seating
- Native planting
- Dog park
- Exercise loop
- Open space / Habitat
- Restroom building

NEXT STEPS BY CITY OF ANAHEIM

- Community outreach
- Environmental compliance
- Secure funding (Grants)
- Engineering
- Construction
- Maintenance

COST OF CONSTRUCTION $1 million

ANNUAL COST OF MAINTENANCE $52,000

Olive Hills Park Improvements
Provides ½ mile fitness loop trail around existing tennis courts through existing trees and topography, with stairs to Nohl Ranch Road. Provides improved access to surrounding neighborhoods and additional fitness options with trail loop.
EXISTING SITE

Canyon view

Perimeter behind tennis courts

Looking west along Nohl Ranch Road

PROJECT EXAMPLES

Hiking trail & seating, Deer Canyon Preserve, Anaheim

Dog park, Horsethief Canyon Park, San Dimas

Exercise station, Dills Park, Paramount
**Opportunity Site #15: OLIVE HILLS PARK IMPROVEMENTS**

Olive Hills Park (Nohl Canyon)

**Sustainability Opportunities**

This steep, but stepped site naturally drains to a paved gutter and discharge pipe that extends to a heavily wooded ravine. The most effective “Best Practice” feature here would be to remove the paved gutter and replace with a defined natural drainage course collecting, detaining and cleaning incoming flows.

Existing parking lot without BMPs

Existing paved drainageway

Plan view of proposed drainage system
chapter eight
Opportunity Site #16: EAST ANAHEIM SANTA ANA RIVER AND SR91 CROSSINGS
Crossings associated with Crescent Elementary School, Peralta Park, Camino Arroyo/Avenida Palmera, and Fairmont Blvd

OWNERSHIP
Orange County Water District
OC Flood Control District
Caltrans
City of Anaheim
Orange Unified School District

NEXT STEPS BY CITY OF ANAHEIM
• Community outreach
• Environmental compliance
• Agreement with property owners
• Secure funding (Grants)
• Engineering
• Construction
• Maintenance

COST OF CONSTRUCTION $49.1 million for all crossings (cost per crossing, from west to east: $12.9 million; $6.4 million; $11.1 million; $18.7 million)

ANNUAL COST OF MAINTENANCE $17,000 for all four crossings (cost per crossing, from west to east: $6,500; $2,000; $1,500; $7,000)

East Anaheim Santa Ana River and SR-91 Crossings
Provides improved non-motorized access from East Anaheim hills to Santa Ana River Trail, via two bridges and two undercrossings. Crossings would provide bike lanes and pedestrian facilities. Includes the following four crossings (from west to east):

• New underpass below SR-91 west of Crescent Elementary School ball fields. Underpass would occur near existing storm drain under-crossing just east of Deana Street homes.
• New pedestrian bridge over SR-91 on east edge of Peralta Park, connecting park to Santa Ana River Trail.
• New pedestrian underpass below SR-91 connecting neighborhoods south of SR-91 and Eucalyptus Park with Santa Ana River trail. Underpass would occur near existing storm drain under-crossing just west of Camino Arroyo.
• Connect Fairmont Blvd. across Santa Ana River and SR-91 with new pedestrian bridge.

Sustainability Opportunities
This Project envisions two elevated pedestrian bridges with no practical stormwater option, plus two underpasses, each of which must collect and treat any runoff. A trench drain or flush inlet at each entrance will need a small lift pump to deliver runoff to a nearby planted treatment zone.
**EXISTING SITE**

Looking south from Santa Ana River Trail at Peralta Park undercrossing location

Looking north at Fairmont Boulevard

Looking north at Camino Manzano

**PROJECT EXAMPLES**

Pedestrian bridge, Town Center Park, Santee

Pedestrian bridge, Redding
Opportunity Site #17: NOHL RANCH ROAD OPEN SPACE

Imperial Hwy. To Anaheim Hills Road

**SIZE** 6 acres / 0.75 miles

**OWNERSHIP** City of Anaheim
Caltrans at Imperial Hwy (90)

**ZONING** Transitional with Scenic Corridor Overlay

**GENERAL PLAN DESIGNATION** Park

**POSSIBLE IMPROVEMENTS**
- Seating
- Riding/hiking trail
- Interpretive signage
- Habitat
- Native planting
- Overlooks
- Undercrossing at Imperial Hwy.

**NEXT STEPS BY CITY OF ANAHEIM**
- Community outreach
- Environmental compliance
- Secure funding (Grants)
- Engineering
- Construction
- Maintenance

**COST OF CONSTRUCTION** $4.5 million

**ANNUAL COST OF MAINTENANCE** $52,000

Nohl Ranch Road Open Space

Provides riding and hiking trail between Pelanconi Park and Anaheim Hills Road. Project would improve connectivity between surrounding neighborhoods (including senior housing) and Canyon High School, Imperial Elementary School, and Canyon Hills Library.
**EXISTING SITE**

- Looking west along Nohl Ranch Road
- Looking west behind Imperial Elementary

**PROJECT EXAMPLES**

- Bike path, Deer Canyon Preserve, Anaheim
- Seating at overlook, Deer Canyon Preserve, Anaheim
- Interpretive signage, Dills Park, Paramount
- Pedestrian undercrossing
Opportunity Site #17: NOHL RANCH ROAD OPEN SPACE
Imperial Hwy. To Anaheim Hills Road

Sustainability Opportunities
This site has a significant slope. Integration of bioswales and possibly two treatment wetlands would help address stormwater runoff.

First, install bioswale along horse trail at slope toe connecting to Scout Trail Road catch basin (existing conditions shown at right).

Second, retrofit rain gardens or bioswales along lawn edges to capture and treat irrigation runoff. Near right image shows a typical park lawn without BMPs. Far right shows an example of a grassy bioswale that captures and treats runoff from the surrounding lawn.

Third, retrofit wetland planted treatment basins at natural sump points near South Solomon & South Leandro Streets. Images show existing natural low points near South Soloman (near right) and Leandro (far right).
Opportunity Site #18: SANTA ANA RIVER TRAIL - EAST EXTENSION
Santa Ana River Trail (SART) between Imperial Hwy. to Yorba Linda Blvd. and Weir Canyon Road

**SIZE** 2.75 mile trail

**OWNERSHIP** Orange County Flood Control District

**ZONING** Transitional with Flood Hazard Overlay

**GENERAL PLAN DESIGNATION** Water Uses

**POSSIBLE IMPROVEMENTS**
- Open existing bike path to public

**NEXT STEPS BY CITY OF ANAHEIM**
- Lease & maintenance agreement w/ Flood Control District
- Secure funding
- Directional / safety signage installation
- Maintenance

**COST OF CONSTRUCTION** $12,000

**ANNUAL COST OF MAINTENANCE** $16,000

**Santa Ana River Trail – East Extension**
Extension of Santa Ana River Trail on south side (2.75 miles) from existing pedestrian bridge over river east of Imperial to Weir Canyon Road. Paved bike trail exists; this project would remove existing locked gate and provides access. The project would expand mobility options along the Santa Ana River east of SR-90, and takes advantage of existing infrastructure.
chapter eight

EXISTING SITE

Looking east at Pedestrian Bridge

Looking west at Santa Ana River - Yorba Regional Park

Frontage

PROJECT EXAMPLES

Bike path, Yorba Regional Park

Interpretive signage/overlook, Anaheim Coves

Riding & hiking trail at river’s edge, Yorba Regional Park
plant palette
**Tree Master Plan (MP) Location Key:**
1 - Ball Road
2 - Beach Boulevard (Excluding The Anaheim Resort)
3 - Brookhurst Street
4 - East Street
5 - Euclid Street
6 - Harbor Boulevard (excluding The Anaheim Resort)
7 - Katella Avenue (excluding The Anaheim Resort, Platinum Triangle)
8 - Knott Avenue
9 - La Palma Avenue
10 - Lincoln Avenue (from East Street to East City limits)
11 - Magnolia Avenue
12 - Nohl Ranch Road
13 - Orangethorpe Avenue
14 - Santa Ana Canyon Road
15 - State College Boulevard (Excluding the Platinum Triangle)
16 - Weir Canyon Road

**CALIFORNIA FRIENDLY TREES**
The trees listed in this section are readily available and suitable for the Urban Public Realm.

- Silk Tree (Albizia julibrissin)
- Goldenrain Tree (Koelreuteria paniculata)
- Orchid Tree (Bauhinia variegata)
- Eastern Redbud (Cercis canadensis)
- Crape Myrtle (Lagerstroemia indica)
- Australian Willow (Geijera parviflora)
- Camphor Tree (Cinnamomum camphora)
- Tulip Tree (Liriodendron tulipfera)
- Cajeput Tree (Melaleuca quinquenervia)
# Anaheim OUTDOORS Plant Palette

## "California Friendly" Trees

<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Common Name</th>
<th>C.A. Native</th>
<th>Applicable Uses</th>
<th>Tree MP</th>
<th>Natural Areas Location**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albizia julibrissin</td>
<td>Silk Tree</td>
<td>x</td>
<td>Parkway, Median, Park, E. Anaheim, Hilte</td>
<td>6,7,9,10,13</td>
<td></td>
</tr>
<tr>
<td>Alnus rhombifolia</td>
<td>White Alder</td>
<td>x</td>
<td>E. Anaheim, Hill</td>
<td>2,4,5,8,12,14,16</td>
<td></td>
</tr>
<tr>
<td>Arbutus unedo</td>
<td>Strawberry Tree</td>
<td>x</td>
<td>Park, E. Anaheim, Hills</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Agonis flexuosa</td>
<td>Peppermint Tree</td>
<td>x</td>
<td>Bioswale, Storm Planter</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Bauhinia blakeana</td>
<td>Hong Kong Orchid Tree</td>
<td>x</td>
<td>Riparian Corridor</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Bauhinia variegata</td>
<td>Orchid Tree</td>
<td>x</td>
<td>Ed. Anaheim, Hill</td>
<td>2,4,5,8,12,14,16</td>
<td></td>
</tr>
<tr>
<td>Brachychiton acerifolius</td>
<td>Flame Tree</td>
<td>x</td>
<td>Pathway, Median</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Brachychiton populneus</td>
<td>Flame Tree</td>
<td>x</td>
<td>Parking Area</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Callistemon citrinus</td>
<td>Lemon Bottlebrush</td>
<td>x</td>
<td>Pathway, Median</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Callistemon viminalis</td>
<td>Weeping Bottlebrush</td>
<td>x</td>
<td>Parking Area</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Calodendrum capense</td>
<td>Cape Chestnut</td>
<td>x</td>
<td>Pathway, Median</td>
<td>1,3,7,11,12,14</td>
<td></td>
</tr>
<tr>
<td>Cassia leptophylla</td>
<td>Gold Medallion Tree</td>
<td>x</td>
<td>Parking Area</td>
<td>1,3,5,8,14</td>
<td></td>
</tr>
<tr>
<td>Casuarina cunninghamiana</td>
<td>River She-Oak</td>
<td>x</td>
<td>Parking Area</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Catalpa species</td>
<td>Catalpa</td>
<td>x</td>
<td>Parking Area</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Cercis canadensis</td>
<td>Eastern Redbud</td>
<td>x</td>
<td>Parking Area</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Chionanthus retusus</td>
<td>Chinese Fringe Tree</td>
<td>x</td>
<td>Parking Area</td>
<td>2,12</td>
<td></td>
</tr>
<tr>
<td>Chitalpa tashkentensis</td>
<td>Chitalpa</td>
<td>x</td>
<td>Parking Area</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Cinnamomum camphora</td>
<td>Camphor Tree</td>
<td>x</td>
<td>Parking Area</td>
<td>3,4,7,8,9,16</td>
<td></td>
</tr>
<tr>
<td>Eriobotrya deflexa</td>
<td>Bronze Loquat</td>
<td>x</td>
<td>Parking Area</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Fraxinus angustifolia 'Raywood’</td>
<td>NCN</td>
<td>x</td>
<td>Parking Area</td>
<td>4,7,8,13</td>
<td></td>
</tr>
<tr>
<td>Fraxinus velutina</td>
<td>Arizona Ash</td>
<td>x</td>
<td>Parking Area</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Geijera parvifolia</td>
<td>Australian Willow</td>
<td>x</td>
<td>Parking Area</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Gongko biloba</td>
<td>Maldenahr Tree</td>
<td>x</td>
<td>Parking Area</td>
<td>3,6,11,12,14,16</td>
<td></td>
</tr>
<tr>
<td>Hymenosporum flavum</td>
<td>Sweetshade Tree</td>
<td>x</td>
<td>Parking Area</td>
<td>1,11,13</td>
<td></td>
</tr>
<tr>
<td>Jacaranda mimosifolia</td>
<td>Jacaranda</td>
<td>x</td>
<td>Parking Area</td>
<td>2,5,13</td>
<td></td>
</tr>
<tr>
<td>Koelreuteria bipinnata</td>
<td>Chinese Flame Tree</td>
<td>x</td>
<td>Parking Area</td>
<td>1,4,6,7,11</td>
<td></td>
</tr>
<tr>
<td>Koelreuteria paniculata</td>
<td>Goldenrain Tree</td>
<td>x</td>
<td>Parking Area</td>
<td>1,4,6,7,11</td>
<td></td>
</tr>
<tr>
<td>Lagerstroemia indica</td>
<td>Crape Myrtle</td>
<td>x</td>
<td>Parking Area</td>
<td>2,3,6,7,8,9,11,13</td>
<td></td>
</tr>
<tr>
<td>Laurus nobilis</td>
<td>Sweet Bay</td>
<td>x</td>
<td>Parking Area</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Liquidambar formosana</td>
<td>Chinese Sweet Gum</td>
<td>x</td>
<td>Parking Area</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Liquidambar styraciflua</td>
<td>American Sweet Gum</td>
<td>x</td>
<td>Parking Area</td>
<td>5,12,16</td>
<td></td>
</tr>
<tr>
<td>Liriodendron tulipifera</td>
<td>Tulip Tree</td>
<td>x</td>
<td>Parking Area</td>
<td>6,7,13</td>
<td></td>
</tr>
<tr>
<td>Lophotheum confertus (Tristania conferta)</td>
<td>Brisbane Box</td>
<td>x</td>
<td>Parking Area</td>
<td>1,2,5,7,14</td>
<td></td>
</tr>
<tr>
<td>Lysiloma wasoni var thornberi</td>
<td>Feather Bush</td>
<td>x</td>
<td>Parking Area</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Magnolia grandiflora 'Majestic Beauty'</td>
<td>Southern Magnolia</td>
<td>x</td>
<td>Parking Area</td>
<td>1,2,9,10,11,14</td>
<td></td>
</tr>
<tr>
<td>Magnolia soulangiana</td>
<td>Saucer Magnolia</td>
<td>x</td>
<td>Parking Area</td>
<td>2,9,10,11,14</td>
<td></td>
</tr>
<tr>
<td>Maytenus boaria</td>
<td>Mayten Tree</td>
<td>x</td>
<td>Parking Area</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Melaleuca linifolia</td>
<td>Flaxleaf Paperbark</td>
<td>x</td>
<td>Parking Area</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Melaleuca quinquenervia</td>
<td>Cape Dune</td>
<td>x</td>
<td>Parking Area</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Melaleuca stypheloides</td>
<td>Prickly Paperbark</td>
<td>x</td>
<td>Parking Area</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Metrosideros excelsus</td>
<td>New Zealand Christmas Tree</td>
<td>x</td>
<td>Parking Area</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Parkinsonia species</td>
<td>Palo Verde</td>
<td>x</td>
<td>Parking Area</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>
CALIFORNIA FRIENDLY TREES

The trees listed in this section are readily available and suitable for the Urban Public Realm.

**Tree Master Plan (MP) Location Key:**
1 - Ball Road (Excluding The Anaheim Resort)
2 - Beach Boulevard
3 - Brookhurst Street
4 - East Street
5 - Euclid Street
6 - Harbor Boulevard (excluding The Anaheim Resort)
7 - Katella Avenue (excluding The Anaheim Resort, Platinum Triangle)
8 - Knott Avenue
9 - La Palma Avenue
10 - Lincoln Avenue (from East Street to East City limits)
11 - Magnolia Avenue
12 - Nohl Ranch Road
13 - Orangethorpe Avenue
14 - Santa Ana Canyon Road
15 - State College Boulevard (Excluding the Platinum Triangle)
16 - Weir Canyon Road

Coast Live Oak (*Quercus agrifolia*)

Holly Oak (*Quercus ilex*)

California Sycamore (*Platanus racemosa*)

Chinese Pistache (*Pistacia chinensis*)

Pink Trumpet Tree (*Tabebuia impetiginosa*)

Locust (*Robinia ambigua*)

Date Palm (*Phoenix dactylifera*)
<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Common Name</th>
<th>C.A. Native</th>
<th>Parkway</th>
<th>Median</th>
<th>Park</th>
<th>E. Anaheim</th>
<th>Hill</th>
<th>Riparian</th>
<th>Corridor</th>
<th>Bioswale</th>
<th>Storm Planter</th>
<th>Low</th>
<th>Branching</th>
<th>Avoid</th>
<th>Natural Areas</th>
<th>Location**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photinia fraseri</td>
<td>NCN</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pinus brutia var. eldarica</td>
<td>Afghan Pine</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pinus torreyana</td>
<td>Torrey Pine</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pinus coulteri</td>
<td>Coulter Pine</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pinus canariensis</td>
<td>Canary Island Pine</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pinus pinea</td>
<td>Italian Stone Pine</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pistacia chinesis</td>
<td>Chinese Pistache</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pittosporum rhombifolium</td>
<td>Queensland Pittosporum</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pittosporum undulatum</td>
<td>Victorian Box</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plataneas acerbifolia</td>
<td>London Plane Tree</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Podocarpus gracilior</td>
<td>Fern Pine</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prosopis chilensis</td>
<td>Mesquite</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prosopis glandulosa</td>
<td>Texas Honey Mesquite</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pyrus calleryana</td>
<td>Callery Pear</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quercus agrifolia</td>
<td>Coast Live Oak</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quercus ilex</td>
<td>Holly Oak</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quercus suber</td>
<td>Cork Oak</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quercus virginiana</td>
<td>Southern Live Oak</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rhus lanina</td>
<td>Laurel Sumac</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rhys ambigua</td>
<td>Locust</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sapinum sebiferum</td>
<td>Chinese Tallow Tree</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sophora japonica</td>
<td>Japanese Pagoda Tree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stenocarpus sinuatus</td>
<td>Firewheel Tree</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tabebuia chrysotrichia</td>
<td>Golden Trumpet Tree</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tabebuia impetigiosa</td>
<td>Pink Trumpet Tree</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ulmus parvifolia 'Drake'</td>
<td>Chinese Evergreen Elm</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zeilkia serrata</td>
<td>Sawleaf Selkova</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Palm</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Archontophoenix cunninghamiana</td>
<td>King Palm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Braheal armata</td>
<td>Mexican Blue Palm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Butia capitata</td>
<td>Findo Palm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Livistona australis</td>
<td>Cabbage Palm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Livistona chinensis</td>
<td>Chinese Fan Palm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phoenix canariensis</td>
<td>Canary Island Date Palm</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phoenix dactylifera</td>
<td>Date Palm</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Syagrus romanzoffianum</td>
<td>Queen Palm</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Washingtonia filifera</td>
<td>California Fan Palm</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Washingtonia robusta</td>
<td>Mexican Fan Palm</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CALIFORNIA FRIENDLY SHRUBS
The shrubs listed in this section are readily available and suitable for the Urban Public Realm.

- Ceanothus (Ceanothus ‘Ray Hartman’)
- Spanish Lavender (Lavandula stoechas)
- Pacific Wax Myrtle (Myrica californica)
- Manzanita (Arctostaphylos d. ‘Howard McMinn’)
- Orchid Rockrose (Cistus purpureus)
- Oregon Grape (Mahonia aquifolium)
- Pride of Madeira (Echium candicans)
- Bush Anemone (Carpenteria californica)
- Toyon (Heteromeles arbutifolia)
<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Common Name</th>
<th>CA Native</th>
<th>Parkway</th>
<th>Median</th>
<th>Park</th>
<th>E. Anaheim</th>
<th>Hill</th>
<th>Riparian Corridor</th>
<th>Bioswale</th>
<th>Storm Planter</th>
<th>Low</th>
<th>Branching</th>
<th>Avoid</th>
<th>Natural Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arctostaphylos bakeri ‘Louis Edmunds’</td>
<td>Louis Edmunds Manzanita</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arctostaphylos densiflora ‘Howard McMinn’</td>
<td>Howard McMinn Manzanita</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arctostaphylos ‘John Dourley’</td>
<td>John Dourley Manzanita</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arctostaphylos ‘Lester Roundtree’</td>
<td>Lester Roundtree Manzanita</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calycanthus occidentalis</td>
<td>Spice Bush</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carpinteria californica</td>
<td>Bush Anemone</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ceanothus ‘Concha’</td>
<td>Concha Ceanothus</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ceanothus ‘Joyce Coulter’</td>
<td>Joyce Coulter Ceanothus</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ceanothus ‘Ray Hartman’</td>
<td>Ray Hartman Ceanothus</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ceanothus ‘Wheeler Canyon’</td>
<td>Wheeler Canyon Ceanothus</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cistus purpureus</td>
<td>Orchid Rockrose</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cistus salvifolius</td>
<td>Sageleaf Rockrose</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comarostaphylos diversifolius</td>
<td>Summer Holly</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dendromecon harfordii</td>
<td>Island Bush Poppy</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dendromecon rigida</td>
<td>Bush Poppy</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Echium candicans</td>
<td>Pride of Madeira</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Encelia californica</td>
<td>Coast Sunflower</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Encelia farinosa</td>
<td>Brittlebush</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eriogonum arborescens</td>
<td>Santa Cruz Island Buckwheat</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eriogonum cinereum</td>
<td>Ashyleaf Buckwheat</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eriogonum fasciculatum</td>
<td>California Buckwheat</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fremontodendron ‘California Glory’</td>
<td>California Flannelbush</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heteromeles arbutfolia</td>
<td>Toyon - California Holly</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iva hayesiana</td>
<td>Poverty Weed</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Justicia californica</td>
<td>Chuparosa, Beloperone</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Keckiella antirrhinoideas</td>
<td>Yellow Keckiella</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Keckiella cordifolia</td>
<td>Heartleaf Penstemon</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lavandula angustifolia</td>
<td>English Lavender</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lavandula dentata</td>
<td>French Lavender</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lavandula stoechas</td>
<td>Spanish Lavender</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lavatera assurgentiflora</td>
<td>Tree Mallow</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leonotis leonurus</td>
<td>Lion’s Tail</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leptospermum laevigatum</td>
<td>Australian Tea Tree</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Lotus scoparius</td>
<td>Deer Weed</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mahonia aquifolium</td>
<td>Oregon Grape</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malosma laurina</td>
<td>Laurel Sumac</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Myrica californica</td>
<td>Pacific Wax Myrtle</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perovskia atriplicifolia</td>
<td>Russian Sage</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Philadelphus lewisii</td>
<td>Western Mock Orange</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Philadelphus microphyllus</td>
<td>Littleleaf Mock Orange</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Philomis fruticosa</td>
<td>Jerusalem Sage</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CALIFORNIA FRIENDLY SHRUBS
The shrubs listed in this section are readily available and suitable for the Urban Public Realm.

Mexican Bush Sage (Salvia leucantha)
Fuschia Flowering Gooseberry (Ribes speciosum)
Bush Germander (Teucrium fruiticans)
Catalina Cherry (Prunus l. lyonii)

Mexican Bush Sage (Salvia leucantha)
Fuschia Flowering Gooseberry (Ribes speciosum)
Bush Germander (Teucrium fruiticans)
Catalina Cherry (Prunus l. lyonii)

Mexican Bush Sage (Salvia leucantha)
Fuschia Flowering Gooseberry (Ribes speciosum)
Bush Germander (Teucrium fruiticans)
Catalina Cherry (Prunus l. lyonii)

Mexican Bush Sage (Salvia leucantha)
Fuschia Flowering Gooseberry (Ribes speciosum)
Bush Germander (Teucrium fruiticans)
Catalina Cherry (Prunus l. lyonii)

Mexican Bush Sage (Salvia leucantha)
Fuschia Flowering Gooseberry (Ribes speciosum)
Bush Germander (Teucrium fruiticans)
Catalina Cherry (Prunus l. lyonii)
<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Common Name</th>
<th>C.A. Native</th>
<th>Parkway</th>
<th>Median</th>
<th>Park</th>
<th>E. Anaheim</th>
<th>Hill</th>
<th>Riparian Corridor</th>
<th>Bioswale</th>
<th>Storm Planter</th>
<th>Low</th>
<th>Branching</th>
<th>Avoid</th>
<th>Natural Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prunus ilicifolia</td>
<td>Hollyleaf Cherry</td>
<td>x</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prunus ilicifolia lyonii</td>
<td>Catalina Cherry</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rhamnus californica</td>
<td>California Coffeeberry</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rhamnus crocea</td>
<td>Hollyleaf Redberry</td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rhus integrifolia</td>
<td>Lemonade Berry</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rhus ovata</td>
<td>Sugar Bush</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ribes aureum gracillimum</td>
<td>Golden Currant</td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ribes sanguineum glutinosum</td>
<td>Red Flowering Currant</td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ribes speciosum</td>
<td>Fuchsia Flowering Gooseberry</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rosa californica</td>
<td>California Wild Rose</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rosmarinus officinalis</td>
<td>Rosemary</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salvia ‘Allen Chickering’</td>
<td>Allen Chickering Sage</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salvia apana</td>
<td>White Sage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salvia brandegei</td>
<td>Brandegee’s Sage</td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salvia ‘Bee’s Bliss’</td>
<td>Bee’s Bliss Sage</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salvia clevelandi</td>
<td>Cleveland Sage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salvia clevelandi ‘Winifred Gilman’</td>
<td>Winifred Gilman Sage</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salvia greggi</td>
<td>Autumn Sage</td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salvia leucantha</td>
<td>Mexican Bush Sage</td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salvia leucophylla ‘Point Sal’</td>
<td>Purple Sage</td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Santolina chamaecyparissus</td>
<td>Lavender Cotton</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teucrium fruticans</td>
<td>Bush Germander</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trichostema lanatum</td>
<td>Woolly Blue Curls</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Venegasia carpesoides</td>
<td>Canyon Sunflower</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viburnum tinus</td>
<td>Laurustinus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viguiera laciniata</td>
<td>San Diego Viguiera</td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitex agnus-castus</td>
<td>Chaste Tree - Hemp tree</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CALIFORNIA FRIENDLY PERENNIALS

The perennial plants listed in this section are readily available and suitable for the Urban Public Realm.

Dusty Miller (Centaurea cineraria)
California Fuschia (Epilobium californicum)
Douglas Iris (Iris douglasiana)
Matilija Poppy (Romneya coulteri)
Blue-eyed Grass (Sisyrinchium bellum)
Wall Germander (Teucrium l. ‘Prostratum’)
Bush Monkeyflower (Mimulus aurantiacus)
Sun Rose (Helianthemum nummularium)
Red Buckwheat (Eriogonum g. rubescens)
# Anaheim OUTDOORS Plant Palette

## “California Friendly” Groundcovers

<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Common Name</th>
<th>C.A. Native</th>
<th>Parkway</th>
<th>Median</th>
<th>Park</th>
<th>E. Anaheim</th>
<th>Hill</th>
<th>Riparian Corridor</th>
<th>Bioswale</th>
<th>Storm Planter</th>
<th>Avoid</th>
<th>Natural Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achillea millefolium</td>
<td>Fernleaf Yarrow</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arctostaphylos edmundsii ‘Carmel Creeper’</td>
<td>Little Sur Manzanita</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arctostaphylos ‘Emerald Carpet’</td>
<td>Emerald Carpet Manzanita</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arctostaphylos ‘Pacific Mist’</td>
<td>Pacific Mist Manzanita</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arctostaphylos uva-ursi ‘Point Reyes’</td>
<td>Point Reyes Manzanita</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baccharis pilularis ‘Pigeon Point’</td>
<td>Dwarf Coyote Bush</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baccharis pilularis ‘Twin Peaks’</td>
<td>Dwarf Coyote Bush</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ceanothus t. griseus ‘Santa Ana’</td>
<td>Santa Ana Ceanothus</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ceanothus g. horizontalis ‘Yankee Point’</td>
<td>Carmel Creeper</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delosperma cooperi</td>
<td>Pink Hardy Iceplant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Delosperma litorale</td>
<td>White Trailing Iceplant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Eriogonum fasciculatum ‘Dana Point’</td>
<td>Dana Point Buckwheat</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Fragaria chiloensis</td>
<td>Wild Strawberry</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malephora crocea</td>
<td>Ice Plant</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malephora lutea</td>
<td>Rocky Point Ice Plant</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Myoporum parvifolium</td>
<td>NCN</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ribes viburnifolium</td>
<td>Evergreen Currant</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salvia ‘Bee’s Bliss’</td>
<td>Bee’s Bliss Sage</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salvia leucophylla ‘Point Sal’</td>
<td>Point Sal Spreader Sage</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salvia sonomensis</td>
<td>Creeping Sage</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senecio serpens</td>
<td>Blue Chalksticks</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Applicable Uses

- **CA. Native**
- **Parkway**
- **Median**
- **Park**
- **E. Anaheim**
- **Hill**
- **Riparian Corridor**
- **Bioswale**
- **Storm Planter**
- **Avoid**
- **Natural Areas**
CALIFORNIA FRIENDLY GROUNDCOVERS

The plants listed in this section are readily available and suitable for the Urban Public Realm.

- **Carmel Creeper (Ceanothus g. h. 'Yankee Point')**
- **Myoporum (Myoporum parvifolium)**
- **Wild Strawberry (Fragaria chiloensis)**
- **Manzanita (Arctostaphylos e. 'Emerald Carpet')**
- **Blue Chalksticks (Senecio serpens)**
- **Evergreen Currant (Ribes viburnifolium)**
- **Dwarf Coyote Bush (Baccharis p. 'Twin Peaks')**
- **Pink Hardy Iceplant (Delospermum cooperi)**
- **Dana Point Buckwheat (Eriogonum f. 'Dana Point')**
## Anaheim OUTDOORS Plant Palette

### “California Friendly” Groundcovers

<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Common Name</th>
<th>C.A. Native</th>
<th>Parkways</th>
<th>Medians</th>
<th>Parks</th>
<th>E. Anaheim</th>
<th>Hils</th>
<th>Riparian Corridor</th>
<th>Bioswale</th>
<th>Storm Planter</th>
<th>Avoid Natural Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achillea millefolium</td>
<td>Fernleaf Yarrow</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arctostaphylos edmundsii</td>
<td>‘Carmel Creeper’</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arctostaphylos ‘Emerald Carpet’</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arctostaphylos ‘Pacific Mist’</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arctostaphylos uvularis ‘Point Reyes’</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baccharis pilularis ‘Pigeon Point’</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baccharis pilularis ‘Twin Peaks’</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ceanothus t. griseus ‘Santa Ana’</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ceanothus g. horizontalis ‘Yankee Point’</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delosperma cooperi</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delosperma litorale</td>
<td>White Trailing Iceplant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eriogonum fasciculatum ‘Dana Point’</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fragaria chiloensis</td>
<td>Wild Strawberry</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malephora crocea</td>
<td>Ice Plant</td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malephora lutea</td>
<td>Rocky Point Ice Plant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Myoporum parvifolium</td>
<td>NCN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ribes viburnifolium</td>
<td>Evergreen Currant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salvia ‘Bee’s Bliss’</td>
<td>Bee’s Bliss Sage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salvia leucophylla ‘Point Sal’</td>
<td>Point Sal Spreader Sage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salvia sonomensis</td>
<td>Creeping Sage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senecio serpentis</td>
<td>Blue Chalksticks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CALIFORNIA FRIENDLY GRASSES, RUSHES AND SEDGES

The plants listed in this section are readily available and suitable for the Urban Public Realm.

- **California Gray Rush** (*Juncus p. 'Elk Blue'*)
- **Purple Needle Grass** (*Nassella pulchra*)
- **Deer Grass** (*Mulhenbergia rigens*)
- **California Fescue** (*Festuca californica*)
- **San Diego Sedge** (*Carex spissa*)
- **Clustered Field Sedge** (*Carex praegracilis*)
- **Red Fescue** (*Festuca rubra*)
- **Creeping Wildrye** (*Leymus tricoides*)
- **Blue Oat Grass** (*Helictotrichon sempervirens*)
## Anaheim OUTDOORS Plant Palette

### "California Friendly" Grasses, Rushes and Sedges

<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Common Name</th>
<th>C.A. Native</th>
<th>Parkway</th>
<th>Median</th>
<th>Park</th>
<th>E. Anaheim</th>
<th>Riparian Corridor</th>
<th>Bioswale</th>
<th>Storm Planter</th>
<th>Avoid</th>
<th>Natural Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aristida purpurea</td>
<td>Purple Three Awn</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carex divulsa</td>
<td>Berkeley Sedge</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carex pansa</td>
<td>California Meadow Sedge</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carex praegracilis</td>
<td>Clustered Field Sedge</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carex spissa</td>
<td>San Diego Sedge</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Festuca californica</td>
<td>California Fescue</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Festuca glauca</td>
<td>Blue Fescue</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Festuca mairei</td>
<td>Maire’s Fescus</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Festuca rubra</td>
<td>Red Fescue</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helictotrichon sempervirens</td>
<td>Blue Oat Grass</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Juncus effusus</td>
<td>Common Rush - Soft Rush</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Juncus patens</td>
<td>California Gray Rush</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Juncus patens 'Elk Blue'</td>
<td>California Gray Rush</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Juncus textilis</td>
<td>Indian Rush</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leymus condensatus</td>
<td>Giant Wildrye</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leymus tricoides</td>
<td>Creeping Wildrye</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muhlenbergia rigens</td>
<td>Deer Grass</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nassella cernua</td>
<td>Nodding Needle Grass</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nassella pulchra</td>
<td>Purple Needle Grass</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Applicable Uses

- **Parkway**
- **Median**
- **Park**
- **E. Anaheim**
- **Riparian Corridor**
- **Bioswale**
- **Storm Planter**
- **Avoid**
- **Natural Areas**
CALIFORNIA FRIENDLY SUCCULENTS, AGAVES AND ALOES

The plants listed in this section are readily available and suitable for the Urban Public Realm.

Century Plant (Agave americana)

Foxtail Agave (Agave attenuata)

Tree Aloe (Aloe barberae)

Medicinal Aloe (Aloe vera)

Red Yucca (Hesperaloe parviflora)

Mexican Grass Tree (Dasylirion quadrangulatum)

Hens & Chickens (Echeveria spp.)

Stonecrop (Sedum spp.)

Aeonium (Aeonium spp.)
## Anaheim OUTDOORS Plant Palette

### “California Friendly” Succulents, Agaves and Aloes

<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Common Name</th>
<th>C.A. Native</th>
<th>Parkway</th>
<th>Median</th>
<th>Park</th>
<th>E. Anaheim</th>
<th>Hill</th>
<th>Riparian Corridor</th>
<th>Bioswale</th>
<th>Storm Planter</th>
<th>Avoid</th>
<th>Natural Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aeonium species</td>
<td>NCN</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agave (all species)</td>
<td>Century Plant</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agave americana</td>
<td>Century Plant</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agave attenuata</td>
<td>Foxtail Agave</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agave salmiana var. ferox</td>
<td>NCN</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agave vilmoriana</td>
<td>Octopus Agave</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aloe barberae</td>
<td>Tree Aloe</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aloe nobilis</td>
<td>NCN</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aloe vera</td>
<td>Medicinal Aloe</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dasylirion quadrangulatum</td>
<td>Mexican Grass Tree</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Echeveria species</td>
<td>Hens &amp; Chickens</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fucranea macdougallii</td>
<td>NCN</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hesperaloe parviflora</td>
<td>Red Yucca</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sedum species</td>
<td>Stonecrop</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
appendix C

Bicycle Best Management Practices

Anaheim OUTDOORS
Connectivity Plan “IT’S YOUR BACKYARD”
“Sharrows”, or shared lane markings, are pavement markings that indicate a shared lane for bicycles and vehicles, and recommend appropriate positioning for bicyclists away from the “door zone” of parked cars. Sharrows reinforce the potential presence of bicycles within the travel lane, and indicate to all users that bicyclists are allowed to ride in the center of the lane where there is not adequate space to allow for safe side-by-side travel of both vehicles and bicycles. Sharrows are typically used to enhance Class III bicycle routes.

Appropriate Use

Sharrows are especially useful on traffic calmed streets where the bicycle-vehicle speed differential is low, on streets with insufficient space to accommodate a separate bike lane, where a gap may be filled in an existing network, and to designate safe positioning through an intersection. Sharrows may be used to direct through-traveling bicyclists to the outside of turning lanes, and to appropriately position bicyclists in the middle of a travel lane adjacent to front-in angled parking, where a traditional bike lane does not allow for safe visibility.

Key Considerations

Sharrows are approved by Federal and California State guidance and are widely used. As they are still a relatively new bicycle treatment type, applications will likely change over time. Sharrows should not be used as a substitute for other separated bicycle facilities when warranted by on-road conditions and lane width. Sharrow pavement markings provide a reduced level of comfort compared to separated bicycle facilities, and are usually not appropriate on roads with speeds above 35 mph. Ideal placement is in the center of a travel lane, to promote single-file travel and reduce wear of the marking under vehicles’ tires. MUTCD guidance requires sharrow placement at a minimum distance of 11 feet from the curb in lanes adjacent to parallel parking, and four feet from the curb in lanes on streets with no on-street parking. Sharrows should be placed immediately after an intersection and at frequent and visible intervals not greater than 250 feet.

Federal and State Approval

A shared lane marking is allowed as per Federal MUTCD guidelines and California MUTCD guidelines. Previous FHWA MUTCD guidance required sharrows to be placed adjacent to parked cars on streets with parallel parking, but that is no longer the case. Now, on streets with parked cars, the centers of sharrows should be placed at least 11 feet from the curb; on streets with no parking and an outside lane less than 14-feet wide, the center of sharrows should be placed at least 4 feet from the curb or edge of pavement (from Section 9C.07 of the 2009 MUTCD).

Locations

This treatment is used widely in a number of different cities, including Sacramento, San Francisco and Long Beach, CA; Portland, OR; Asheville, NC and Salt Lake City, UT.
BUFFERED BIKE Lanes

Buffered bike lanes are conventional bicycle lanes that have a buffer space separating the bicycle lane from the adjacent vehicle travel lane and/or parking lane. The buffered area provides a greater distance between bicyclists and parked cars and moving traffic. It also allows for bicyclists to pass one another within the bicycle lane without entering the vehicle lane, and provides additional space within the bicycle lane to travel outside of the “door zone” of parked cars. In general, this treatment increases the perceived safety and comfort of an on-street bicycle lane.

Appropriate Use

Buffered bike lanes can be installed anywhere a standard bike lane is considered. They are especially appropriate on roads with high speeds and traffic volumes, and where road and lane widths are wide enough to accommodate the buffer width, which is at least 2’-3’.

Key Considerations

As with all bike lanes, special consideration must be given to continuing the facility through intersections, and where turning lanes or transit loading zones conflict with bike lanes. Buffers should be at least two feet wide, and where a buffer is used, the bike lane width may be narrower as the buffer provides additional distance from moving vehicle traffic. However, the wider the buffered bike lane, the more likely vehicles will use the facility for loading purposes.

According to the MUTCD, the buffer shall be marked with two solid white lines with diagonal hatching if three feet in width or wider. Bicycle lane word and/or symbol and arrow markings (MUTCD Figure 9C-3) shall be used to define the bike lane and designate that portion of the street for preferential use by bicyclists (NACTO Urban Bikeway Design Guide, 2011).

Federal and State Approval

A buffered bike lane is allowed as per Federal MUTCD guidelines for buffered preferential lanes (section 3D-01), and California MUTCD guidelines.

Locations

This treatment is used widely to provide additional protection on priority bicycle networks. Examples can be found in Philadelphia, PA, Minneapolis, MN; Seattle, WA; San Francisco, CA.
GREEN BIKE LANES and GREEN BACKED SHARROWS

Green bike lanes and green-backed Sharrows increase the visibility of bicycle facilities such as lanes and Sharrows, and may be applied in specific locations such as intersections or conflict areas. The colored treatment reinforces priority, increases bicyclists’ level of comfort and perceived safety, encourages motorist yielding behavior, discourages parking or other vehicle use of bike lanes, and can help reduce turning conflicts. On some collector or arterial streets a bike lane may be the preferred facility, but may not be feasible due to constrained roadway width or high vehicle volumes. Such streets are often designated as bike routes instead, but do not necessarily provide a sufficient level of comfort for everyone because bicyclists must ride between traffic with high speeds and volumes and on-street parking. To address this issue, the City of Long Beach, California, received permission from the Federal Highway Administration to experiment with “Super Sharrow Lanes” along a key commercial district. The lanes have a typical Sharrow treatment with a six-foot strip of green paint down the center of the outer travel lanes to further indicate the appropriate position for bicyclists using the roadway, and to emphasize the expected location for bicyclists to general traffic.

Appropriate Use

Within bicycle lanes or cycle tracks and behind shared lane marking symbols, through intersections, in first portion of lane at edge of intersection to call attention to presence of lane, across turning conflict areas such as where vehicle turn lanes cross bicycle facilities or at driveways and yield controlled side streets and ramps.
GREEN BIKE LANES and GREEN BACKED SHARROWS

Key Considerations

This treatment may not be appropriate where bicycles must yield right of way. Surfaces should be skid resistant (to avoid creating dangerous conditions in wet weather) and retro-reflective. It should be used in combination with standard white lane markings. While some jurisdictions have installed red or blue bike lanes, the current best practices recommend the use of green colored pavement for consistency and to avoid confusion with other standardized pavement markings (other colors have defined standard uses according to the MUTCD). Green markings are best used with accompanying signage to reinforce motorist yielding requirements.

Federal and State Approval

FHWA MUTCD Interim approval has been granted, must comply with the provisions of Paragraphs 14 through 22 of Section 1A.10. Experimental approval has been granted for specific applications, such as the City of Long Beach super sharrow bike lanes on Second Street. Caltrans has requested interim approval, though green pavement markings are not explicitly approved in the CA MUTCD. For more information on seeking experimental approval, visit FHWA’s website: http://mutcd.fhwa.dot.gov/condexper.htm.

Locations

This treatment has been used in Los Angeles, Long Beach, and San Francisco, CA; New York, NY; Portland OR; Seattle, WA.
CYCLE TRACKS

Also referred to as physically separated bikeways, cycle tracks are exclusive bikeways separated from other modes of transportation. Cycle tracks are widely used in Northern Europe, and are gaining popularity in the U.S. and Canada for their potential to attract a wider range of users, including less experience bicyclists and children.

These facilities are within the roadway, but create an exclusive space for bicyclists to ride protected from vehicle traffic. Cycle tracks also reduce the risk of “dooring” from parked cars, and reduce the incidence of blocked bike lanes with parking and loading vehicles. The protected environment accommodates cyclists of all levels, including those who would not otherwise be comfortable riding with traffic on a high volume or high speed street.

One-way and two-way cycle tracks

Cycle tracks may be one- or two-way depending on the context, and can be at road grade, sidewalk grade, or in between the two. While one-way cycle tracks are generally preferred for safety reasons, there are several appropriate applications for two-way cycle tracks. Two-way protected cycle tracks are especially useful on streets with limited conflict zones such as driveways and cross traffic, or where potential conflict can be reduced by shifting the parking lane or implementing other marking and signage to clearly designate bicycle right of way. They are also appropriate on streets that connect to other bicycle facilities on one side (such as off-street bike paths), have additional right of way on one side, or where right of way restrictions would not accommodate two separate one-way protected cycle tracks on each side.

Appropriate Use

Cycle tracks are well-suited for streets with multiple traffic lanes or high speeds, high volumes, or frequent parking turnover where traditional bike lanes do not provide adequately secure facilities for non-expert users. Streets with especially high bicycle volumes may also be considered. Streets with frequent spaced or actively used driveways or intersections are typically not good candidates for cycle tracks.
Key Considerations

Design of cycle tracks may be complicated on streets with frequent driveway access and conflicting transit stops. A minimum width of five to seven feet for a one-way cycle track and three feet for the parking buffer is recommended to accommodate passing bicyclists and vehicle passenger loading. Where parking protection is not appropriate or allowed, other buffer types may be implemented, such as raised curbs, planters and landscaping. Two-way cycle tracks should have a minimum width of 12 feet, or eight feet in constrained locations.

Pavement markings should be consistent with MUTCD bike lane markings, including edge stripes and symbols. Conflict zones at intersections must be factored into the design. Specifically, right turning vehicles may conflict with through bicyclists. To reduce potential conflicts, bicyclists approaching intersections should be visible to drivers, vehicle speeds should be reduced, and turning movements may be controlled via signals. Street sweeping and snow removal procedures may need to be considered.

Federal and State Approval

Cycle tracks are not a traffic control device, so FHWA MUTCD regulations are not applicable, and use is not restricted by FHWA MUTCD. Parking protected one-way cycle tracks are not permitted by the current draft of CA HDM update (though this may change in a final draft based on comments received).

Locations

Long Beach and San Francisco, CA; New York, NY; Portland, OR; Vancouver, BC; Chicago, IL; Minneapolis, MN; Cambridge, MA and Washington DC.
BIKE BOXES

Bike boxes use advanced stop lines for motor vehicles at signalized intersections to create a defined space for cyclists to move ahead of vehicle queues at the approach. Bike boxes are particularly useful for reducing conflicts with right-turning vehicles. They improve visibility of bicyclists during the red light phase, and may also position them to turn left safely and to transition away from the bike lane at key access points. Bike boxes are combined with no-turn-on-red restrictions to prevent vehicle traffic from encroaching on the bike box.

Appropriate Use

Bike boxes improve visibility of bicyclists at intersections, and improve perceived safety for cyclists waiting at intersection approaches during the red light phase. This is especially important on streets with high volumes of right turning vehicles where most bicycle traffic continues through, and where high volumes of truck traffic or other vehicles with limited sight lines. Bike boxes also formalize the separation of modes at intersections, allow cyclists to avoid queuing behind vehicle exhaust and create a safer environment for pedestrians by helping to prevent both vehicles and bicyclists from encroaching on crosswalks.

Key Considerations

FHWA and CA MUTCD compliant signage should be used in advance of the approach to inform vehicles of stop line location and no-turn-on-red restrictions. Additional pavement markings such as, “Wait Here,” should be considered to reinforce vehicle compliance. When installed in new communities, education for both drivers and bicyclists on what bike boxes are and how to use them is important.

Federal and State Approval

FHWA MUTCD - Currently experimental; more research data is needed before a final decision is made; CA MUTCD - not included, CA MUTCD signage to indicate vehicle stop location and no turn on red rules should be present.

Locations

This treatment is used in San Francisco, Long Beach and San Diego, CA and Portland, OR
BIKE LANE MARKINGS THROUGH INTERSECTIONS

Marked bike lanes through intersections indicate the bicyclists’ path through an intersection to reduce ambiguity and conflict between bicycles and vehicles. These intersection markings reinforce priority for through bicycle movements over turning vehicles, and guide bicyclists to maintain a direct path through an intersection, rather than veering away from and then back into the bike lane. Bicycle movements through marked intersections are more predictable and consistent. A variety of markings may be used, from dashed bike lane edges, to a series of sharrows and chevrons, and may also be marked with green paint.

Appropriate Use

Dashed lane markings are especially helpful through wide and complex intersections, and across stop-and yield-controlled cross streets, driveways, and ramps. These markings reinforce the bicycle right of way through an intersection, and are appropriate where through and turning motorists may otherwise encroach on the path of through traveling bicyclists. Intersection lane markings may also be where cycle tracks or other protected or off-road bicycle facilities cross intersections, to provide a continuous path.

Key Considerations

A variety of markings may be considered, and there are many examples from throughout North America. Lane markings through an intersection should match the width and positioning of the bike lane leading to the intersection. A dotted line, as a continuation of the leading bike lane, or higher visibility elephant feet markings, may be to mark the outer edges of the lane. Additional markings within the lane, such as green pavement, sharrows and chevrons may be used for increased visibility through particularly complicated intersections or high conflict zones. Cities should consider adopting a standardized marking for consistency. Stop-controlled crossings where bicyclists are expected to stop or yield to cross traffic may not be appropriate for bike lane markings through the intersection.

Federal and State Approval

Dashed bike lanes or other intersection markings are allowed as per Federal MUTCD guidelines and CA MUTCD guidelines (Chapter 9C).

Locations

This treatment is used with varying designs in a number of locations including San Francisco, CA; New York, NY; Chicago, IL and Seattle, WA.
BICYCLES TRAFFIC SIGNALS

Bicycle signals are bicycle-specific traffic control signal heads used in combination with existing signalized intersections to provide guidance for bicycle movements through intersections. These are typically configured with the standard three red, yellow and green lenses, with a bicycle shape to clearly identify the bicycle phase. Bicycle traffic signals can be used to separate bicycle-only phases from other vehicle movement through an intersection with potential turning conflicts, and give priority to bicycles with leading intervals.

Appropriate Use

Traffic signals configured for bicyclists are helpful wherever the bicycle crossing needs differ from vehicle crossing needs. For example, where a bike path crosses a street, or where the bicycle clearance time differs from the vehicle clearance time. Bicycle traffic signals allow for a clear split in phases, which protects bicyclists at intersections where the common bicycle movement conflicts with the main vehicle movement during a green phase, such as through bicycle crossings and high volumes of turning vehicles. The bicycle signal can be used to regulate intersection movements at any intersection with high numbers of bicycle and vehicle crashes, and at complex intersections that might otherwise be dangerous for non-expert bicyclists to navigate.

Key Considerations

The bicycle signal must be clearly visible to bicyclists, which may require placement at a different location than existing vehicle signals. Where signals are actuated, appropriate detection of all bicycle types must be in place. Clearance times must be factored into the phasing of bicycle signals, to ensure that bicyclists can enter intersections safely. Supplemental signage should be used to identify the signal, and design and installation should follow general MUTCD guidance on signal visibility and shielding.

Federal and State Approval

Bike symbols on traffic signal displays are currently considered experimental according to FHWA MUTCD, and have been approved in CA MUTCD (Section 4D.104) and installed in several California locations.

Locations

This treatment is used in San Francisco and Davis, CA; Portland, OR; and New York, NY.
Bicycle detection should be installed at actuated traffic signals to identify bicycle crossing demand. This is important at the minor road approaches to intersections where vehicle volumes may be very low and bicycles would not otherwise have an opportunity to cross legally. Signal detection for bicycles reduces delay, establishes legal crossing for bicycles and can be used to activate a longer green phase when bicycles are crossing. Both automated in-pavement loops, calibrated to detect bicycles, and push buttons may be used, though in-pavement loops are preferred for efficiency and ease of use by on-road cyclists. As new signals are installed or major updates occur to existing signalized locations, bicycle loop detectors should be installed on the bikeway system at the stop bar for all actuated movements of the signal.

**Appropriate Use**

Signal detection for bicycles can be used in any intersection where actuation is required. This is especially helpful in locations with bicycle signals or bicycle-specific phasing and in travel lanes where no bike lane exists. It is suggested that loop detectors be installed in the approach bike lane 100 feet in advance of the intersection as well as at the intersection itself. The upstream loop should not be used when it would be triggered by right-turning vehicles. The time that a bicycle needs to cross an intersection is longer than the time needed for vehicles, but shorter than the time needed for pedestrians. The AASHTO Guide for the Development of Bicycle Facilities includes detailed equations for bicycle signal timing. In general, while the normal yellow interval is usually adequate for bikes, an adjustment to the minimum green should be considered.

**Key Considerations**

Where induction loop detection is used, pavement should be marked to clearly indicate the best location for detection. At intersections with bike lanes, the detection loop should be located in the bike lane; otherwise detection should be located in the center of the outside lane. MUTCD compliant signage and standard pavement stencils should be used to instruct users. Induction loop detection is most effective for bicycles with aluminum rims.

**Federal and State Approval**

Bicycle signal detection is allowed as per Federal MUTCD guidelines and approved in CA MUTCD (Chapter 9C), which includes guidance about the pavement application of loop detector logo. Caltrans recently modified its policy on bicycle detection at new and modified approaches to traffic-actuated signals. The California MUTCD was amended to require that in-pavement bike detectors or push buttons be placed on approaches to signalized intersections. If more than 50 percent of limit line vehicle detectors need to be replaced, then an entire intersection should be upgraded so that every lane has limit line detection. The signal timing guidance was also updated to reflect a bike speed of 10 mph (14.7 ft/sec) with 6 seconds of startup time based on current research.

**Locations**

Most jurisdictions with an established bikeway network use bicycle signal detection.
BIKE ROUTE WAYFINDING and SIGNAGE

Bike route wayfinding consists of a combination of comprehensive signing and pavement markings to direct bicyclists along established bike routes and to key destinations. Pavement markings provide consistent visual cues and reinforce the preferred bike route, and signs can be used at key intersections and where two or more bike routes cross. Additional information about distances to destinations, parallel attractors or connecting bike routes provides legibility and improves navigation. Signs with destinations and mileage distances may also be useful for pedestrians and drivers, and familiarize all road users with the bicycle route network.

Appropriate Use

Wayfinding signage and pavement markings are particularly useful along circuitous routes, and in networks with multiple route connections. They also help visitors identify clear and safe pathways, navigate efficient routes and identify nearby destinations.

Key Considerations

Bike route wayfinding should be visually consistent and distinct from standard street signs. Signage should include “decision signs” to provide information about intersections and destinations, “turning signs” to direct users along the path, and “confirmation signs” throughout the route to identify the presence of a formal bike route. All signage should be compliant with MUTCD standards.

Federal and State Approval

Bike route wayfinding pavement markings and signage are allowed by FHWA MUTCD if compliant signs and pavement markings are used, but are currently considered experimental if non-compliant signs or markings are used. Several new bicycle guide signs, along with information on their use are included in the 2009 CA MUTCD guidelines (Chapter 9C). These signs provide flexibility and may reduce costs for signing bicycle routes in urban areas where multiple routes intersect or overlap.

Locations

Many cities have effective wayfinding signage. The City of Oakland’s Design Guidelines for Bicycle Wayfinding Signage are in line with Federal and CA state standards and set a standard for best practices; they can be found on their public works website at http://www.oaklandpw.com/AssetFactory.aspx?did=3528.
BICYCLE PARKING

Secure and convenient bicycle parking is an essential element of a bicycle trip, and critical in the effort to increase bicycle activity. Bicycle parking can be categorized as either short- or long-term, and the different purpose and design of short- and long-term bicycle parking must be considered. Short term parking is intended for less than two hours and should be conveniently located at destinations. Long-term parking is meant to accommodate users expected to park bikes for several hours, and should therefore be secure and weather protected. Both short- and long-term bicycle parking should be compatible with standard U-locks, as this is the most recommended and secure lock type.

In order to encourage bicycling, cities should establish a comprehensive bicycle parking program and bicycle parking requirements for new buildings. Zoning code can be used to outline minimum bicycle parking requirements for different land uses, and municipal code can include comprehensive bicycle parking requirements, such as best practice specifications for the number of short- and long-term parking facilities, design standards, dimensions and placement.

Appropriate Use

Short-term bicycle parking facilities are typically bike racks, and should allow the bike frame and one wheel to be securely locked to the rack in a stable position without damage to the bicycle. Short-term parking should be free, as security is minimal, and use of proper bicycle parking facilities should be encouraged. Inverted U-racks meet these criteria and are recommended.

Long-term bicycle parking facilities should protect the entire bicycle and components from theft and exposure to weather. Lockers, check-in facilities, monitored parking, restricted access parking, and personal storage are appropriate for long-term parking. Long-term parking is considerably more secure than short-term parking, and many users may be willing to pay a nominal fee to guarantee the safe storage of their bicycles. However, long-term parking should be free in places where vehicle parking is free.

Key Considerations


Best practices for short-term parking recommend the following:

- Parking spaces should be 8 feet long and 2.5 to 3 feet wide, with at least 7 feet of clearance.
- Bicycle racks should be securely anchored to a permanent surface with fixtures that cannot be removed with commonly available tools.
- Racks should provide two points of contact for stability.
- Racks should be configured such that the frame and at least one wheel can be locked.
- Racks should have at least 30 inches of clearance from obstructions, including other racks, in all directions.
- Even common rack designs should not be used if they do not provide two points of contact, clearance between racks and a point on which both the frame and one wheel may be locked.
- On-street bike corrals can be used to provide additional short-term bike parking for events that draw additional bicycle users and when bicycling is encouraged as an alternative to driving, such as at ball parks and farmers markets.
BICYCLE PARKING

- Lock types that may be considered include the inverted U, the lightning bolt, the bike hitch, and the swerve rack (see photos for example)

Best practices for long-term parking recommend the following:

- Secure parking should be provided at locations with large employers and where commuters may leave their bikes unattended throughout the day.
- Lock and key lockers can be rented by single users on a monthly basis.
- E-lockers are available for on-demand rental by users for several hours at a time, and are locked and accessed with a stored value card; rental rates typically range from $0.03 –$0.05 per hour. Keyed lockers for single use rentals are not recommended.
- Secure bike cages with restricted access in monitored locations provide long-term storage within transit stations or vehicle parking facilities.
- Secure bike rooms within a building can function as a safe indoor bicycle garage used by employees and residents of the building.

Federal and State Approval

Bicycle parking is not a traffic control device, so FHWA and CA MUTCD guidance does not apply. Several cities have outlined bicycle parking requirements within their general municipal code, and as part of their zoning code.

Locations

Many cities, transit agencies, campuses and private buildings have adopted bike parking policies, standards and ordinances to guide the selection and installation of bike parking facilities.
Anaheim Outdoors Connectivity Plan
Rail-with-Trail Research: Guidelines and Standards
May 24, 2012

Because most of the rail lines in Anaheim are active lines, planning issues and design standards generally fall in the “rails-with-trails” category. This pertains to a rail right-of-way, still being used by trains, that also includes a recreational trail parallel to the tracks. It differs from converting part of an inactive or abandoned right-of-way to a “rail-to-trail”.

A successful rail-with-trail (RWT) project carefully considers the operational needs and other concerns of the railroad, and involves working closely with railroads and other relevant agencies and landowners during planning and design. The project must balance trail safety with railroad operations. At its best, a RWT project increases mobility and recreation choices, improves the appearance of the right-of-way, enhances property values, brings revenue to the railroad owner, and can reduce trespassing and injuries or death from illegal track crossings. Although many railroad owners are reluctant to embrace RWTs, some allow and encourage these projects, including the Orange County Transit Authority.¹

There are no rigid design standards or guidelines for trails adjacent to active railroads. This is due to the highly variable nature of right-of-way width, train speed and frequency, land characteristics and adjacent land uses, right-of-way ownership, rail expansion plans, presence of utilities in the right-of-way, and occasional narrowing of the corridor because of topography, bridges, etc. Surveys of existing RWTs confirm this variability and emphasize that trail planning and design is done on a case-by-case basis, to meet the specific needs of the railroad operator and provide a safe and functional rail-with-trail corridor.² The following trends and design recommendations are gleaned from existing RWTs (summarized in reports listed in the Reference section), including 21 projects in California.

Feasibility and Planning

A feasibility study must evaluate any proposed RWT, and should include analysis of an alternative trail alignment outside the rail right-of-way. If the project proceeds as a RWT, planning should involve the rail owner/operator from the earliest stages. Reluctant rail operators may feel more comfortable with the project if it adequately addresses issues beyond safe trail design, including liability, indemnification, design approval by the rail operator, and maintenance access. In some cases, the project may proceed only if the portion of right-of-way

² The design also must meet other applicable standards (e.g., California Department of Transportation’s Highway Design Manual, Chapter 1000, “Bikeway Planning and Design”; California Department of Transportation’s California Manual on Uniform Traffic Control Devices; Guide for the Development of Bicycle Facilities, prepared by the American Association of State Highway & Transportation Officials (AASHTO); and National Bicycle and Walking Study – Current Planning Guidelines and Design Standards Being Used by State and Local Agencies for Bicycle and Pedestrian Facilities, prepared by the Federal Highway Administration; and any standards issued by the City of Anaheim.)
containing the trail is acquired by the authority responsible for the trail, and/or if the trail authority provides liability insurance. The flowchart below outlines the process for conducting a RWT feasibility study.

Setbacks

Setback refers to the distance between the centerline of the railroad track and the nearest trail edge. There is no national designated standard for RWT projects. A nation-wide review shows wide variation in setback distances of existing RWT facilities (from less than 10 ft to 100 ft), with an average distance of 33 ft; for existing California RWTs, the average setback distance is 45 ft. There is no relationship between setback distance and train speed for existing RWTs, although it is expected that greater setback distances are desirable with higher train speeds, due to the potential for larger/heavier debris to be thrown out by faster trains.

Based on its review of existing RWT facilities, the U.S. Department of Transportation (USDOT) recommends a minimum setback of 25 ft for unconstrained sections of a rail corridor; where corridor width is constrained, this distance decreases to a range of 10 ft to 25 ft. The setback should be maximized where possible. Constrained sections should include additional separation devices, such as fencing or vertical separation.


---

Guidelines for setback distance have been issued by SCRRA (Southern California Regional Rail Authority)/Metrolink and by BNSF Railway. These are more stringent than the USDOT’s 25-ft recommendation and link setback distance with train speed as follows:

<table>
<thead>
<tr>
<th>SCRRA/Metrolink 4</th>
<th>BNSF Railway</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Train Speed</strong></td>
<td><strong>Minimum Setback</strong></td>
</tr>
<tr>
<td>&gt; 90 mph</td>
<td>45 ft</td>
</tr>
<tr>
<td>79-90 mph</td>
<td>40 ft</td>
</tr>
<tr>
<td>60-78 mph</td>
<td>35 ft</td>
</tr>
<tr>
<td>40-59 mph</td>
<td>30 ft</td>
</tr>
<tr>
<td>&lt; 40 mph</td>
<td>25 ft</td>
</tr>
<tr>
<td>If setback is &lt; 25 ft, additional barrier and/or vertical separation is required</td>
<td></td>
</tr>
</tbody>
</table>

Barriers

Most existing RWT facilities use some sort of physical barrier between the trail and tracks. Barriers are used to enhance separation between the trail and tracks, discourage trespassing onto the tracks, and direct trail users to designated crossings. Common barriers include fencing (e.g., chain link, welded wire mesh, tubular steel, split rail), solid walls, vegetation, vertical grade separation, berms, and drainage ditches. The type of barrier used should address concerns related to trail user safety, railroad operator requirements, visibility needs, aesthetics, and adjacent landowner needs. In addition to barriers between the trail and tracks, security fencing and patrols are usually required where a trail is routed along a railroad yard. Existing RWT projects require the trail authority to provide barrier installation and maintenance.

Most railroad operators typically require some sort of fencing between the trail and track, usually 6 ft high. The SCRRA/Metrolink guidelines call for fencing of either welded wire mesh or tubular steel to be located at the edge of the trail, with fence height of 6 ft except for within 150 ft of an at-grade crossing, where fence height should be 4 ft.

Crossings

At-grade trail crossings at railroad tracks and streets represent the greatest safety concern in RWT design. When planning a RWT project, the number of at-grade crossings should be minimized, with trail users routed to existing signalized crossings. Many railroad owners do not permit projects that propose new at-grade crossings, and in California, new highway-rail grade crossings require approval of the California Public Utilities Commission. The SCRRA/Metrolink guidelines refer RWT planners to its Highway-Rail Grade Crossings Recommended Design Practices and Standards Manual for design of grade crossings.

At-grade crossings are best sited at existing crossing locations where there is adequate sight distance and where visual access to approaching trains is not blocked by vegetation, structures,

---

4 SCRRA includes the Orange County Transit Authority; the SCRRA guidelines do not apply to rights-of-way fully owned by Burlington Northern & Santa Fe Railway or Union Pacific Railroad.
etc. This distance should be sufficient to allow trail users (including fast-moving bicyclists) to detect a train and any warning devices in advance, and then safely stop at the crossing if necessary. Ideally, the crossing should be perpendicular to the rails, with the approach at the same elevation as the rails. A smooth and slip-resistant crossing surface of concrete or rubber is recommended because it is safer, more accessible, and longer-lasting than asphalt or wood.

Crossings should include warning devices for trail users to safely cross at designated times. Warning devices fall into two general categories: passive and active. Passive devices consist primarily of railroad crossbucks, other signage, and pavement markings to inform trail users of an upcoming crossing. Active devices include automatic gates, warning lights, and audible signals that alert trail users to an oncoming train. Standard devices are outlined in California Department of Transportation’s *California Manual on Uniform Traffic Control Devices*, although other devices can be added to improve safety. However, every crossing situation is unique, with warnings and traffic controls to be determined by a qualified engineer in consultation with the railroad operator and trail authority.

Below-grade (underpass) and above-grade (overpass) crossings are alternatives to at-grade crossings, but are very expensive and utilized only where absolutely necessary for safety reasons or where stopped trains would frequently block at-grade crossings. Design standards of grade-separated crossings are found in *Guide for the Development of Bicycle Facilities*, prepared by the American Association of State Highway & Transportation Officials (AASHTO).

Where the trail crosses a roadway, it is recommended to follow guidelines presented in the California Department of Transportation’s *California Manual on Uniform Traffic Control Devices* and AASHTO *Guide for the Development of Bicycle Facilities*.

**Lighting**

Lighting should be provided if required by applicable local, state, or federal guidelines. If the trail is expected to be used by bicycle commuters, lighting should be provided. In addition, lighting is recommended at important nodes such as trailheads and transit access points. Any lighting should be approved by the railroad operator, and could require shielding.

**Railroad Operator Access**

A RWT project may require the trail to be readily accessed by the railroad operator and affected utilities to perform maintenance on their facilities; access to emergency vehicles also may be necessary. In these instances, the trail width and surface should be designed to accommodate heavy trucks and emergency vehicles. Any fencing or walls may need removable sections or gates at selected locations to allow maintenance access to the tracks.
References


**General online sources:**


National Trails Training Partnership—Resources and Library: Rails to Trails (http://www.americantrails.org/resources/railtrails/index.html; accessed May 23, 2012.)
1.0 INTRODUCTION

1.1 Purpose

1.1.1 The Southern California Regional Rail Authority (SCRRA) Board Members have asked its staff to develop Rail-with-Trail Design Guidelines to provide uniform and consistent standards for Rail-with-Trail design, construction and maintenance on the commuter and/or freight railroad right-of-ways. SCRRRA staff worked together with the Member Agencies staff in preparing and finalizing these guidelines. The proposed guidelines are intended to provide minimum standards and general requirements for the design, construction and maintenance of Rail-with-Trail in a manner compatible with safe operation of railroad corridors and with the rail capacity expansions envisioned for most corridors.

1.1.2 When a Rail-with-Trail is considered for joint use in an operating right-of-way, it should be considered in the context of the important priority role of a safe, maintainable rail transportation and freight corridor. Rail-with-Trail may affect SCRRRA’s ability to provide commuter rail transportation and its obligation to the freight railroads. Rail-with-Trail could be a community asset and when designed properly it can benefit SCRRRA, Member Agency and the communities where they are located. Rail-with-Trail can reduce nuisance problems, trespassing, dumping and vandalism; reduce illegal track crossings through channelization of pedestrians and bicyclists to grade-separated or other designated crossings; increase public awareness of the important service commuter and freight rail provide; increase property values; improve access to transit and transit stations; increase community aesthetics and provide alternative transportation options. These guidelines seek to balance SCRRRA’s and Member Agencies’ mandates to provide safe and efficient transportation to the public and the ability to meet interstate freight obligations.

1.1.3 SCRRRA is the designated track owner of the Metrolink railroad system under the Code of Federal Regulations (CFR), Title 49 “Transportation”, Subtitle B “Other Regulations Relating To Transportation”, Chapter II “Federal Railroad Administration, Department of Transportation”, part 213 “Track Safety Standards”, Section 5 “Responsibility of Compliance” (49 CFR 213.5). As per part 213, SCRRRA is required to provide minimum safety requirements for operation and maintenance of railroad tracks that are part of the general railroad system of transportation. The minimum requirements include roadbed, track geometry, track structure, track-related devices and inspection. These guidelines are meant to be consistent with these requirements.

1.2 Scope

These guidelines apply to the SCRRRA and its Member Agencies operated and maintained right-of-ways that are owned wholly or in part by the county transportation Member
Agencies. These guidelines do not apply to right-of-ways fully owned by the Burlington Northern and Santa Fe Railway or Union Pacific Railroad, where SCRRA has entered into joint use agreements to operate Metrolink commuter rail service.

1.3 Definitions

1.3.1 Public Agency – the federal government and any agencies, departments or subdivisions thereof; the State of California; and any county, city, city and county district, public authority, joint powers agency, municipal corporation, or any other political subdivision or public corporation therein, requesting and sponsoring the Rail-with-Trail project.

1.3.2 Member Agency - any specific county transportation agency(s), whose Property is directly affected by this project. The SCRRA Member Agencies are the Los Angeles County Metropolitan Transportation Authority (METRO), the Orange County Transportation Authority (OCTA), the Riverside County Transportation Commission (RCTC), the San Bernardino Associated Governments (SANBAG), and the Ventura County Transportation Commission (VCTC).

1.3.3 Rail-with-Trail - a marked or established shared use path used by bicyclists, pedestrians, wheelchair users, joggers and other non-motorized users that is located on or directly adjacent to an active railroad corridor.

1.3.4 Setback - the distance between the centerline of the nearest railroad track (existing or planned) and the closest edge of the Rail-with-Trail.

1.4 Referenced Standards

Rail-with-Trail shall also comply with the current editions of the following referenced standards:

1.4.1 Right-of-Way Preservation Guidelines adopted by the specific Member Agencies.
1.4.2 The California Department of Transportation's (Caltrans) "Highway Design Manual", Chapter 1000, “Bikeway Planning and Design”.
1.4.3 The California Department of Transportation's (Caltrans) “California Manual on Uniform Traffic Control Devices (CA MUTCD)”.

1.5 Other References

The following reports, which can provide valuable information on the planning, design, maintenance and operation of the Rails-with-Trails shall be referred to in the development, construction and operation of Rail-with-Trail:

1.5.1 “Rails-with-Trails: Lessons Learned”, prepared by U.S. Department of Transportation.
1.5.2 “Guide for Development of Bicycle Facilities”, prepared by the American Association of State Highway & Transportation Officials (AASHTO).
1.5.3 “National Bicycle and Walking Study – Current Planning Guidelines and Design Standards Being Used by State and Local Agencies for Bicycle and Pedestrian
2.0 REAL ESTATE REQUIREMENTS

2.1 Existing Facilities

2.1.1 The Public Agency should design the project in a manner that avoids any displacement of existing billboards, bus stops, leases and licenses on the right-of-ways. If the Member Agency agrees that the displacement is unavoidable, the Public Agency shall coordinate proper disposition, including associated costs to be incurred by the Public Agency, with the affected Member Agency and in accordance to the applicable conditions contained in the existing real estate agreements.

2.2 Proposed Agreement

2.2.1 Public Agency shall obtain a license or easement agreement for the Rail-with-Trail from the Member Agency whose right-of-way is directly affected by the project. The license or easement agreement shall include requirements, terms and conditions related to indemnification, license fees and compensations, assumption of risk and waiver, insurance, tests and inspections, maintenance and repair, breach, abandonment, reimbursement, construction, relocation, payments, hazardous/toxic materials, compliance with laws etc. The Public Agency shall contact the affected Member Agency to request all information related to the real estate agreement. The Member Agency will be the sole authority on the fees and compensations due from the Public Agency for the rights granted.

2.2.2 License or easement agreement shall also include requirements that provide for the removal and modification of the Rail-with-Trail to meet SCRRA's and Member Agency's mission to provide passenger rail transportation and their obligations to the freight railroads to provide rail freight service. At the request of SCRRA or Member Agency, the Public Agency shall remove, relocate, or modify, at its own expense, the Rail-with-Trail to accommodate additional track or tracks or other railroad related facilities in the right-of-way.

2.3 Permits

Public Agency shall obtain and comply with any and all approvals, permits, licenses and other authorizations required by applicable laws, regulations, rules and ordinances for Rail-with-Trail project within the right-of-way.

3.0 PLANNING

3.1 Feasibility Study

Public Agency is encouraged to undertake a comprehensive feasibility analysis of the project. The feasibility study should describe the setting, the relationship to local planning documents, need for the project, land ownership, railroad activity present or future, and other information necessary to determine the feasibility. As a part of the
feasibility study, environmental concerns should be analyzed pursuant to local, State, and Federal environmental laws. The Public Agency should, early in the process; involve affected stakeholders such as freight railroads, utility companies, law enforcement officials, adjacent landowners, Rail-with-Trail user groups, transportation, public transit, park and recreation departments. The feasibility study should include viable alternatives to any Rail-with-Trail that are proposed within an active right-of-way. The Public Agency is encouraged to identify and evaluate multiple alternative alignments, including at least one that is not on the railroad right-of-way.

3.2 Safety Plan

Public Agency is encouraged to develop a public safety plan that includes engineering, maintenance standards, trespassing and crime prevention strategy; appropriate damage-resistant construction materials; landscaping; provide secure access areas, barrier systems, video monitoring; coordinated and responsive patrol service, designating and enforcing rules and regulations; employing crime prevention strategies, such as education, informal signage, incident management; provide fire and police department with map of the system detailing access points and implementation schedule.

4.0 DESIGN

4.1 Submittal

After review and approval of the feasibility report and safety plan by SCRRRA and affected Member Agency, the Public Agency should submit two sets of design drawings each to SCRRRA and Member Agency for review and approval. Any and all changes or modification during the design and construction that affect the rail right-of-way should also be submitted to SCRRRA and Member Agency for review and approval.

4.2 Design Standards

4.2.1 Rail-with-Trail widths, clearances, sight distances, signs, markings, drainage grates, manhole covers etc. shall be selected as per Caltrans “Highway Design Manual”, Chapter 1000, “Bikeway Planning and Design”. MUTCD guidelines shall also be referred to in the selection of signs, markings and signals.

4.2.2 If the Rail-with-Trail project creates an adverse impact at a grade crossing that did not previously exist, the Rail-with-Trail project shall include mitigation as part of the design. The Rail-with-Trail design should acknowledge any future rail and highway improvements; and safety requirements, including but not limited to, turning radii for design vehicles, preemption timing, street profiles and rail and traffic signals at grade crossings. The Public Agency shall work with SCRRRA, affected Member Agency and regulatory agency so as not to hamper or preclude such improvements and requirements.

4.3 Clearances

4.3.1 Rail-with-Trail shall be designed along the outer edges of the right-of-way adjacent
to the property line, to the extent feasible.

4.3.2 Rail-with-Trail shall be designed so as to maximize the Setback between the centerline of the nearest track (existing or future) and the closest edge of the Rail-with-Trail to the extent feasible. The Setback clearance shall take into consideration the type, speed and frequency of trains; separation technique, topography; sight distances; and SCRRA’s maintenance requirements.

4.3.3 The recommended minimum Setbacks are 45 feet of any main line track where the train speeds exceed 90 mph; 40 feet where main line speed is between 90 mph and 79 mph; 35 feet where main line speed is between 78 mph and 60 mph; 30 feet where main line speed is between 59 mph and 40 mph; and 25 feet where mainline speed is below 40 mph.

4.3.4 It may not be possible to provide recommended minimum Setbacks at certain points. While a railroad right-of-way may be sufficiently wide, the tracks may be within a narrow cut or fill section or adjacent to bluffs making placement of Rail-with-Trail very difficult. Safety shall not be compromised at such points. Additional barriers, vertical separation or other methods shall be employed.

4.4 Highway-Rail Grade Crossings

4.4.1 California Public Utilities Commission (CPUC) approval is necessary for the construction of a new highway-rail grade crossing. Public Utilities (PU) Code Sections 1201-1220 require that no public road, highway, or street shall be constructed across the track of any railroad corporation at-grade without having first secured the permission of the Commission. Rail-with-Trail shall be designed such that Rail-with-Trail users are routed to an existing signalized grade crossing.

4.4.2 SCRRA has established Highway-Rail Grade Crossings Recommended Design Practices and Standards Manual. This Manual has requirements for safe construction and maintenance of grade crossings and includes SCRRA policy, regulatory responsibility, approval process, design criteria and other important requirements. Rail-with-Trail design and construction should meet the requirements shown on this Manual.

4.5 Surface

If the Rail-with-Trail is the only access for SCRRA and emergency response vehicles, the Rail-with-Trail surface and bridges shall be designed and constructed to accommodate heavy railroad trucks and equipment. When access for SCRRA and emergency response vehicles is available from an existing street, the Rail-with-Trail shall be designed and constructed with curb ramps and pavement surface to accommodate heavy railroad trucks and equipment at pre-selected access points only. Choice of Rail-with-Trail pavement material and depth of sub-base, base and pavement shall be determined by the Public Agency based on sound engineering design and judgment.
4.6 Utilities

4.6.1 Public Agency shall locate the existing SCRRA signal and track facilities on their plans during the design phase at Public Agency costs and expenses. The project should be designed to avoid any relocation of the existing SCRRA facilities.

4.6.2 After the acceptance of plans by SCRRA and Member Agency, the Public Agency shall submit and obtain written approval of design drawings from telecommunications, fiber optic, gas, oil or other companies that have prior use of the right-of-way under easement or license agreements. The design and construction of the Rail-with-Trail may affect the existing utilities and may require the Rail-with-Trail to be changed to accommodate utilities.

4.6.3 The existing utilities shall be located prior to commencing any excavations. Approval of the project by SCRRA does not constitute a representation as to the accuracy or completeness of location or the existence or non-existence of any utilities or structures within the limits of this project. The appropriate regional notification center [Underground Service Alert (USA) at (800) 227-2600], railway companies, and utility companies shall be notified prior to performing any excavation close to any underground pipeline, conduit, wire, or other structure. Refer to SCRRA’s website www.metrolinktrains.com to ensure proper contracts and phone numbers. SCRRA is not a member of USA and the Public Agency shall request locations of SCRRA utilities from SCRRA. It is therefore necessary to call SCRRA’s signal department phone number (refer to SCRRA’s website) to mark, at the Public Agency(s) or Contractor’s expense, signal and communication cables and conduits; in case of signal emergencies or Highway-Rail Grade Crossing problems, the Contractor shall call SCRRA’s 24-hour signal emergency number. If utilities cannot be located, potholing shall be done to locate the utilities. SCRRA and appropriate utility owners shall be notified immediately when utility lines not known or indicated on the drawings are encountered. No service shall be disrupted until the utility owner and SCRRA have determined the required action on such lines.

4.7 Landscaping

Landscaping, shall meet the requirements included in “Landscaping Design Guidelines” published by SCRRA and guidelines published by Member Agencies.

4.8 Fencing

4.8.1 If there is no existing fence, the Public Agency, at its sole cost and expense, shall install tubular steel fencing or welded wire mesh fencing as per SCRRA Engineering Standard ES5104 or ES5105 respectively. The fence shall be located at the edge of the Rail-with-Trail. Exceptions may be granted by SCRRA, if the Rail-with-Trail design includes mitigation measures that include best practices to ensure safe trail use and rail operations, as per Section 8.0 of these guidelines. Public Agency shall install gates having SCRRA locks to access the right-of-way for maintenance purposes at locations provided by SCRRA. Public Agency should install “No Trespassing” warning signs as per SCRRA Engineering Standard.
4.8.2 A three rail split-rail fence in combination with landscaping which can serve both as a visual and physical barrier between the track and the Rail-with-Trail may be used in a rural or environmentally sensitive areas if approved by SCRRA and Member Agency. Since newly planted landscaping may take a few years before they become effective barriers, suitable temporary measures may be required until the landscaping have sufficiently matured.

4.8.3 The height of the fence within 150 feet of at-grade crossings shall be four (4) feet. The height of the fence in the balance of the right-of-way shall be at least six (6) feet.

4.9 Lighting

Public Agency should provide lighting for the Rail-with-Trail if required by the local, state or federal guidelines, rules and regulations.

4.10 Drainage

4.10.1 Public Agency, at its sole cost and expense, shall provide and maintain suitable facilities for draining the Rail-with-Trail area and shall not permit storm and irrigation water to flow or collect upon the right-of-way. The Public Agency should not have the sole responsibility to correct any existing drainage deficiencies on the right-of-way, however, the Public Agency shall not make the conditions any worse than existing prior to the Rail-with Trail construction on the right-of-way.

4.10.2 The Rail-with-Trail and the area located between the Rail-with-Trail and the nearest railroad track should be graded to flow over the curb and onto the street, when the railroad track is at the higher elevation than the surrounding ground and the street. When the railroad track is at a lower elevation than the surrounding ground and the street, a flat bottom swale (ditch) properly sized and flowing towards existing or proposed stormwater facilities, such as inlet, underground pipe, swale, creek, wash or channel shall be constructed.

4.10.3 Mounding of earth on the right-of-way may be permitted only if it shall not adversely affect access, railroad maintenance activities, visibility and drainage on the right-of-way. The Public Agency should submit drawings showing the existing and proposed contour elevations to SCRRA and Member Agency. The final contour elevations shall be approved solely by SCRRA and Member Agency. If allowed, imported soil shall meet the Member Agencies’ specifications for clean backfill material.

4.11 Access

4.11.1 SCRRA and Member Agency must be able to readily access, inspect, repair and maintain drainage systems, bridges, tie and track replacement, tunnel and trestle, signal and communications equipments and grade crossing equipments from

ES5214.
existing roadways. Utility companies must be able to readily access their facilities for maintenance and operation purposes.

4.11.2 The use of motorized vehicles is prohibited on the Rail-with-Trail, except for authorized emergency and maintenance vehicles including SCRRRA and Member Agency maintenance vehicles. Horses and other animals are not permitted, except for guide or service dogs. Appropriate signage shall be placed at all entrances to the trail designating restricted use not foreseen in the design of the Rail-with-Trail.

4.11.3 The Rail-with-Trail shall be subject to and subordinate to the rights of all current and future tenants and licensees of Member Agencies, including the rights of reasonable access over the Rail-with-Trail project.

5.0 CONSTRUCTION

5.0.1 Public Agency shall comply with the rules and regulations contained in the current editions of the following SCRRRA documents during the construction of the project: (i) Temporary Right-of-Entry agreement (SCRRRA Form No. 6), (ii) Rules and Requirements for Construction on Railroad Property (SCRRRA Form No. 37), (iii) General Safety Regulations for Third Party Construction and Maintenance Activity on SCRRRA Member Agency Property, and (iv) Applicable SCRRRA Engineering Standards.

5.0.2 SCRRRA and Member Agencies do not allow any approved parties to cause or permit any hazardous materials to be brought upon, stored, used, generated, or treated on or about the right-of-way. The Public Agency shall not bring in or use any imported soils unless it has been tested.

6.0 MAINTENANCE

6.0.1 Public Agency shall maintain the Rail-with-Trail, fence, gates, signs, landscaping, and any other improvements that are part of the licensed Rail-with-Trail project area, in good order and condition to the satisfaction of SCRRRA and Member Agency, at its own cost and expense.

6.0.2 Public Agency shall notify SCRRRA five (5) working days in advance of any construction or maintenance activity that shall occur within the right-of-way. Public Agency shall be responsible to reimburse SCRRRA the actual cost and expense incurred by SCRRRA for all services and work performed in connection with the project including a computed surcharge representing SCRRRA’s costs for administration and management.

6.0.3 Public Agency shall insure that warning signs, which explain the importance of staying on authorized Rail-with-Trail only, and off railroad property, are prominently displayed and regularly maintained. SCRRRA and Member Agency will rely on the Public Agency to enforce trespassing and vandalism laws. Public Agency Police shall provide patrols, respond as needed and issue citations and warning as appropriate.
7.0  FUNDING

SCRRA does not provide funding for Rail-with-Trail projects on the right-of-way.

8.0  EXCEPTIONS

8.0.1  Topography, environment, right-of-way widths, obstructions, utilities etc., may make it difficult to follow all the requirements of these guidelines. In order to strike a balance between SCRRA and Member Agencies’ mandate to provide safe and efficient transportation to the public and the ability to meet interstate freight obligations and aesthetic benefits offered by the Rail-with-Trail, SCRRA may grant deviations or variances from these guidelines provided that the project as a whole is consistent with the overall intent of the guidelines.

8.0.2  The Public Agency shall prepare an engineering report showing in precise details the changes and deviations and provide support for their position.

8.1  Minor Deviations

The SCRRA Director of Maintenance and Engineering may permit minor deviations from these guidelines. Minor deviations, which would be considered, are as follows:

- Vertical separation between the tracks and the Rail-with-Trail, which could enhance safety and railroad operations, maintenance and construction issues and activities.
- Locations where a minor deviation granted for a short segment or segments of the Rail-with-Trail would enable successful development of a lengthier segment of the Rail-with-Trail in accordance with these guidelines.
- Circumstances where short or minor deviations from the guidelines would produce significant benefits for the Rail-with-Trail.
- Other approved measures, which could enhance safety and railroad operations, maintenance and construction issues and activities.

8.2  Major Deviations

SCRRA Chief Executive Officer with affected Member Agency concurrence on a case-by-case basis may permit major deviations consistent with the overall intent of these Guidelines. Major deviations are those that require the entire Rail-with-Trail to deviate from the most important safety and rail related requirements of these guidelines.
Amtrak Service & Ridership

Amtrak operates approximately 70 intercity trains and 100 commuter trains per day in California. This includes the following long-distance trains through California:

- **The California Zephyr** (daily San Francisco Bay Area-Salt Lake City-Chicago)
- **The Coast Starlight** (daily Los Angeles-Oakland-Seattle)
- **The Southwest Chief** (daily Los Angeles-Albuquerque-Chicago)
- **The Sunset Limited** (tri-weekly Los Angeles-New Orleans-Orlando)*

*Sunset Limited service suspended east of New Orleans.

Amtrak also partners with the State of California to operate these high-frequency, state-supported trains:

- **Capitol Corridor** (San Jose-Oakland-Sacramento-Auburn) 7 daily round trips San Jose-Oakland, 16 round trips Oakland-Sacramento (11 on weekends) with one extending to Auburn.
- **Pacific Surfliner** (San Diego-Los Angeles-Santa Barbara-San Luis Obispo) 11 daily round trips San Diego-Los Angeles (12 on weekends), 5 round trips Los Angeles-Santa Barbara-Goleta, with 2 extending to San Luis Obispo.
- **San Joaquin** (Oakland/Sacramento-Fresno-Bakersfield, with motorcoach connections to Los Angeles) 4 daily round trips Bakersfield-Oakland, 2 daily round trips Bakersfield-Sacramento.

During FY10 Amtrak served the following California locations:

<table>
<thead>
<tr>
<th>City</th>
<th>Boardings + Alightings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaheim</td>
<td>331,666</td>
</tr>
<tr>
<td>Antioch-Pittsburg</td>
<td>34,417</td>
</tr>
<tr>
<td>Auburn</td>
<td>31,092</td>
</tr>
<tr>
<td>Bakersfield</td>
<td>413,172</td>
</tr>
<tr>
<td>Barstow</td>
<td>3,609</td>
</tr>
<tr>
<td>Berkeley</td>
<td>133,152</td>
</tr>
<tr>
<td>Burbank</td>
<td>41,997</td>
</tr>
<tr>
<td>Camarillo</td>
<td>33,165</td>
</tr>
<tr>
<td>Carpinteria</td>
<td>20,149</td>
</tr>
<tr>
<td>Chatsworth</td>
<td>49,178</td>
</tr>
<tr>
<td>Chico</td>
<td>10,067</td>
</tr>
<tr>
<td>Colfax</td>
<td>4,322</td>
</tr>
<tr>
<td>Corcoran</td>
<td>27,375</td>
</tr>
<tr>
<td>Davis</td>
<td>409,611</td>
</tr>
<tr>
<td>Dunsmuir</td>
<td>4,879</td>
</tr>
<tr>
<td>Emeryville</td>
<td>529,965</td>
</tr>
<tr>
<td>Fremont</td>
<td>39,162</td>
</tr>
<tr>
<td>Fresno</td>
<td>352,737</td>
</tr>
<tr>
<td>Place</td>
<td>Population</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Fullerton</td>
<td>411,489</td>
</tr>
<tr>
<td>Glendale</td>
<td>37,117</td>
</tr>
<tr>
<td>Goleta</td>
<td>59,911</td>
</tr>
<tr>
<td>Great America (Santa Clara)</td>
<td>104,041</td>
</tr>
<tr>
<td>Grover Beach</td>
<td>17,944</td>
</tr>
<tr>
<td>Guadalupe</td>
<td>10,018</td>
</tr>
<tr>
<td>Hanford</td>
<td>187,865</td>
</tr>
<tr>
<td>Hayward</td>
<td>29,984</td>
</tr>
<tr>
<td>Irvine</td>
<td>630,190</td>
</tr>
<tr>
<td>Laguna Niguel/Mission Viejo</td>
<td>2,644</td>
</tr>
<tr>
<td>Lodi</td>
<td>7,443</td>
</tr>
<tr>
<td>Lompoc-Surf</td>
<td>6,422</td>
</tr>
<tr>
<td>Los Angeles (a)</td>
<td>1,517,342</td>
</tr>
<tr>
<td>Madera</td>
<td>20,031</td>
</tr>
<tr>
<td>Martinez</td>
<td>410,968</td>
</tr>
<tr>
<td>Merced</td>
<td>103,505</td>
</tr>
<tr>
<td>Modesto</td>
<td>96,662</td>
</tr>
<tr>
<td>Moorpark</td>
<td>12,293</td>
</tr>
<tr>
<td>Needles</td>
<td>9,481</td>
</tr>
<tr>
<td>Oakland</td>
<td>355,128</td>
</tr>
<tr>
<td>Oakland Coliseum</td>
<td>20,785</td>
</tr>
<tr>
<td>Oceanside</td>
<td>293,012</td>
</tr>
<tr>
<td>Ontario</td>
<td>4,756</td>
</tr>
<tr>
<td>Orange</td>
<td>2,439</td>
</tr>
<tr>
<td>Oxnard</td>
<td>74,468</td>
</tr>
<tr>
<td>Palm Springs</td>
<td>6,061</td>
</tr>
<tr>
<td>Paso Robles</td>
<td>10,372</td>
</tr>
<tr>
<td>Pomona</td>
<td>1,523</td>
</tr>
<tr>
<td>Redding</td>
<td>10,322</td>
</tr>
<tr>
<td>Richmond</td>
<td>271,486</td>
</tr>
<tr>
<td>Riverside</td>
<td>10,806</td>
</tr>
<tr>
<td>Rocklin</td>
<td>34,263</td>
</tr>
<tr>
<td>Roseville</td>
<td>67,796</td>
</tr>
<tr>
<td>Sacramento (b)</td>
<td>1,107,220</td>
</tr>
<tr>
<td>Salinas</td>
<td>18,935</td>
</tr>
<tr>
<td>San Bernardino</td>
<td>10,080</td>
</tr>
<tr>
<td>San Clemente Pier</td>
<td>9,990</td>
</tr>
<tr>
<td>San Diego (c)</td>
<td>715,043</td>
</tr>
<tr>
<td>San Diego-Old Town</td>
<td>21,616</td>
</tr>
<tr>
<td>San Jose</td>
<td>202,512</td>
</tr>
<tr>
<td>San Juan Capistrano</td>
<td>223,580</td>
</tr>
<tr>
<td>San Luis Obispo</td>
<td>99,778</td>
</tr>
<tr>
<td>Santa Ana</td>
<td>152,733</td>
</tr>
<tr>
<td>Santa Barbara</td>
<td>295,079</td>
</tr>
<tr>
<td>Simi Valley</td>
<td>38,946</td>
</tr>
<tr>
<td>Solana Beach</td>
<td>408,060</td>
</tr>
<tr>
<td>Stockton (Downtown)</td>
<td>34,188</td>
</tr>
<tr>
<td>Stockton (San Joaquin St.)</td>
<td>238,868</td>
</tr>
<tr>
<td>Suisun-Fairfield</td>
<td>171,381</td>
</tr>
<tr>
<td>Truckee</td>
<td>9,139</td>
</tr>
<tr>
<td>Turlock-Denair</td>
<td>21,668</td>
</tr>
<tr>
<td>Van Nuys</td>
<td>70,551</td>
</tr>
<tr>
<td>Ventura</td>
<td>45,385</td>
</tr>
</tbody>
</table>
Victorville 5,558  
Wasco 18,044  
**Total California Station Usage:** 11,226,636  

Ridership notes:

a) *Los Angeles is the 5th busiest station in the national Amtrak System*

b) *Sacramento is the 7th busiest station in the national Amtrak System*

c) *San Diego is the 11th busiest station in the national Amtrak System*

**Procurement/Contracts**

Amtrak placed orders valued at $109,730,227 for goods and services in California in FY10. Much of this amount was in the following locations:

<table>
<thead>
<tr>
<th>City</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carlsbad</td>
<td>$6,783,910</td>
</tr>
<tr>
<td>Folsom</td>
<td>$2,716,163</td>
</tr>
<tr>
<td>Oakland</td>
<td>$2,408,055</td>
</tr>
<tr>
<td>Orange</td>
<td>$31,355,921</td>
</tr>
<tr>
<td>Sacramento</td>
<td>$3,913,581</td>
</tr>
<tr>
<td>San Diego</td>
<td>$4,852,138</td>
</tr>
<tr>
<td>San Francisco</td>
<td>$2,031,217</td>
</tr>
<tr>
<td>San Jose</td>
<td>$2,264,090</td>
</tr>
<tr>
<td>San Luis Obispo</td>
<td>$2,682,124</td>
</tr>
<tr>
<td>Santa Fe Springs</td>
<td>$28,621,471</td>
</tr>
<tr>
<td>Whittier</td>
<td>$3,418,984</td>
</tr>
</tbody>
</table>

On October 28, 2010, Amtrak announced an order of 70 new electric locomotives from Siemens AG. The six-year, $466 million contract will create 250 jobs, primarily at a facility in Sacramento, but also at plants in Norwood, Ohio, and Alpharetta, Georgia.

**Employment**

At the end of FY10, Amtrak employed 2,952 California residents. Total wages of Amtrak employees living in California were $163,045,480 during FY10.

**State-Assisted Services**

The state of California provides capital and operating funds for three intercity corridors: the *Pacific Surfliner, Capitol Corridor* and *San Joaquins*. In addition, an extensive network of Thruway Motorcoach services links communities, which have no direct rail access, to the Amtrak California system. Amtrak’s corridors in California are some of the busiest outside of the Northeast Corridor.

**Contract Commuter Services**

Amtrak operates the Caltrain commuter service under contract with the Peninsula Corridor Joint Powers Board. There are 90 weekday trains on the San Francisco-San Jose segment, with some extending to Gilroy. On weekends, service is on the San Francisco-San Jose segment only. Over 12.6 million
passengers used the service in the year ending June 30, 2009. Amtrak took over the Los Angeles-area Metrolink operations on June 26, 2010.

**Major Facilities**

California is home to a major Amtrak maintenance facility in Los Angeles, which opened in 2001. Jointly funded by Caltrans and Amtrak, this complex maintains 21 locomotives and 204 cars. As a result of Amtrak’s influx of ARRA capital dollars, $25 million is being spent to expand and modernize this facility.

Amtrak also performs equipment servicing and maintenance in Oakland, at a facility that opened in 2004. The 22-acre, $71-million complex was built with Amtrak and state funding and services equipment used on the *California Zephyr*, *San Joaquin*, and *Capitol Corridor* routes. It replaced an outdated brick building on freight railroad property. Regular periodic maintenance is performed on 18 locomotives and 83 passenger cars.

One of Amtrak’s two major reservations centers is located in Riverside, 70 miles southeast of Los Angeles, and has approximately 600 active employees.

**Stations**

A new shelter, platform, and parking area at Madera, on the *San Joaquin* line, was placed into service on November 8, 2010. The new location is on Road 26 on the north side of the city, and replaces the former location on Road 29 on the east side of the city. The new facility cost approximately $2 million, mostly from state funds.

**Capital Projects**

Since 1990, the State of California has invested over $1.8 billion to upgrade track and signal systems; renovate stations and purchase passenger cars and locomotives. Amtrak has invested $400 million in purchase of passenger cars and locomotives, upgrading and renovation of maintenance facilities and investments in technology. The result has been faster, more frequent, and more reliable service.

**Selected Highlights**

Amtrak’s corridors in California are among the busiest in the system. Ridership figures include:

- The *Pacific Surfliner* (San Diego-Los Angeles-Santa Barbara-San Luis Obispo)—the 2nd-busiest corridor in the U.S. had 2,613,604 riders in FY10.
- The *Capitol Corridor* (San Jose-Oakland-Sacramento-Auburn)—the 3rd-busiest corridor in the country had 1,580,619 riders.
- The *San Joaquins* (Bakersfield-Oakland/Sacramento)—the 6th-busiest corridor in the country had 977,834 riders.

California has the highest Amtrak usage of any state in the country.
appendix E
Community Outreach

Anaheim OUTDOORS
Connectivity Plan “IT’S YOUR BACKYARD”
Community Workshop #1  
Anaheim Urban Greening Connectivity Planning
6:30 p.m. – 9 p.m.
August 21, 2011

Location:
Anaheim City Hall West Tower
Gordon Hoyt Conference Room 2nd floor Room
201 S. Anaheim Blvd
Anaheim, CA

SUMMARY REPORT

INTRODUCTION

On August 25, 2011, the City of Anaheim conducted the first of two Community Workshops for the Anaheim Urban Greening Connectivity Planning project. The purpose of the workshop was: (a.) to gather input from the community on their perspectives for improved pedestrian, vehicular and bicycle circulation throughout the City, and (b.) to record all community input for use in the preparation of design guidelines leading to the final phase development of circulation enhancements for City streets, trails and bicycle routes.

WORKSHOP FORMAT

Pamela Galera from the City of Anaheim welcomed community members and gave background information about the rationale for the project and related planning efforts in the City. Rick Barrett of Moore Iacofano Goltsman, Inc. (MIG), planning consultants for the Anaheim Urban Greening Plan, gave an introduction to the project and an overview of the workshop goals. Rick then presented a slide show on the design and outreach process, providing an expansive overview of the team structure and approach, strategies and examples of similar projects.

Upon conclusion of the presentation, the attendees were asked to congregate around any one or more of six (6) stations, five (5) of which represented geographical areas of the City, and one (1) station dedicated to “Big Picture”, City-wide ideas and issues. For the purpose of input-gathering, the City was divided into five regions: 1) West Anaheim, 2) The Colony and Downtown, 3) Platinum Triangle and South Anaheim, 4) Anaheim Canyon Business District, and 5) East Anaheim.

Throughout the evening, participants were encouraged to submit feedback through discussion and comment cards. These comments were collected, and contact info for all attendees were compiled into a roster for future information-sharing and invitations to future meetings.
**DISCUSSION**

**Issues, Opportunities and Constraints**
Issues and challenges were discussed, these comments included:
- Possible improvements in transit R.O.W. areas and waterway connections
- Increased opportunities to walk or take transit instead of driving
- Concerns about safe pedestrian and bicycle travel
- Drainage issues
- ADA accessibility/parking
- Slower speed limit for vehicles, enforcement of speed limits
- Places to walk to: destinations, loop route for walkers
- Maintain/enhance pedestrian friendliness
- Incremental improvements
- Extensive/increased foot traffic on trails and sidewalks
- Investigate alternative street configurations (i.e. one way, defined sidewalks, turnabouts)

**Comments**
Participants provided comments regarding their vision for the City, broken out into five (5) distinct geographic sections, and general, Citywide comments were recorded separately.

**West Anaheim**
- Katella widening
- Not enough parks
- Existing green space small and unusable
- Magnolia Road improvement
- Unsafe streets
- Inadequate lighting
- Minimal landscaping
- Needs drainage improvement on several cross-streets – flooding an issue
- Convert roofs of industrial area into green roofs
- Reduce stormwater runoff
- Put in fingers of green (mini parks, i.e. bioswales) into parking lots outside of large office buildings
  - Increase amount of green spaces usable by all
  - Can also be productive landscapes for employees to enjoy
- Businesses help with maintenance
- Cerritos Ave. is unsafe for pedestrians – heavy vehicular traffic
- Union Pacific railroad
- Connect to adjacent cities
- Pocket parks
- Bus stops with benches
- Many roads need TLC
- Street drainage improvements not conducive to bike users
- County land along Brookhurst
- Loara High School – students walking to and from school
- Anaheim Plaza on Euclid – not pedestrian friendly
  - Car-centric – needs more local businesses
- Allow/encourage green roofs
- More local business and road improvements
- Dedicated Bike lane on Orange Avenue
**Colony**
- Fast traffic on State College
- Incompatible with bike trails
- Trolley into downtown from south on railroad line
- North side of Santa Ana Ave. should be pedestrian friendly
- Reservoir = passive recreation opportunities?
- Bird watching
- Lincoln traffic too fast to be bike corridor into downtown
- Include sensors at intersections to detect bikes
- Bike loop connecting to downtown
- Multi-purpose trails around downtown
- Potential connection to Manchester Ave.
- La Palma Ave. between Sunkist & State College narrows
- Opportunity to create bicycle corridors throughout Colony – lead people Downtown
- Look at different streets in downtown to determine primary function
- Shared sidewalks
- Skateboarders are users too
- Connect to Fullerton bike trail
- Convert two-way streets to one-way
- Change excess asphalt to sidewalks
- Disconnected sidewalks (Ganahl Lumber on Ball, for example)
- Acacia Ave. bike lane - to connect to Fullerton
- Metrolink station connection
- Opportunities for trails at East and La Palma Basin
- More Bike Racks downtown!

**South Anaheim**
- Reduce overall traffic speeds
- Create “real” bikeway (dedicated lanes)
- SCE greenspace encourages late problem activities (Katella & Brookhurst)
- Better access to resort for workers
- Better access to river trail
- Joint use of green space with schools
- Signs to restaurants for bikers
- County shortfall - $48 mil. Effect on improvement program?
- Better access across (over) river
- Better connection to schools
- Property value in PT is a concern
- Year-round water in Santa Ana River feasibility
- How does this project link to ARTIC?
- Stress on emergency services responsiveness – more trails = drain on resources
- Staffing requirements for additional green space is a concern
- Questioning Edison easement by energy field. What is it used for...or the need?
- Police patrol on Edison easement
- Bike use on Orangewood is a concern
- Concern of dumping on SCE easement
- Hikers, bikers and equestrians – mixed use compatibility
- Safer way for multi-use to cross over the river
- Independent pedestrian bridges from streets
• Safety of trails adjacent to railroad
• More trees and shrubbery habitat along riverbed
• Make attractive w/rest stops (benches)
• Link schools with safe trails, safe route to schools
• Break up large parking lots with green strips
• Green roofs on large commercial buildings
• Pocket parks along Brookhurst

**Anaheim Canyon**
• Dirt road north side of office buildings
• Dust, high speeds, noise - Dust control measures
• Bike trail on Lincoln
• Green up north side of river
• Traffic calming and pedestrian safety
• Trailhead hitching posts on river trail
• Unsafe walking connection to river from west side
• Bike speeds on trail an issue
• Green Pocket Parks
• Better access to river trail
• Water recreation – kayaks, etc.
• Grade separations at Crowther
• Bike connections from Canyon businesses to River
• Other water bodies – lakes – remove fence separating trails from streets (Miller St. etc.)
• Median on Tustin Ave. at river bridge
• Stop U-turns on Tustin

**East Anaheim**
• Create Regional Park
• Better pedestrian/horse connections
• Continue multi-use trail
• No Safe uphill travel (narrow middle?)
• Access to private property (east of 241)
• Bike trail classification
• Incorporate exercise equipment (Riverdale)
• Ensure horse trail connection to Santa Ana River
• Multi-use trail: hikers, bikes, horses
• Safe bike environment on Fairmont Blvd. (widen road)
• Add multi-use bridges across river
• Pedestrian connection to river at Fairmont
• Deer Canyon equestrian bridge

**“Big Picture” (City-wide)**
• P3 nonprofits important to success of plan
• Relieves taxpayer burden
• Bike licensing
• Transit Occupancy Tax (TOT)
• Police substation on river
• Bike/pedestrian safety – vehicle speeds!
• REO – Some green space from developers
• Brea – great example of arts

*Prepared by MIG, Inc.*
• Make Anaheim more attractive
• Increased/improved public transit
• Developer agreements -Leveraging
• Retain nodes on river
• Modify parking agreements finance – O & M
• Connecting to other cities
• Bicycle Stations – community bike shop
• “Bicycle Boulevards”
• Age-appropriate amenities, bench locations, distances between rest areas
• Links – loops – crossings
• Developer fees – revisit expenditures
• Commercial fees & traffic fees
• Non-profit endowment fund
• Adopt–A-Park
• Productive landscapes
• Grow and sell produce
• Increase property values
• Improve public policy
• Art in public places – a condition of approval fee
• Benefit assessment district
• Density bonus – fee = trails
• Reduce parking requirement
• Transit
• Bike friendly environment
• Retail nodes
• Safety & security Patrols
• Lighting & Landscaping
• Eliminate Hiding places
• Multi-use needs to include: hikers, bikers and equestrians, dog walkers
• Connections to other cities

Next Steps
It was noted that the next community workshop would be scheduled around the middle of December. Notices will be sent to residents and an announcement will be advertised in the local newspaper as to the exact date and time. Public input from tonight’s workshop will help MIG to develop several concepts for the circulation enhancement plan, which will be presented at Workshop #2 for further comments and feedback from the public.
Community Open House
Anaheim Outdoors
6:30 p.m. – 8:30 p.m.
December 13, 2011

Location:
Anaheim City Hall – Front Lobby
201 S. Anaheim Blvd
Anaheim, CA

SUMMARY REPORT

INTRODUCTION

On December 13, 2011, the City of Anaheim conducted an Open House for the Anaheim Outdoors project. The purpose of the open house was: (a.) to gather input from the community on their perspectives for improved pedestrian, vehicular and bicycle circulation throughout the City, and (b.) to record all community input for use in the preparation of design guidelines leading to the final phase development of circulation enhancements for City streets, trails and bicycle routes.

WORKSHOP FORMAT

The workshop was an open house format. A sign-in station, large-scale map, and seven (7) chapter stations were distributed throughout the City Hall Lobby. Community members were encouraged to visit each station and give input according to the chapter topics. The chapter topics included: 1. Build Community, 2. Improve Connectivity, 3. Promote Healthy Lifestyle, 4. Increase Recreation Opportunities, 5. Enhance the Sustainable Landscape, 6. Increase Financial Value and 7. Implement and Maintain the Plan. Several representatives from the City of Anaheim and MIG were present to answer questions, encourage dialog, and record comments throughout the evening.

Throughout the evening, participants were also encouraged to submit feedback through comment cards. These comments were collected, and contact info for all attendees were compiled into a roster for future information-sharing and invitations to future meetings.

STATIONS

1. Build Community
Comments included:
   - At Walnut (Edison Easement) between Walnut and 9th
     - On south side of easement, consider what type of barrier will protect property owners from noise/looky loos/etc.
• Traffic calming required on Walnut between Ball and Katella
• Community leadership awards
• Include outreach to Salvation Army

2. Improve Connectivity
Comments included:
• Redefine bike path and trail ROW
• Roadway should have same rules at roads (auto yield to bike yield to ped)
• Do not block slow traffic on right
• Runners and walkers should stay on trail
• Separate walkers and bike
• When widening roads always factor in bike lanes
• Provide through bike lane at T-intersection
• Too much traffic on Lemon (between 91 and La Palma)
• Consider strategic seating opportunities to encourage interaction
• Encourage unifying landscapes similar to Anaheim Hills
• Promote different street trees for each neighborhood
• Slow for safety when bikes are in area
  o Like kid zone & road workers
• 3’ space to pass bike

3. Promote Healthy Lifestyle
Comments included:
• Find sites for community gardens
• Develop prototype of community garden
  o Gardening classes
  o Food and nutrition classes
• Contact Bill Taormina – oversees City vacant land
• Encourage Clean City practices

4. Increase Recreation Opportunities
Comments included:
• Space for soccer
• Community garden
• Create liaisons for distribution of materials and feedback
• Promote Farmer’s markets
• Incorporate local schools and community
• Cooking competitions
• Provide skate parks

6. Enhance the Sustainable Landscape
Comments included:
• Increase Tree Canopy, “Urban Forest”
• Avoid creating hiding places
• Buffer between cars and bikes/walkers
• Provide connections to Santa Ana River from Downtown
• Carbon Creek would be a great connection
• SCE ROW – Cerritos to River- potential wilderness connection
• Concern with greater use of Energy Field more noise and impact on adjacent neighbors
• In Orange Hart Park to Mainplace - successful creekside trail with many trees
• Lemon Street – safety a concern (neighbor perception lots of DUI’s)
• La Palma Park – perception scary (with number of transients)
6. Increase Financial Value
Comments included:
- Better access to recreation and parks increases property value
- Slow down traffic on Walnut (for safer crossing)
- Create jogging trails around Disneyland
- Bed taxes increase with more than one night stay
- Look at population distribution vis-à-vis improvements

7. Implement and Maintain the Plan
Comments included:
- Encourage Business Community investment
- Coordinate joint use agreements work with risk management
- Develop small pilot projects in temporary spaces ie. Community gardens, trails
- Collaborate with scouts for development and maintenance
- Provide more explicit explanation of “lower fruit” implementation
- Herald and promote volunteer opportunities
- Promote inter-generational investment in each other
- Develop stronger connection to community retirees
- Consider social aspects of implementation/on-going maintenance
- Provide well connected network of information on Anaheim Outdoors
- Capitalize on potential for getting people involved
- Encourage hotel bike reservations
- Website voting on proposed improvements/activities
- Solicit interactive input (i.e. “what would you volunteer for?”)
The City of Anaheim Community Services Department would like to receive input for the

“ANAHEIM OUTDOORS” CONNECTIVITY PLAN
It’s Your Backyard...

Wednesday, February 29, 2012
7:00-8:30 p.m.
Downtown Community Center
Hall A
250 E. Center St.
Anaheim, CA 92805

The City of Anaheim is proposing “Bicycle Boulevards” on Lemon and Santa Ana Streets. We want to get your feedback regarding this potential community enhancement.

For more information, please contact Pamela Galera at (714) 765-4463 or pgalera@anaheim.net

To request this form in an alternate format or if you require a modification or accommodation to participate in this meeting, please call Pamela Galera at (714) 765-4463 or TTY (714)765-5125 at least 72 hours prior to the meeting.
SUMMARY REPORT

INTRODUCTION

On February 29, 2012, the City of Anaheim conducted a Community Workshop for the Anaheim OUTDOORS project. The purpose of the community workshop was: (a.) to gather input from the community on their perspectives for improved pedestrian, vehicular and bicycle circulation throughout the City, and (b.) to record all community input for use in the preparation of the Anaheim OUTDOORS Connectivity Plan. The goal of the Connectivity Plan is to identify projects that will create new green space and encourage alternative modes of transportation throughout the City.

WORKSHOP FORMAT

The workshop was conducted in a working group format. A total of 21 community members signed-in at the workshop registration table and received an agenda and comment card. Pamela Galera with the City of Anaheim welcomed community members and gave a brief overview of the Anaheim OUTDOORS project. Rick Barrett of MIG presented a slide show on the details of the project and showed examples of Bicycle Boulevards, roundabouts and other elements that could improve bicycle circulation in the City. The participants were then asked to work in groups to discuss and recommend circulation improvements for the section of the City known as the Colony. City and MIG staff were available to answer questions, encourage dialog and record comments at each work group. The participants were then asked to ‘report back’ their ideas to the rest of the attendees. All input was recorded by MIG staff.

Throughout the evening, participants were also encouraged to submit feedback through comment cards. These comments were collected, and contact info for all attendees were compiled into a roster for future information-sharing and invitations to future meetings.

GROUPS

TABLE 1 –
• Concerned about the width of bulbouts, railroad tracks, and traffic on Santa Ana. Not recommending Santa Ana for Bike Blvd.
• Recommend Sycamore as a Bike Blvd. It would connect people to Founders Park and the High School.
• Lemon street is good but north of La Palma needs reworking to make it safer. Possibly route people along La Palma Park instead of continuing up Lemon to the 91. That would also connect to two more parks.
• Would also like to see bike lanes on West. It is already a fairly slow and picturesque street.

**Table 2 –**

• One issue with utilizing Sycamore as a Bike Blvd. is that it does not go by the packing house.
• On Lemon when it crosses Broadway, left turn is not easy to cross for pedestrians and bikes.
• An easier way to get to the river would be to go down Vermont to Wagner (or go down Ball or Lincoln both those would be busy/difficult streets to ride on).
• Building a bridge at Wagner is a safer alternative.
• Parking problems on Lemon, especially at Pearson or La Palma Parks.
• On Lemon, north of La Palma, use alley to west to avoid heavy traffic.
• Avoid semi-trucks on Lemon.
• New AT&T site will create more parking problems.
• Lemon going to La Palma – jog around to avoid truck traffic.
• Pearson has a lot of runners and joggers – a decomposed granite path with mile markers around the park would be good.
• One-way street on Lemon would be good.
• At La Palma & East – the Raymond Basin is an eyesore. Could turn it into an exercise loop and/or bike destination, similar to Atwater/Silverlake reservoir.
• Broadway has an existing bike lane.
• There is traffic when turning left on St. College from Santa Ana.
• Need a wide bike path at Wagner.

**Table 3 –**

• There is concern for parked cars opening their doors on bikes along Santa Ana and Lemon. Lemon is highly parked.
• The roundabout at Pearson works well – would like to see more of them.
• West is also a good street for bikes. Consider a Bike Blvd there.
• Santa Ana isn’t a bad choice for a Bike Blvd. – the railroad tends to slow drivers down.
• Broadway is a fast street, many bikers would choose Santa Ana instead if it was a Bike Blvd.
• Walnut is a good street to ride on.
• There are already plans to close part of Lemon (at Lincoln).
• Consider a roundabout at North.
• The signal at Lemon and La Palma needs work. The left-turn is very busy during traffic.
• Citron and Santa Ana is a good location for a roundabout or other improvement. It is VERY busy at traffic hours.
• East has a lot of semi-truck traffic, that might make it difficult for a roundabout.
• Consider trails next to railroad tracks.
• Santa Ana terminates at State College, hard to get further east.
• The connection to the river is challenging – you have to take State College for a short ways and it is VERY busy. Need a better transition. Consider Santa Ana to Reseda to South OR Santa Ana to Olive to South.
**TABLE 4 –**

- On Lemon heading southbound, keep the porkchop, it helps slow traffic.
- AT&T traffic northbound to the 91 freeway.
- Need a striped lane down the middle of street.
- More speed bumps to ensure safe speed of vehicular traffic – especially on Lemon.
- Santa Ana and Lemon are good choices for Bike Blvd streets, but so is Sycamore.
- Trains complicate Santa Ana as a Bike Blvd because they limit the R.O.W.
- The existing roundabout at Clementine doesn’t provide any benefits. It keeps emergency crews from getting places. Properly placed roundabouts would be acceptable.
- The traffic study advocated one-way traffic on the roundabout near Pearson – this would help traffic congestion considerably.

**TABLE 5 –**

- Anaheim to Manchester to Chapman to River parking.
- Recommend connecting to Fullerton.
- Refer to Fullerton General Plan – bicycle circulation element.
- Lemon would be a good street to use as a bike blvd as it connects to the City of Fullerton’s bike lanes. Harbor is too busy.
- Concerned about Ball road connection because it breaks the flow.
- Put bike lane striping on Orangethorpe.
- Put bike lane striping (Class II) to protect bicyclist wherever possible. The white line is a restraining line.
- Reduce two lanes of traffic in each direction to one lane of parked cares, bike lane, and one lane of traffic where possible. Berkeley St. in Fullerton is a good example of removing a traffic lane and adding a bike lane and parking.
- On Santa Ana there is a new development at the Colony (East of Olive), bulbouts in this development are not beneficial to bikers.

**NEXT STEPS**

Participants were encouraged to visit the website (www.anaheimoutdoors.net) for future updates and to download the current version of the Anaheim OUTDOORS Connectivity Plan.
# Anaheim OUTDOORS Connectivity Plan

## Task Force Directory

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>City or Agency/Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phyllis Alzamora</td>
<td>Urban Land Institute -OC/IE</td>
<td></td>
</tr>
<tr>
<td>Dan Amsden</td>
<td>MIG</td>
<td></td>
</tr>
<tr>
<td>CJ Amstrup</td>
<td>Planning Services Manager</td>
<td>Anaheim Planning Dept</td>
</tr>
<tr>
<td>Marco Anderson</td>
<td>Associate Regional Planner</td>
<td>SCAG</td>
</tr>
<tr>
<td>Tony Aquino</td>
<td>Associate Engineer</td>
<td>Garden Grove Public Works</td>
</tr>
<tr>
<td>Russell Barabe</td>
<td></td>
<td>Dept of Fish &amp; Game</td>
</tr>
<tr>
<td>Dennis Barnes</td>
<td>Traffic Eng</td>
<td>Buena Park</td>
</tr>
<tr>
<td>Rick Barrett</td>
<td>Project Manager</td>
<td>MIG</td>
</tr>
<tr>
<td>Jennifer Bergner</td>
<td></td>
<td>OCTA</td>
</tr>
<tr>
<td>Jim Biery</td>
<td>City Engineer</td>
<td>Buena Park</td>
</tr>
<tr>
<td>Jonathon Borrego</td>
<td>Principal Planner</td>
<td>Anaheim Planning Department</td>
</tr>
<tr>
<td>Mark Brownrigg</td>
<td>Project Manager II</td>
<td>Anaheim Community Development</td>
</tr>
<tr>
<td>Amy Buch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Matthew Budds</td>
<td>Police Officer/Plan/Resrch</td>
<td>Anaheim Police Department</td>
</tr>
<tr>
<td>Freddy Cheung</td>
<td>Union Pacific Railroad</td>
<td></td>
</tr>
<tr>
<td>Matt Chirdon</td>
<td>CD Fish and Game</td>
<td></td>
</tr>
<tr>
<td>Mike Christensen</td>
<td>Bus &amp; Comm Progam Mgr</td>
<td>Orange Unified School District</td>
</tr>
<tr>
<td>Janet Coe</td>
<td>Neighborhood Council</td>
<td>CSU Pomona</td>
</tr>
<tr>
<td>Julie Coleman</td>
<td>Broker</td>
<td>Real Estate</td>
</tr>
<tr>
<td>Art Contreras</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brian Cox</td>
<td>Stake Holders</td>
<td>Bike Coalition</td>
</tr>
<tr>
<td>Hugo Curiel</td>
<td>Parks Project Manager</td>
<td>Fullerton Park &amp; Recreation</td>
</tr>
<tr>
<td>Omar Dadabhoy</td>
<td>Director Comm Development</td>
<td>Stanton</td>
</tr>
<tr>
<td>Bill Delo</td>
<td>Associate</td>
<td>Bikeways Collaborative - IBI Group</td>
</tr>
<tr>
<td>Skyler Denniston</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mark Denny</td>
<td></td>
<td>Orange County Parks</td>
</tr>
<tr>
<td>Jeff Dickman</td>
<td></td>
<td>Orange County Flood Control Dist</td>
</tr>
<tr>
<td>Christine Diecker</td>
<td>Resource Efficiency Advisor</td>
<td>Anaheim Public Utilities</td>
</tr>
<tr>
<td>Bruce Dosier</td>
<td>Dir. of Info Services/Property Mgmt</td>
<td>Orange County Water District</td>
</tr>
<tr>
<td>Don Eklund</td>
<td>Executive VP</td>
<td>Advanced Technologies</td>
</tr>
<tr>
<td>Kevin Emenaker</td>
<td>Dir-Facilities, Plan &amp; Tech</td>
<td>OUSD - Facilities and Planning</td>
</tr>
<tr>
<td>Romeo Estrella</td>
<td>Transportation Planner</td>
<td>Caltrans</td>
</tr>
<tr>
<td>Emily Kiefer</td>
<td>Project Associate</td>
<td>MIG</td>
</tr>
<tr>
<td>Pamela Galera</td>
<td>Principal Project Planner</td>
<td>Anaheim Community Services</td>
</tr>
<tr>
<td>Carol Gomez</td>
<td>Planning &amp; Rules Manager</td>
<td>SCAQMD</td>
</tr>
<tr>
<td>Naomi Gruenthal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chris Herre</td>
<td></td>
<td>Dept. of Transportation</td>
</tr>
<tr>
<td>Gary Hildabrand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Luanna Huber</td>
<td>Director, Corporate Citizenship</td>
<td>Environment &amp; Conservation, TDM &amp; Bus. Integration</td>
</tr>
<tr>
<td>Alan Hudak</td>
<td>Park Svcs Superintendent</td>
<td>Anaheim Community Services</td>
</tr>
<tr>
<td>Bill Hunt</td>
<td></td>
<td>OCWD</td>
</tr>
<tr>
<td>Maridet Ibanez</td>
<td>OC Health Care</td>
<td>OC Health Care</td>
</tr>
<tr>
<td>Donald Jackson</td>
<td>Property Manager</td>
<td>Orange County Water District</td>
</tr>
<tr>
<td>JJ Jimenez</td>
<td>Planner</td>
<td>Anaheim Community Services</td>
</tr>
<tr>
<td>Linda Johnson</td>
<td>Principal Planner</td>
<td>Anaheim</td>
</tr>
<tr>
<td>Jayne Jones</td>
<td>Stake Holders</td>
<td>Stables</td>
</tr>
<tr>
<td>Scott Kelly</td>
<td>Asst Area Dir Public Affairs</td>
<td>Kaiser Permanente</td>
</tr>
<tr>
<td>Donna Kelly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kerry Kemp</td>
<td>Redevelopment Manager</td>
<td>Anaheim Community Development</td>
</tr>
<tr>
<td>John Kennedy</td>
<td></td>
<td>OCWD</td>
</tr>
<tr>
<td>Susan Kim</td>
<td>Senior Planner</td>
<td>Anaheim Planning Dept</td>
</tr>
<tr>
<td>Name</td>
<td>Position</td>
<td>City or Agency/Department</td>
</tr>
<tr>
<td>-----------------------</td>
<td>---------------------------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>Marie Knight</td>
<td>City of Orange</td>
<td></td>
</tr>
<tr>
<td>Jamie Lai</td>
<td>Anaheim</td>
<td></td>
</tr>
<tr>
<td>Jason Lambert</td>
<td>US Army Corps of Engineers</td>
<td></td>
</tr>
<tr>
<td>Steve Lang</td>
<td>MIG</td>
<td></td>
</tr>
<tr>
<td>Sjany Larson-Cash</td>
<td>Anaheim Community Services</td>
<td></td>
</tr>
<tr>
<td>Tanya LaSoya</td>
<td>Anaheim Conv, Sprts&amp;Entertainment</td>
<td></td>
</tr>
<tr>
<td>Jennifer Le</td>
<td>Orange Comm Development/Planning</td>
<td></td>
</tr>
<tr>
<td>Janet Lee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Penny Lew</td>
<td>Senior Civil Engineer</td>
<td>Orange County Public Works</td>
</tr>
<tr>
<td>Keith Linker</td>
<td>Principal Civil Engineer</td>
<td>Anaheim Public Works</td>
</tr>
<tr>
<td>Della Lisi</td>
<td>OC Health Care</td>
<td>OC Health Care</td>
</tr>
<tr>
<td>Seth Litchney</td>
<td>California Natural Resources Agency</td>
<td></td>
</tr>
<tr>
<td>Jeff Lutz</td>
<td>Anaheim Fire Department</td>
<td></td>
</tr>
<tr>
<td>Issis Macias</td>
<td>Anaheim Utilities Department</td>
<td></td>
</tr>
<tr>
<td>Carolyn Mamaradlo</td>
<td>OCTA</td>
<td></td>
</tr>
<tr>
<td>Sara Mathis</td>
<td>City of Anaheim</td>
<td></td>
</tr>
<tr>
<td>Jim Meyer</td>
<td>Stake Holders</td>
<td></td>
</tr>
<tr>
<td>Maryam Molavi</td>
<td>Dept. of Transportation</td>
<td></td>
</tr>
<tr>
<td>Tony Montenegro</td>
<td>Disneyland Resort Transportation &amp; Parking</td>
<td></td>
</tr>
<tr>
<td>Tom Morton</td>
<td>Anaheim Conv, Sprts&amp;Entertainment</td>
<td></td>
</tr>
<tr>
<td>Bill Naylor</td>
<td>Fullerton Recreational Riders</td>
<td></td>
</tr>
<tr>
<td>Steve Nelson</td>
<td>Southern California Edison</td>
<td></td>
</tr>
<tr>
<td>Thuy Nguyen</td>
<td>Fullerton Engineering Department</td>
<td></td>
</tr>
<tr>
<td>Carrie J. Nocella</td>
<td>Director Gov. Relations/Minority Bus.</td>
<td>Public Affairs</td>
</tr>
<tr>
<td>Kyndell Paine</td>
<td>Manager, Government Relations</td>
<td>Public Affairs</td>
</tr>
<tr>
<td>Douglas K. Park</td>
<td>Principal Trans Planner</td>
<td>Anaheim Public Works</td>
</tr>
<tr>
<td>Larry Pasco</td>
<td>Parks Manager</td>
<td>Anaheim Community Services</td>
</tr>
<tr>
<td>Chris Pena</td>
<td>Police Sergeant</td>
<td>Anaheim Police Department</td>
</tr>
<tr>
<td>Frank Peters</td>
<td>CDM Cyclist</td>
<td></td>
</tr>
<tr>
<td>Darren Rector</td>
<td>MIG</td>
<td></td>
</tr>
<tr>
<td>Mike Ressler</td>
<td>Buena Park Community Development</td>
<td></td>
</tr>
<tr>
<td>Margaret Riley</td>
<td>Buena Park-Parks, Rec &amp; Comm Ser</td>
<td></td>
</tr>
<tr>
<td>Thomas Rizzuti</td>
<td>Anaheim City School District</td>
<td></td>
</tr>
<tr>
<td>Janice Roosevelt</td>
<td>Anaheim</td>
<td></td>
</tr>
<tr>
<td>Joel Rosen</td>
<td>Buena Park Comm. Dev.</td>
<td></td>
</tr>
<tr>
<td>Todd Rudaitis</td>
<td>Sr. Fire Safety Specialist</td>
<td>Anaheim Fire Department</td>
</tr>
<tr>
<td>Sandra Sagert</td>
<td>Anaheim</td>
<td></td>
</tr>
<tr>
<td>Al Shaikh</td>
<td>Anaheim Utilities Department</td>
<td></td>
</tr>
<tr>
<td>Rick Shintaku</td>
<td>Anaheim Utilities Department</td>
<td></td>
</tr>
<tr>
<td>Lynn Smith</td>
<td>Anaheim Community Services</td>
<td></td>
</tr>
<tr>
<td>Mehdii Sobhani</td>
<td>Orange County Public Works</td>
<td></td>
</tr>
<tr>
<td>Anaheim Sporn</td>
<td>Anaheim Community Services</td>
<td></td>
</tr>
<tr>
<td>Steve Ticer</td>
<td>Resort Transportation &amp; Parking</td>
<td></td>
</tr>
<tr>
<td>Kenneth Tom</td>
<td>Manager Special Projects</td>
<td>Union Pacific Railroad</td>
</tr>
<tr>
<td>Joseph Vasil</td>
<td>Neighborhood Council</td>
<td></td>
</tr>
<tr>
<td>Mark Vukojevic</td>
<td>Anaheim Public Works</td>
<td></td>
</tr>
<tr>
<td>Gary Wahiquist</td>
<td>Public Affairs</td>
<td>Public Affairs</td>
</tr>
<tr>
<td>Tony Wang</td>
<td>Yorba Linda</td>
<td></td>
</tr>
<tr>
<td>Clayton Whisenant</td>
<td>Orange County Parks</td>
<td></td>
</tr>
<tr>
<td>Greg Woodside</td>
<td>OCWD</td>
<td></td>
</tr>
</tbody>
</table>
Anaheim Outdoors website address:  
www.anaheimoutdoors.net

Recommended websites:  
City of Anaheim Bike Share Program: www.anaheim.net  
Complete Streets: www.completestreets.org/  
OCTA Fourth District Bikeways Strategy: www.octa.net  
Rails to Trails: www.railstotrails.org  
Anaheim’s Green Resolution: www.anaheim.net/utilities  
Anaheim’s Tree Power: www.anaheim.net/utilities  
City of Anaheim Water Conservation Corner: www.anaheim.net
appendix F

ADA and Safety

Anaheim OUTDOORS
Connectivity Plan “IT’S YOUR BACKYARD”
Changes to ADA

Other Power-Driven Mobility Devices
Americans with Disabilities Act (ADA) Changes

- Two-tiered approach to mobility device rules
  - Wheelchairs
  - Other power-driven mobility devices
    - Range of devices not designed for mobility-impaired individuals
    - Includes Segways
- Final rules effective – 3/15/2011
QUESTIONS?

Mark Denny
OC Parks
(949) 923-3741
Mark.denny@ocparks.com

Other Power-Driven Mobility Devices
Resources

- www.americatrails.org
- www.ocparks.com
Policy Recommendations

- Electric-powered mobility devices are permitted on trails (except for single track trails).
  - Trail users must stay within authorized trail footprint
  - Single track trails do not provide adequate space
- Gas-powered mobility devices are not permitted on trails.
  - Existing Federal law and easements prohibit motorized vehicles for recreational use
  - Substantial fire risk and noise impact
Criteria for Trail Network Assessment

- Type, size, weight, dimensions and speed of the device
- Volume of pedestrian traffic
- Design and operational characteristics
- Evaluate if legitimate safety requirements can be established
- Evaluate if use of a device creates a substantial risk of serious harm to immediate environment or resources
OC Parks Compliance Steps

- Assess conditions and limitations of trails
  - Assess park trails, paved trails (e.g., Santa Ana River Trail)
  - Communicate to trail users
  - Gain compliance with progressive enforcement
- Make reasonable modifications to public access policies and procedures
- Post information on use of other power-driven mobility devices

Other Power-Driven Mobility Devices
Americans with Disabilities Act (ADA) Changes

• For wheelchairs:
  – Must be allowed anywhere pedestrians have access

• Other power-driven mobility devices:
  – Must be allowed same access as wheelchairs, unless:
    • Such use would fundamentally alter programs, services or activities
    • Create a direct threat or safety hazard
Getting to School Safely

By Walking — Crossing the Street

1. Walk to school with a group of kids and always have a responsible adult walk with you.
2. Always walk on the sidewalk if one is available.
3. If no sidewalk is available, walk facing the traffic.
4. The safest place to cross is at a street corner or intersection.
5. If you are 10 years old or younger, you need to cross the street with an adult. You should not cross by yourself. Ask an adult to tell you who can help you cross the street.
6. Before you step off the curb to cross the street, stop and look left-right-left to see if cars are coming. Do you know your left from your right? If you do, that is great! If you don't, here is a hint: when you hold your left hand up, your thumb and first finger will make the letter “L,” and that stands for “left.”
7. When no cars are coming, it is safe for you and an adult to cross. But look left-right-left as you do it, and hold the adult’s hand.

By Riding Your Bicycle

1. The best and smartest bicycle riders always wear their bicycle helmets! They know that bicycle helmets will keep their heads and brains safe. Are you one of the best and smartest riders?
2. Ask an adult to make sure that your helmet fits correctly. The helmet should fit low on your forehead so that two fingers fit between it and your eyebrows. Another way to check is to put the helmet on your head and look up. If you can’t see your helmet, it is too far back.
3. To ride safely, you need to know the rules of the road. Do you know what “the rules of the road” are for bicycles? If you don’t, then you should not ride in traffic or without an adult.
4. When you ride your bicycle, wearing a helmet helps to keep you safe. You should also wear bright colors during the day, and right before the sun rises or sets. This makes it easier for drivers to see you, and that helps to keep you safe, too.
5. Riding at night can be dangerous. If you have to ride your bicycle at night, you should ride with an adult. You should also have a white light on the front of your bicycle and a red reflector on the back. You can also get lights and reflective materials to put on your shoes, helmet and clothing. When light hits this material at night, it glows and makes it easier for a driver to see you!

6. Practice makes you more skilled at riding your bicycle. The more skilled you are at riding, the less likely you will be to crash. Practice riding skills in an empty parking lot or a place with no traffic. Practice such things as riding in a straight line, looking over your shoulder, signaling with your hands, and starting and stopping.
Responsible trail enthusiasts, both motorized and non-motorized, have much in common. They have an appreciation for our public lands and want to enjoy what our public lands have to offer.

In many parts of the country trails are open to and shared by equestrians, OHV riders, bicycle riders, runners and hikers. Trail sharing can and does work when people respect each other and work cooperatively to keep each other safe.

While it is important for people to respect each other on the trail, it is important to remember that equestrians are dealing not only with other trail enthusiasts’ personalities, they also are working with horses whose temperaments are as individual as our own. Horses’ natural instincts can influence their behaviors and affect the way they react to circumstances encountered on the trail.

For these reasons, it is important that equestrians know their horses well enough that they are confident that they will be able to control their horses when they encounter other trail enthusiasts who are allowed on the trail.

Conversely, OHV riders, bicycle riders, runners and hikers must understand that “equestrian only” trails must be respected for the safety of both the horse and rider. These trails offer the opportunity for horsemen to acclimate their horses to basic trail conditions without encountering “unknown threats” that can trigger the horse’s natural instinct of flight.

When young or inexperienced horses encounter new conditions on the trail like OHVs, bicycles, runners and hikers, and even certain scents, the flight response can end with disastrous results for the horse or rider.

When equestrians on well-trained horses and other responsible trail enthusiasts meet each other on the trail the encounters can be enjoyable social exchanges if the groups understand how to work together to keep the encounters safe.

These basic guidelines will help ensure that meeting on the trail will be a safe and enjoyable experience:

**Guidelines for all trail enthusiasts:**

**Common Courtesy**
- Respect all trail restrictions and use only trails open to your mode of transportation.
- Be considerate of others on the road or trail.
- When traveling on shared use trails, continually watch for other types of recreationists.
- Slow down when sight lines are poor.
- Keep speeds low around other recreationists.
- Keep noise and dust down.
- Keep your ears open – no ear buds for an IPod or MP3. Listening to headphones or ear buds can make it difficult to hear and communicate with other recreationists. In some areas it is illegal to operate vehicles or bikes with both ears covered.
- Keep pets under control. Some trails require dogs to be leashed. Be familiar with local rules.
Yielding

- Yield the right of way to those passing you from behind or traveling uphill.
- Motorized vehicles yield to mountain bikes, runners, hikers, and horses.
- Mountain bikes yield to runners, hikers and horses.
- Runners and hikers yield to horses.

Guidelines for equestrians on shared trails:

- Be sure you can control your horse and it has been exposed to other trail recreational uses before riding on shared use trails.
  - Cooperate with local OHV and bicycle riders to expose your horse to vehicles in a gradual manner in a safe environment.
- Be alert and aware of the presence of other trail enthusiasts. If possible, pull to the side of the trail when you hear oncoming OHVs or bicycles.
- At trailheads or staging areas, park vehicles and secure stock in a manner that provides a safe distance between the horses and passing traffic.
- Be prepared to let other trail enthusiasts know what needs to be done to keep you, the horse, and other trail enthusiasts safe when you meet on the trail.
- Less experienced horses and riders should ride behind more “trail-wise” horses and riders.
- If you are “ponying” a horse, go slow and never take a loose horse on the trail.

Guidelines for OHV riders when encountering horses on the trail:

- Pull to the side of the trail far enough for horses to pass safely as soon as you see horses.
- Pull to the downhill side of the trail if possible since horses tend to perceive unknown threats on the uphill side as predators.
- Shut off your motor as soon as possible and remove your helmet. The horse will be more likely to recognize you as a human.
- Speak to the oncoming rider and horse in a friendly, relaxed tone.
- Horsemen may pull to the side of the trail at a safe distance if they hear an OHV approaching but this **does not** necessarily mean it is safe for you to ride by. Stop and wait for instructions from the horseman.
• Ask the horseman how he/she would like to proceed.
  o The horseman will know his/her horse and how the horse reacts to other trail enthusiasts.
  o The horseman may ask you to stay put and ride past you.
  o The horseman may ride to the side of the trail and ask you to ride or push past them.
• If you ride by a horse, keep your rpm’s low and steady and your sound as low as possible. Sudden movements or sounds can startle horses.
• Be alert – be aware and on guard for oncoming traffic.

Guidelines for bicyclists when encountering horses on the trail:
• Pull to the side of the trail far enough for horses to pass safely as soon as you see horses.
• Pull to the downhill side of the trail if possible since horses tend to perceive unknown threats on the uphill side as predators.
• Speak to the oncoming rider and horse in a friendly, relaxed tone. Remove your helmet if it conceals part of your face. The horse will be more likely to recognize you as a human.
• Horsemen may pull to the side of the trail a safe distance if they hear a bicycle approaching but this does not necessarily mean it is safe for you to ride by. Stop and wait for instructions from the horseman.
• Ask the horseman how he/she would like to proceed.
  o The horseman will know his/her horse and how the horse reacts to other trail enthusiasts.
  o The horseman may ask you to stay put and ride past you.
  o The horseman may ride to the side of the trail and ask you to ride or push past them.
• If you ride by a horse, do so at a slow, steady pace and avoid making any sudden movements or sounds that might startle the horse.
• Be alert – be aware and on guard for oncoming traffic.

Guidelines for other non-motorized recreationists when encountering horses on the trail:
• Hikers and trail runners should always stop and step to the side of the trail when they meet horses on the trail.
• Step to the down-hill side of the trail.
• Speak to the rider and horse in a friendly, relaxed tone.
• Keep pets under control.
Rules of the Road for Riding Safely

✔ Ride in a straight line, single file.

✔ Go with the traffic flow. Ride on the right in the same direction as cars.

✔ Obey all traffic signs and signals.

✔ Ride with both hands on the handlebars except when signaling a turn or stop.

✔ Stop and look left-right-left for traffic before entering a street.

✔ Walk your bike across an intersection.

✔ Stay alert – use your eyes to look for things that could make you fall, like potholes, cracks, pebbles, or wet leaves.

✔ Stay alert – use your ears to listen for traffic. Don’t wear earphones while riding.

✔ Watch for parked cars and cars pulling out or into parking spaces or driveways.

✔ Check your equipment. Make sure your bike tires are properly inflated and that the brakes work.

Don’t forget your bicycle helmet. Wear it flat on your head and buckled!
Be sure children do not show off on their bikes. Hands should be kept on the handlebars, only one person should be on the bike at a time, and jumping curbs should not be allowed.

Record the serial numbers of your children’s bikes and keep them with the sales receipt and a photograph of the bike. Check with local police or the National Bike Registry (NBR) at 800-848-BIKE about bike registration programs. NBR recently partnered with NCPC to help return stolen bikes to their rightful owners.

Mark children’s bikes with an engraver to deter thieves and to help in identifying and returning a stolen bike. Use a unique number, such as your driver’s license number.
Riding a bicycle is more than just basic transportation—it can be a fun and exciting hobby. When your children ride, remember that they’re not alone. They share the road with cars, trucks, pedestrians, and other cyclists. Since accidents can turn a bicycle adventure into a bicycling tragedy, here are some tips to help make your children’s ride a safe one.

What You Can Do

- Tell children to wear helmets. Studies have shown that using a bicycle helmet can reduce head injuries by up to 85 percent. Select a helmet that has a snug, but comfortable fit. Look for the helmet labels that show they are recommended by either the American National Standards Institute, www.ansi.org, or the Snell Memorial Foundation, www.smf.org.

- Make sure children wear proper clothing. Clothing should be light in color and close fitting to avoid being caught in the bicycle’s moving parts. Also, be sure books and other loose items are carried in a backpack.

- Teach children to obey the rules of the road. These include all traffic signs, signals, and road markings. Teach children to ride on the right side of the street in single file and to use proper hand signals. Tell children never to hitch rides by grabbing onto moving cars or trucks.

- Teach children that before entering a street or intersection to check for traffic and always look left-right-left. Walk the bike across busy streets at corners or crosswalks.

- Children’s bikes should display both front and rear reflectors. They should ride only in familiar areas and only during the daylight hours.

- Make sure children’s bikes are adjusted properly. Check to make sure that all parts are secure and working. The handlebars should be firmly in place and turn easily. The wheels should be straight and secure. Check tires for pressure, bulges, and cracks.

- Teach children to always lock up their bike. A U-lock should be used, securing both the front wheel and the frame to a stationary object such as bike rack. Help children practice locking up their bike.
A list of tips for adults on staying safe

- Don’t walk or jog early in the morning or late at night when the streets are deserted.
- When out at night, try to have a friend walk with you.
- Carry only the money you’ll need on a particular day.
- Don’t display your cash or any other inviting targets such as pagers, cell phones, hand-held electronic games, or expensive jewelry and clothing.
- If you think someone is following you, switch directions or cross the street. If the person continues to follow you, move quickly toward an open store or restaurant or a lighted house. Don’t be afraid to yell for help.
  - Try to park in well-lighted areas with good visibility and close to walkways, stores, and people.
  - Make sure you have your key out as you approach your door.
  - Always lock your car, even if it’s in your own driveway; never leave your motor running.
  - Do everything you can to keep a stranger from getting into your car or to keep a stranger from forcing you into his or her car.
- If someone tries to rob you, give up your property—don’t give up your life.
- If you are robbed or assaulted, report the crime to the police. Try to describe the attacker accurately. Your actions can help prevent someone else from becoming a victim.
- If you feel you are in immediate danger, Get Away and call 9-1-1
- For suspicious circumstances, call the Anaheim Police Department at (714) 765-1900.
Bike Riding Dangers

Pretend you are the person riding the bicycle at the bottom of the picture. Can you see all the things that put you at risk as a bicyclist? There are 13 bike riding dangers in all.
Find the Hazards Worksheet – Answers and Explanations

1. Male bicyclist is riding his bicycle against the flow of traffic. The law requires bicyclists to ride with the flow of traffic. This is safer for several reasons:
   a. Motorists look for and expect all traffic to move in one direction and may not see bicyclists riding the wrong way.
   b. Traffic signs and lights face traffic flowing in one direction only. Bicyclists going against traffic will be unable to read and follow traffic signs and signals.
   c. The reaction time of motorists is greatly reduced when bicyclists ride toward vehicles.

2. Male bicyclist is not wearing a helmet. Research shows that up to 90 percent of fatal bicycle crashes are the result of head trauma. A properly worn and certified bicycle helmet cushions and protects the head from injurious impacts with hard surfaces such as asphalt and concrete.

3. Male bicyclist is driving with only one hand on the handle bar. Riding a bicycle with one hand limits the reaction time to hazards and dangerous traffic situations. Bicyclists should always keep both hands on the handle bars except when signaling. Books, packages, and other items should be carried in a backpack or basket.

4. Car backing out of driveway. Bicyclists should stop or slow down at every intersection (including driveways) and watch for traffic. Parked vehicles can begin to move at any time. Look and listen to detect any movement from nearby vehicles. Do not cross in front of or behind an occupied vehicle without communicating your intentions through the use of hand signals and eye contact with the driver.

5. Oncoming train. Stop, look, and listen for oncoming trains and let them pass before crossing the tracks. Use eyes and ears to detect the status of nearby trains. A nearby train will
typically send a warning whistle and crossing areas are usually marked clearly with flashing red lights and signs.

6. Railroad tracks. When crossing train tracks, either walk or ride your bicycle across with your wheels perpendicular to the tracks to avoid getting tires caught.

7. Pedestrian crossing street with packages. Bicyclists should always be observant of pedestrians. Pedestrians are often unpredictable, as in this example, and sometimes neglect to search for traffic before entering the street.

8. Opened door of parked car. Bicyclists should always scan parked vehicles for passengers who might open doors. When passing parked cars, allow enough room between the bicycle and vehicles to avoid opening doors. Always scan behind for oncoming traffic before swerving into another lane.

9. Loose dog. If a dog approaches while cycling, yell loudly “No!” or “Go home!” and keep control of your bicycle. If the dog threatens to bite or attack, get off your bicycle, put it between you and the dog, and back away slowly. Do not try to outrun or hit the animal.

10, 11, and 12. Sewer grate, pot hole, and leaves/debris. Bicyclists need to dodge surface hazards without swerving into the path of oncoming traffic. Bicyclists constantly need to search ahead for obstacles and hazards, steering around or dodging them when necessary.

13. Car crossing the path of the girl bicyclist. Motorists sometimes cross in front of bicyclists and then either stop or slow down to turn. This often occurs when the motorist does not see the bicyclist or misjudges the bicyclist’s speed. Bicyclists must always BE VISIBLE, BE SEEN. Wear bright-colored clothing, helmet, reflectors, and lights, especially at night. In high-traffic areas, bicyclists should ride slowly to improve their ability to react to the actions of motorists. Cycle defensively and be prepared to use your brakes at all times.
Bike Safety Quiz

1. If the street is crowded with cars, you should ride on the sidewalk.  
   TRUE   FALSE
2. Only wear safety helmets when you feel like it.  
   TRUE   FALSE
3. Bikes must obey the same rules that cars do.  
   TRUE   FALSE
4. In an intersection, be sure to check both ways before riding through it.  
   TRUE   FALSE
5. On hot summer days it’s a good idea to ride barefoot.  
   TRUE   FALSE
6. It’s safe to ride through construction areas.  
   TRUE   FALSE
7. You should bicycle against the traffic, as if you were walking.  
   TRUE   FALSE
8. Nighttime is the best time to ride your bike.  
   TRUE   FALSE
9. If a friend needs a ride, let them ride on your handlebars.  
   TRUE   FALSE
10. You are considered a “driver” when you ride in the street.  
    TRUE   FALSE
11. Ride as far to the right-hand side of the street as possible.  
    TRUE   FALSE
12. When you come to an intersection and want to make a turn, make a hand signal to let other drivers know, look to the right and left, ahead and behind.  
    TRUE   FALSE
13. If the brakes are not working, jump off the bike when you want to stop.  
    TRUE   FALSE
14. When a traffic light is yellow, it means hurry up before the light turns red!  
    TRUE   FALSE
15. When you have a flat tire you should take off the tire and ride on the rim.  
    TRUE   FALSE
16. Lock up your bike even when you are only leaving for a minute.  
    TRUE   FALSE
17. Wearing dark clothes helps you to be seen by other drivers.  
    TRUE   FALSE
18. Ride as close as you can to parked cars.  
    TRUE   FALSE
19. Carry books or packages in a backpack or basket to leave your hands free to be on the handlebars.  
    TRUE   FALSE
20. After an impact, a bike helmet loses its ability to absorb shock.  
    TRUE   FALSE

Being Safe With Signs

DIRECTIONS: Fill in the blanks with the answers provided. Some answers are used more than once.

1. You have ridden up to #2. This sign tells you that you cannot make a ________ ________.
2. You have ridden up to #1. You must ________.
3. You are walking and see #7. This warns you of a ________ _________. You must ________, look and ________.
4. You see sign #3. It means NO ________ allowed. You must take another ________.
5. You have come to a traffic signal showing #4. You may ________.
6. You come to triangular sign with a red border. This is a ________ sign and is # _______. You must yield ________ of ________ to the other ________.
7. You see sign #8. You should watch for traffic entering your path from the ________.
8. You are riding along and come to a one way street. This is sign # ______ and means DO NOT ________.

ANSWERS: yield #6 walk right enter route way railroad traffic stop bicycles turn listen #5
The A B C Quick Check

A is for air:
✓ Check the air pressure, spin the wheels and make sure the tires are not worn out.

B is for brakes:
✓ Check to make sure coaster brakes will stop the bike by spinning the back wheel and applying the brake. If the bike has hand brakes check to see that the levers don't hit the handlebars when squeezed. Lift one tire up at a time and spin it; squeeze the levers to see if the tire stops. The brake pads should be clean, straight and contact the rims properly.

C is for Cranks, Chain, and Cogs:
✓ Grab the crank arms and try to wiggle side to side. There should be no movement. Spin the pedals and cranks to see if the chain drives the rear wheel. The chain should look like metal not rust or black gunk. If the bike has gears check to make sure the gear levers and derailleurs (gear-changing mechanism) work to shift the chain between gears.

Quick Refers to the Quick Release:
✓ Some bikes have quick releases on the wheels or the seat post. Check to make sure they are tight and closed properly.

Check:
✓ After making sure the seat and handlebars are tight and the proper height, have the child ride the bicycle around the parking lot and check that everything works well.

Used with permission: League of American Bicyclists
Illustrations: Justin Short and Tom Frinch, used with permission from Bicycle Transportation Alliance (BTA)
1. Measure Head
First, start with the right size helmet. Helmet size is based on head size, not age. Use a measuring tape to measure around the head, just above the eyebrows.

The helmet should cover the forehead. Only two of the child’s fingers should fit in the space between the eyebrow and the helmet.

2. Adjust Pads
Adjust the foam pads inside the helmet for a snug fit. The helmet should move the skin on the forehead when rocked back and forth.

3. Adjust Straps
Ear straps should form a “V” just below each ear. Always buckle the chin strap. Only one finger should fit between the strap and the chin.

4. Test Fit
When rocked back and forth, the helmet should move only one inch in either direction. If it moves too much, you may need to tighten straps or use thicker pads.

- Helmets should be approved by CPSC or ASTM.
- Always wear a helmet while riding a bike, skateboard, scooter, or skates.

It’s the law for everyone under age 18 in California.

STOCK # 60152
1. Mídase la cabeza
Primero, comience con un casco del tamaño correcto. El tamaño del casco se basa en el tamaño de la cabeza, no en la edad de la persona. Use una cinta de medir para medir alrededor de la cabeza por encima de las cejas. El casco debe cubrir la frente. Sólo debe de haber un espacio de dos dedos entre el casco y la ceja.

2. Ajuste los cojines
Ajuste los cojines de espuma dentro del casco para que tenga un buen ajuste. El casco debe mover la piel de la frente al mover el casco para adelante y para atrás.

3. Ajústese los tirantes
Los tirantes deben formar una “V” justo debajo de la oreja. Abróchese siempre el tirante de la barbilla. Solamente un dedo debe caber entre el tirante y la barbilla.

4. Pruebe el ajuste
Cuando usted lo mueve para adelante y para atrás, el casco debe poder moverse solamente una pulgada en cada dirección. Si se mueve demasiado, usted tendrá que ajustar los tirantes o usar cojines más gruesos.

- Los cascos deben ser aprobados por CPSC o ASTM.
- Use siempre el casco al andar en bicicleta, skateboard, o monopatín.

*Es la ley para toda persona menor de 18 años en California.*