BICYCLE TRANSPORTATION PLAN UPDATE

City of Lincoln, California

May, 2018

Prepared for:

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INTRODUCTION

PURPOSE

The purpose of the City of Lincoln's 2018 Bicycle Transportation Plan (BTP) is to update the City's proposed future bicycle network, including the City's bicycle capital improvement list, with the goal of providing a safe, enjoyable, and connected bicycle network for all users within the City of Lincoln. As a dual purpose, this plan demonstrates compliance with the California Bicycle Transportation Act and provides the City of Lincoln a resource document for pursuing discretionary and competitive funding for bicycle infrastructure improvements.

Specifically, the 2018 Bicycle Transportation Plan accomplishes the following:

- updates all required information elements of the California Bicycle Transportation Act;
- updates the City's existing bicycle network to include street and bicycle improvements completed since the previous update in 2012;
- updates the City's bicycle facility design guidelines to reflect the latest national/regional guidance;
- determines the efficacy of the 2012 bicycle capital improvement program and revises these recommendations based on input from the public combined with a comprehensive assessment of bicycle connectivity relative to existing and future development patterns;
- establishes a future bicycle network that connects all areas of significance in the city with facilities and routes that are more in line with the majority of potential bicyclist's comfort levels;
- establishes bicycle demand, mode shift and planning level cost opinions to inform bicycle capital improvement cost-effectiveness for funding prioritization; and,
- establishes a one-stop data source to facilitate the development of future state/federal grant funding applications for bicycle improvements by the City of Lincoln.

As stated above, the 2018 ***Bicycle Transportation Plan*** addresses all element required under the California Bicycle Transportation Act (BTA). These requirements are shown in **Table 1**.

STUDY AREA

The City of Lincoln, California, is located in Placer County, approximately 10 miles north of the City of Roseville and 25 miles north of the City of Sacramento. State Route 65 and State Route 193 bisect the city north and south, and east and west, respectively. The City is approximately 19 square miles in area; however, this plan includes the City limits and its "sphere of influence", including Village 1 and Village 7 and other Special Use Districts in the City's General Plan. This plan will provide a blueprint for developing a bikeway system that includes both on-street and off-street facilities as well as support facilities and programs in line with both current and future mobility needs.

The City of Lincoln study area is presented on **Figure 1**.

Figure 1 – Study Area

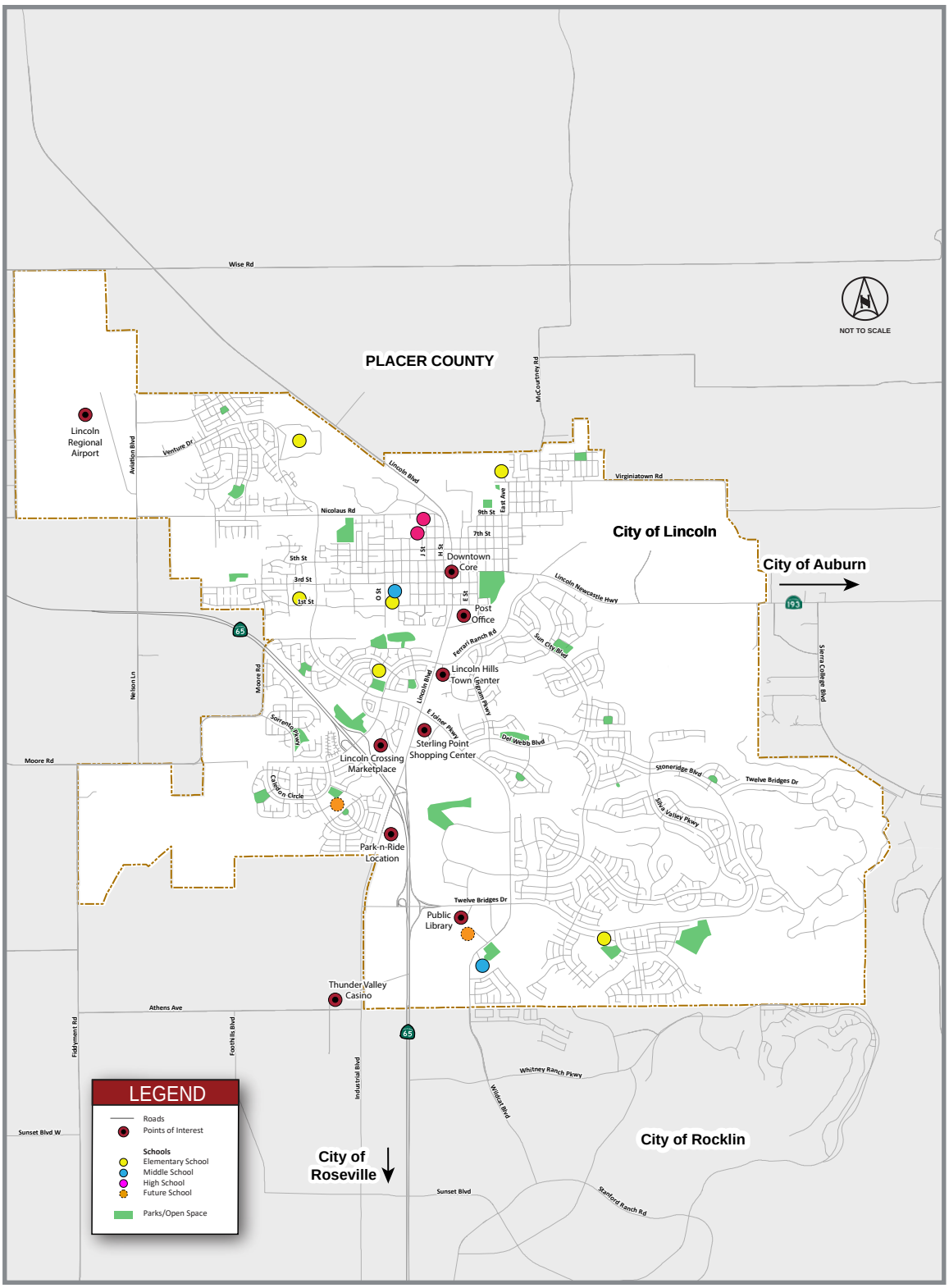


Table 1 – *California Streets and Highways Code Section 891.2 Required Elements*

REQUIRED BICYCLE TRANSPORTATION PLAN ELEMENT		REPORT REFERENCE PAGE
A.	Estimated number of existing and future bicycle commuters	22-23
B.	Map and description of land use and development patterns	22-23; Appendix D
C.	Map and description of existing and proposed bikeways	13-14; 37; Appendix E
D.	Description of bicycle parking facilities	13-14; 17
E.	Map of transit routes and multi-modal connections	16
F.	Description of facilities for changing and storing clothes and equipment	17
G.	Description of bicycle safety and education programs	17
H.	Description of citizen and community participation	33-35
I.	Description of consistency with transportation, air quality, and energy conservation plan	7
J.	Cost summary of proposed bicycle projects for Class I, II, and III priorities	50
K.	Description of past expenditures and future financial needs for bicycle facilities	13; 49-50

PLANNING AND DESIGN STANDARDS

Bikeway planning and design in California rely on the guidelines and design standards established by the California Department of Transportation (Caltrans) and supporting guides as documented in:

- Chapter 1000; *Bicycle Transportation Design*, contained in the Highway Design Manual, 6th Edition (California Department of Transportation, 2017) with supporting Chapters 200, 300, and 400.
- California Manual on Uniform Traffic Control Devices, 2014 Edition, Revision 2
- Caltrans, Design Information Bulletin Number 89, *Class IV Bikeway Guidance*
- Federal Highway Administration (FHWA), *Separated Bike Lane Planning and Design Guide*, 2015
- American Association of State Highway and Transportation Officials (AASHTO), *Guide for the Development of Bicycle Facilities*, 2012, Fourth Edition
- National Association of City Transportation Officials (NACTO), *Urban Bikeway Design Guide*, 2014
- Massachusetts Department of Transportation (MDOT), *Separated Bike Lane Planning and Design Guide*, 2015

Where possible, it may be desirable to exceed the minimum standards. These guidelines cover basic concepts. The HDM Chapter 1000 contains more detailed standards and guidance and should be followed. The City may also reference the AASHTO Guide, and the NACTO Urban Bikeway Design Guide. Caltrans has supported the NACTO from a memorandum dated August 20, 2013 for Bicycle and Pedestrian Facility Design Flexibility. The NACTO addresses more recently developed bicycle design treatments and techniques. It provides options that can help create "complete streets" that better accommodate bicyclists. Many treatments in the NACTO guide are compatible with Caltrans HDM policies and demonstrate new and innovative solutions for the varied urban settings across the country. The vast majority of treatments illustrated in the NACTO guide are either allowed or not precluded from the CA-MUTCD. In addition, non-compliant traffic control devices may be piloted through the CA-MUTCD experimentation process.

This section also references the uniform standards and specifications for traffic control devices under the 2014 California Manual on Uniform Traffic Control Devices (CA-MUTCD). Given that they are not currently adopted by the FHWA MUTCD or CA MUTCD, a number of recommended devices currently being implemented in California are considered experimental.

Recommended devices that are currently not adopted by the MUTCD or Caltrans appear to be promising improvements in bicycle and pedestrian access and safety as they have been widely used in Europe and experimented within the US. Any jurisdiction wishing to use these treatments should follow the appropriate experimental procedures. Some of the more commonly used devises, such as colored bike lanes, have been given blanket interim approval for use in California. For these, the City only needs to notify Caltrans that it will use these. Bike boxes and colored treatments of shared lane markings are approved for experimentation by the Federal Highway Administration (FHWA). To conduct these experiments, the City would need to follow the guidelines set forth by the FHWA here: https://mutcd.fhwa.dot.gov/condexper.htm and to the California Traffic Control Device Committee following their guidelines set forth in Section 1A.10 of the CA MUTCD.

Appendix A provides the *Bicycle Facilities Recommended Class Types and Policies* memorandum prepared for the *2018 Bicycle Transportation Plan*. The following highlights design recommendations specific to the plan update, including the following bicycle facilities:

- **Class I Bike Path:** Provides a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross-flow minimized. Caltrans standards call for Class I bikeways to have a minimum of 8 feet of pavement (10 feet preferred) with 2 food graded shoulders on either side. These bikeways must also be at least 5 feet from the edge of a paved roadway.
- **Class II Bike Lane:** Provides a restricted right-of-way designated for the exclusive or semi-exclusive use of bicycles with through travel by pedestrians and motorists permitted. Caltrans' standards require a six-inch striped lane with a 4-5-foot paved shoulder for one-way bike travel on a street or highway.
- **Class III Bike Route:** Provides for shared use with pedestrians and/or motor vehicle traffic within the same right-of-way and is designated with signs only indicating "Bike Route". Class III bike routes are appropriate where restricted right-of-way would make a Class II facility infeasible.
- **Class IV Bike Lanes:** Provides a separated bike lane, or "protected bike lane", with a physical barrier between the bike lane and the adjacent travel lanes, parking lanes, and sidewalks. Class IV bike lanes may be one-way or two-way. Separated bike lanes can be separated from motor vehicle traffic by raised medians, concrete curbs, landscaping, on-street parking, bollards, flexible delineator posts, or by a change in elevation between the bike lane and travel lane.

The following facilities or treatments were considered due to the potential for increasing bicyclist visibility, safety, and comfort along bicycle facilities:

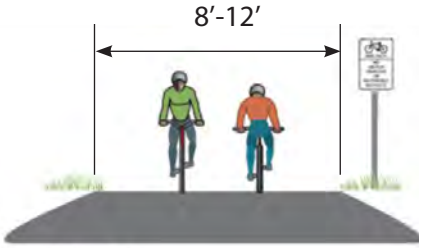
- **Buffered Bike Lanes (Without On-Street Parking):** Provides additional protection and can be considered a Class IV facility, referred to in this plan as a "Class IV-Lite" facility. Painted buffers at least 2-feet in width can be used to narrow travel lanes, which slows traffic, and are most appropriate on wide, busy streets, where physically separating the bike lanes with protected vertical separation is undesirable for cost, operations, or maintenance reasons. Class IV-Lite facilities are useful in providing additional separation between cyclists and motor vehicles where traditional Class IV facilities are not feasible, and where Class II facilities are not adequate.
- **Buffered Bike Lanes (With On-Street Parking):** Provides a painted divider between the bike lane and the adjacent travel lane. Buffers at least 3-feet in width can be used to narrow travel lanes, which slows traffic, and are most appropriate on wide, busy streets, where physically separating the bike lanes with protected vertical separation is undesirable for cost, operations, or maintenance reasons. Double buffered bike lanes provide a painted divider on both the travel lane and the parking lane.

- **Colored Bike Lanes:** Provides increased visibility for cyclists through the use of green paint on the width of the bike lane. Colored bike lanes can be implemented at intersections to enhanced bicycle visibility at points of conflict with vehicles, or can be used as a continuous treatment spanning the extended length of a bike lane corridor.

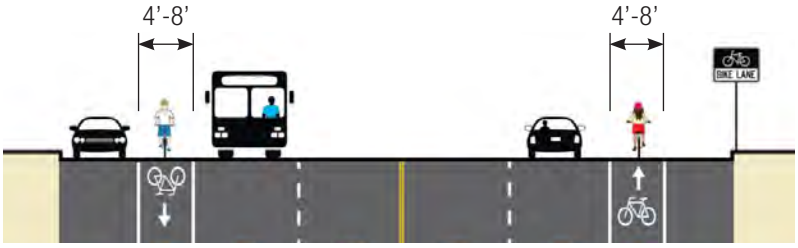
The following bicycles facilities were considered due to the potential for increasing bicyclist visibility, safety, and comfort at intersections.

- **Bikeway Markings:** Continuing marked bicycle facilities at intersections (up to the crosswalk) ensures that separation, guidance on proper positioning, and awareness by motorists are maintained through these potential conflict areas. Colored bike lanes can be implemented at intersections to enhanced bicycle visibility at points of conflict with vehicles.
- **Bike Pockets and Boxes:** Provides bicyclists with a safe and visible way to get ahead of queuing traffic during the red signal phase.

Cross-sections for bicycle facilities Class I, II, III, and IV-Lite, as referred to in this plan, are provided below, with recommended lane widths.

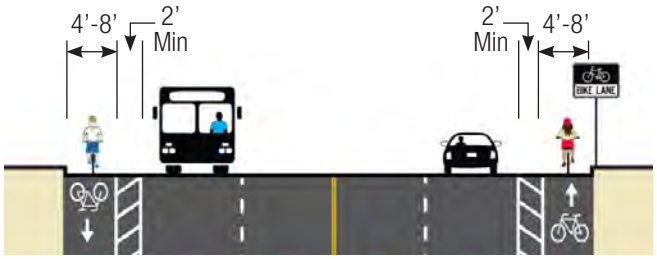


Class I – Bike Path



Class II – Bike Lane

Class III – Shared Bike Route



Class IV-Lite – Buffered Bike Lane without On-Street Parking

CONSISTENCY WITH OTHER PLANS

This Plan ensures consistency with the following planning documents:

- 2012 City of Lincoln Bicycle Transportation Plan
- 2017 PCTPA Regional Bikeway Plan/Network
- Sacramento County Bicycle Master Plan
- SACOG 2016 Metropolitan Transportation Plan and Sustainable Community Strategy for 2035
- City of Lincoln General Plan
- Village 1 Specific Plan
- Village 7 Specific Plan
- Placer County Sunset Industrial Area + Placer Ranch Development Draft Study and DEIR
- Placer County Bikeway Master Plan
- Revised Twelve Bridges Specific Plan
- Twelve Bridges Golf Cart Circulation Plan
- The City of Lincoln Neighborhood Electric Vehicle (NEV) Transportation Plan
- Lincoln Crossing Specific Plan
- General Development Plan and Golf Cart Transportation Plan for Del Webb – Lincoln Hills
- Gladding Parkway EIR

COMMUNITY PARTICIPATION

Community participation is a vital component of this plan for obtaining input on existing bicycling facilities, potential roadways for improvement to accommodate bicycles, and the type of support facilities or programs needed to improve bicycling within the City of Lincoln. The development of the plan was based on an advocacy planning approach between City staff, interested organizations, and citizens. The public outreach approach of this plan includes the following:

- A thorough review of existing plans and studies to determine what exists today.
- Direct input from the City staff about what development is planned for the future and what will be needed to accommodate that growth.
- A public presentation and workshop to incorporate citizen and community input.
- A refinement process that takes into account the following bikeway planning criteria
  - **Safety –** The system should provide the highest level of safety feasible.
  - **Coverage –** The system should provide balanced access from the City's activity centers for commuting and recreation purposes.
  - **Connectivity –** The system should provide bikeway connections to major activity centers, multi-modal transfer locations, regional connections, and should integrate with golf cart and NEV facilities as appropriate.
  - **Use –** The proposed system should reflect use levels that are commensurate with the intended level of investment
  - **Standards –** The system should reflect the appropriate Class of bicycle facility consistent with Caltrans' design standards.

A Public Workshop was held on Thursday, December 7, 2018 at the City of Lincoln. A second Public Workshop was held on Thursday, April 19, 2018, to share results of the plan. Community participation is discussed in more detail in a following "Community Participation" section.

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GOALS, OBJECTIVES, AND POLICIES

The inclusion of goals, objectives, and policies for this plan are intended to provide specific direction on the necessary actions involved in planning, designing, funding, and constructing bicycle facilities in the City of Lincoln. The following information relies on an understanding of the relationship between the proposed bikeway system, key issues facing implementation of specific routes, and the requirements of local, state, and federal funding programs. The goals and policies are organized by topic areas that relate to specific implementation issues. The topic areas include:

- Overall System;
- Land Development;
- Commuting;
- Safety Education;
- Environmental Considerations
- Funding.

The purpose of organizing this section by topic area is to provide City staff, decision makers, and citizens with clear and concise policy direction and guidance on how to implement the bicycle facilities proposed in this plan. Each topic area addressed below includes an overall goal, measurable objective, and policies with specific action statements related to the development of specific facilities or programs within the City of Lincoln.

OVERALL SYSTEM

The following goal and policy statements express the philosophy behind this plan and the proposed system of bikeways. The statements stem from the City's desire to provide residents and visitors with a connected bikeway/path system that can accommodate both commute and recreational trips throughout the City.

GOAL 1: Provide a well-connected bikeway system within the City of Lincoln to improve the quality of life for all residents and visitors.

Objective: *Construct priority bikeways identified in the proposed system map and provide for the maintenance of both existing and new facilities.*

Policies

1.1 Prepare and maintain a Bikeway Master Plan that identifies existing and future needs, and provides specific recommendations for facilities and programs including adequate provisions for bicycle and pedestrian use, golf carts, and neighborhood electric vehicles (NEVs) to, within, and from the City of Lincoln.

1.2 Require all bikeways to conform to design standards contained in the latest version of the Highway Design Manual, Chapter 1000: Bikeway Planning and Design, Caltrans, unless otherwise established by the City.

1.3 Consider a proposed route's importance in providing access and connectivity to adjacent bicycle facilities and destinations when recommending bike routes for implementation.

1.4 Coordinate with Placer County, City of Rocklin, and City of Roseville regarding the implementation of the proposed system of bikeways.

1.5 Provide bicycle connections that allow for regional bike travel to and from the City of Lincoln.

1.6 Integrate bicycle planning with other community planning, including land use and transportation planning.

1.7 Ensure proposed Class II bike lanes are consistent with the City of Lincoln NEV Transportation Plan.

1.8 As funding allows, implement the proposed bikeway system in this Bikeway Master Plan in a cost effective manner.

LAND DEVELOPMENT

As shown in the population and employment growth expectations, the City of Lincoln has significant planned development over the next 20 years. Proposed development projects should adhere to the policy statements below regarding access, mobility, and support facilities for bicyclists and pedestrians.

GOAL 2: Include bicycle facilities in all appropriate development projects to facilitate on-site circulation for bicycle and pedestrian travel, on-site bicycle parking, and connections to the proposed system of golf cart and NEV facilities.

Objective: *Maximize the number of daily trips made by bicycling to and from new development projects within the City of Lincoln.*

Policies

2.1 Require new development projects to reserve the right-of-way for multi-use trails shown in the proposed system of bikeways.

2.2 Meet the requirements of the Americans with Disabilities Act when constructing facilities contained in the proposed system, where applicable.

2.3 Provide pedestrian/bicycle crossings at appropriate intervals along new roadways that will adequately serve new large-scale commercial office, industrial development, and residential development.

2.4 Provide one mile of pedestrian/bicycle trails per 2,500 population (Amended Public Facilities Element 2008).

2.5 Adhere to specific policies contained within adopted plans and specific plans relating to the design, implementation, and function of bikeways and pedestrian facilities within the City of Lincoln.

2.6 Encourage new commercial development to provide bicycle and pedestrian access to surrounding residential areas.

2.7 Encourage new commercial development to place required bike racks near entrances for employees and customers.

COMMUTING

Commuters that bicycle to the City can represent a larger percentage of total commute trips if a comprehensive network of interconnected bicycle facilities is developed. This plan proposes to implement such a system as defined by the following goal and policy statements.

GOAL 3: Increase bicycle trips to work to reduce vehicle congestion, improve air quality, conserve energy use, and improve individual physical fitness.

Objective: *Develop a system of bikeways that provides direct routes between residential areas and to major employment centers.*

Policies

3.1 Provide connections to the proposed system from all existing and future transit facilities and transferpoints.

3.2 Encourage employers to install and/or maintain support facilities such as bicycle racks, personal lockers, and showers at appropriate locations to promote bicycle use.

3.3 Employers should encourage employees to consider bicycling as an alternative mode for commuting to and from employment centers.

3.4 Employers should be actively involved in implementing Ordinance No. 604B relating to the City's Ridesharing Program. The provisions of Ordinance 604B provide for the following:

- Identifies a "Major project controller" as an employer or common work location with 100 or more employees working at a single site for at least 20 hours per week.
- Identifies a "Transportation Control Measure (TCM) Coordinators" as an individual assigned by the Placer County Transportation Commission to assist member jurisdictions in complying with the provisions of trip reduction ordinances.
- Requires an annual commute survey as part of the annual reporting requirement on ridesharing.
- Identifies a "new project" as a project which would allow a use or number of uses that, individually or collectively, would employ 100 or more employees at one common work location.
- Identifies a "project expansion" as an existing project which would allow a use or uses that, individually or collectively, after expansion, may both (1) generate employment for 100 or more employees and (2) increase the total number of employees at the common work location by twenty percent or more from the applicant's base-line employment.
- States that assistance in transportation plan preparation will be provided by the City through the TCM Coordinator who will be provided to the City by the Placer County Transportation Commission.
- Identifies that the Rideshare Coordinator will be responsible for conducting an annual commute survey as part of the employer's annual reporting requirements.

SAFETY EDUCATION

Safety education is an important aspect of increasing bicycle use. If bicyclists or potential bicyclists perceive that the bikeway system is unsafe, they will be discouraged from using it. Therefore, the following goal and policy statements are intended to improve the user's knowledge of how to use the bikeway system safely.

GOAL 4: Educate all residents of the City of Lincoln about how to use bikeway and trail facilities safely.

Objective: *Improve bicycle safety in the City of Lincoln by providing a system of connected routes that minimize conflicts with autos, golf carts, NEVs and pedestrians.*

Policies

4.1 Play an active role in educating residents about bicycle and pedestrian safety in conjunction with public and private schools and civic organizations.

4.1 Use available collision data to monitor bicycle collisions and locations and target education programs and/or improvements in those locations.

ENVIRONMENTAL CONSIDERATIONS

Bicycle facilities are generally considered to benefit the environment because their use reduces demand for motorized travel and promotes beneficial lifestyle changes. Nevertheless, the construction of specific bikeway improvements may adversely affect the physical environment. The following goal and policy statements have been developed to avoid and minimize potential impacts to the environment.

GOAL 5: Avoid adverse environmental impacts associated with the implementation of the proposed system.

Objective: *Mitigate potentially significant impacts to a level of less than significant.*

Policies

5.1 Conduct site-specific environmental review consistent with the California Environmental Quality Act for individual bicycle projects as they advance to the implementation stage of development.

5.2 Solicit and consider community input in the design and location of bicycle facilities that connect to neighborhoods.

5.3 Consider the effect on other transportation facilities such as travel lane widths, turn lanes, on-street parking, and on-site circulation when planning and designing on-street bikeways.

FUNDING

To obtain the funding required to implement the proposed system, the City of Lincoln must take advantage of funding sources at the state and federal level. It will also require a commitment of local funding.

GOAL 6: Acquire sufficient funding to construct the proposed system within the next 20 years.

Objective: *Maximize the amount of local, state, and federal funding sources for bicycle facilities that can be used by the City of Lincoln for the implementation of the proposed system.*

Policies

6.1 Periodically update current information regarding regional, state, and federal funding programs for bicycle facilities along with specific funding requirements and deadlines.

6.2 Where feasible, consider joint grant applications with other agencies, such as the City of Roseville, City of Rocklin, and/or Placer County, for state and federal funds.

EXISTING CONDITIONS

This section of the Plan documents existing bicycle infrastructure and facilities in the City of Lincoln to determine the availability and status of safe and connected bicycle travel for City residents. Information concerning existing bicycle infrastructure and facilities was collected from the 2012 BTP, the City of Lincoln, the Public Workshop (December 7, 2017), and a site-visit conducted in November 2017.

PAST EXPENDITURES ON BICYCLE FACILITIES

Since the adoption of the 2012 BTP, the following bikeway improvements have been implemented:

- Bicycle racks installed on Lincoln Blvd in the downtown area
- Class II lanes on 3rd Street from the western terminus to D Street
- Class II lanes on O Street from 1st Street to 9th Street/Nicolaus Road
- Class II lanes on Sorrento Parkway from Ferrari Ranch Road to Moore Road
- Class II lane (East side only) on Moore Road from Sorrento Parkway to dead end at the Lincoln Bypass
- Removed Class II lanes on Eastridge Drive from Twelve Bridges Drive to Dinis Cottage (to allow for on street parking)

EXISTING BICYCLE FACILITIES

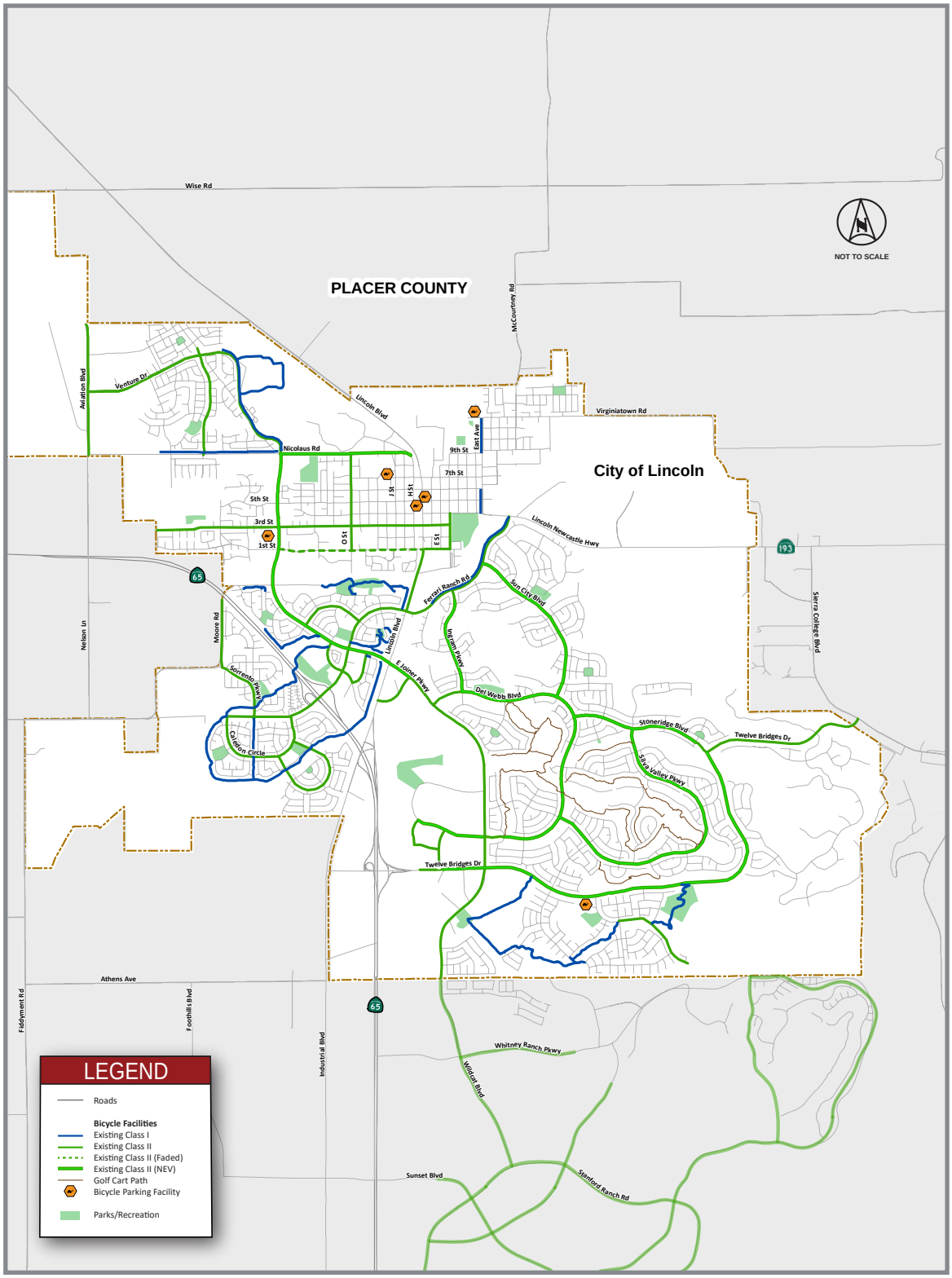
The existing roadway network in the City of Lincoln consists of 50.54 centerline miles of City owned roadways and approximately 5 miles of state owned facilities that traverse the City. Inclusive of the recent improvements described above, of the City's existing roadway centerline miles, 19% provides Class II bike lanes. A significant portion of these roadways are local residential streets with posted speeds of 25 miles per hour. In addition, a significant portion of Class II facilities have parallel neighborhood electric vehicle (NEV) lanes approximately 8-feet in width. The 19% of Class II network translates to approximately 198,415 linear feet (37.5 miles) of roadway providing bi-directional Class II facilities within the City of Lincoln.

There are currently 127,310 linear feet (or 24 miles) of Class I bicycle facilities within the City of Lincoln. Approximately 42% of Class I facilities are located in the Del Webb community area, and 31% are located along or parallel to Joiner Parkway and Ferrari Ranch Road, including the Class I trail along the Auburn Ravine. Other disjointed Class I facilities are located in north Lincoln along Joiner Parkway/Venture Drive and south Lincoln near Twelve Bridges Drive. Additionally, there is a disconnected Class I facility along East Avenue between 12th Street and McBean Park Drive.

Although 1st Street east of Joiner Parkway has Class II bicycle lanes, the lane striping (white paint) is difficult to observe for both motorist and cyclists, and is therefore not considered to provide adequate Class II connectivity. For several roadways without bi-directional bike lanes, such as Ferrari Ranch Road east of Lincoln Boulevard, and Joiner Parkway/ Venture Drive north of Nicolaus Road/9th Street, Class I facilities are provided. Additionally, several roadways are designated as Class III bicycle routes due to the presence of "share the road" signs, such as along East Avenue between the existing Class I facility.

The City of Lincoln's existing bikeway network is shown on **Figure 2.** Existing bicycle parking facilities are located at key downtown locations, as shown on **Figure 1**.

Figure 2 – Existing Bikeways



REGIONAL CONNECTIONS

The City of Lincoln is bordered by unincorporated Placer County. The City of Roseville and the City of Rocklin are located to the south with primary access from Highway 65, Industrial Boulevard, and Joiner Parkway. The Town of Loomis and the City of Auburn are located short distances east of Lincoln with primary access from Highway 193. Designated bikeways providing regional connections to surrounding communities do not currently exist. New proposed connections that have potential as regional connections include Industrial Boulevard, Nicolaus Road, and SR 193. Proposed system connections are discussed in subsequent sections of this plan.

The Town of Loomis recently completed its 2010 Bicycle and Trails Master Plan. Except for sidewalks located in the downtown area of Loomis, a trail system within the Town does not currently exist. The Town of Loomis currently has no Class I bike paths, 6.5 miles of Class II bike lanes, and no designated Class III routes. The Town of Loomis, through its Bicycle Transportation and Trails Plan, is committed to creating a more bicycle-friendly community with connections to adjacent jurisdictions. The 2008 City of Roseville Bicycle Master Plan provides for bicycle connections to Sierra College Boulevard with connections to Twelve Bridges Drive and ultimately SR 193.

MULTI-MODAL CONNECTIONS

Multi-modal connections in the City of Lincoln and South Placer County are especially important due to Lincoln's distance from other communities and barriers to bicycle travel such as the lack of existing continuous bicycle facilities and high-speed roadways. A transit center currently exists at Third and F Streets serviced by Lincoln Transit and Placer County Transit. The various transit services that serve South Placer County are described below. Maps of the various service areas and key transfer points within the City of Lincoln are provided n **Figure 3.**

Lincoln Transit

Lincoln Transit currently operates two fixed routes known as the downtown Circulator and Lincoln Loop. Both routes operate on one-hour headways (at each stop, buses arrive every hour). Each bus is equipped with two bike racks. The Downtown Circulator operates in Historic Downtown Lincoln and along Highway 65 with stops near City Hall (6th Street), downtown retail centers, Safeway Center, Twelve Bridges Library, Twelve Bridges Medical Center, and Kaiser Permanente. The service begins each morning at the Lincoln Transfer Point at Third and F Streets. The Circulator connects daily with the Lincoln Loop and the Placer County Transit's Lincoln/Rocklin/Sierra College route.

The Lincoln Loop operates throughout the city with stops at several schools, parks, community centers, and major activity centers. The route beings daily at the southwest corner of Venture and lakeside Drives. It continues to the Lincoln Transfer Point at Third and F Streets and then to destinations throughout the city.

Lincoln Transit Dial-A-Ride (DAR) is a complimentary curb-to-curb Para-transit service for the general public. DAR operates in the city limits of Lincoln on a reservation basis.

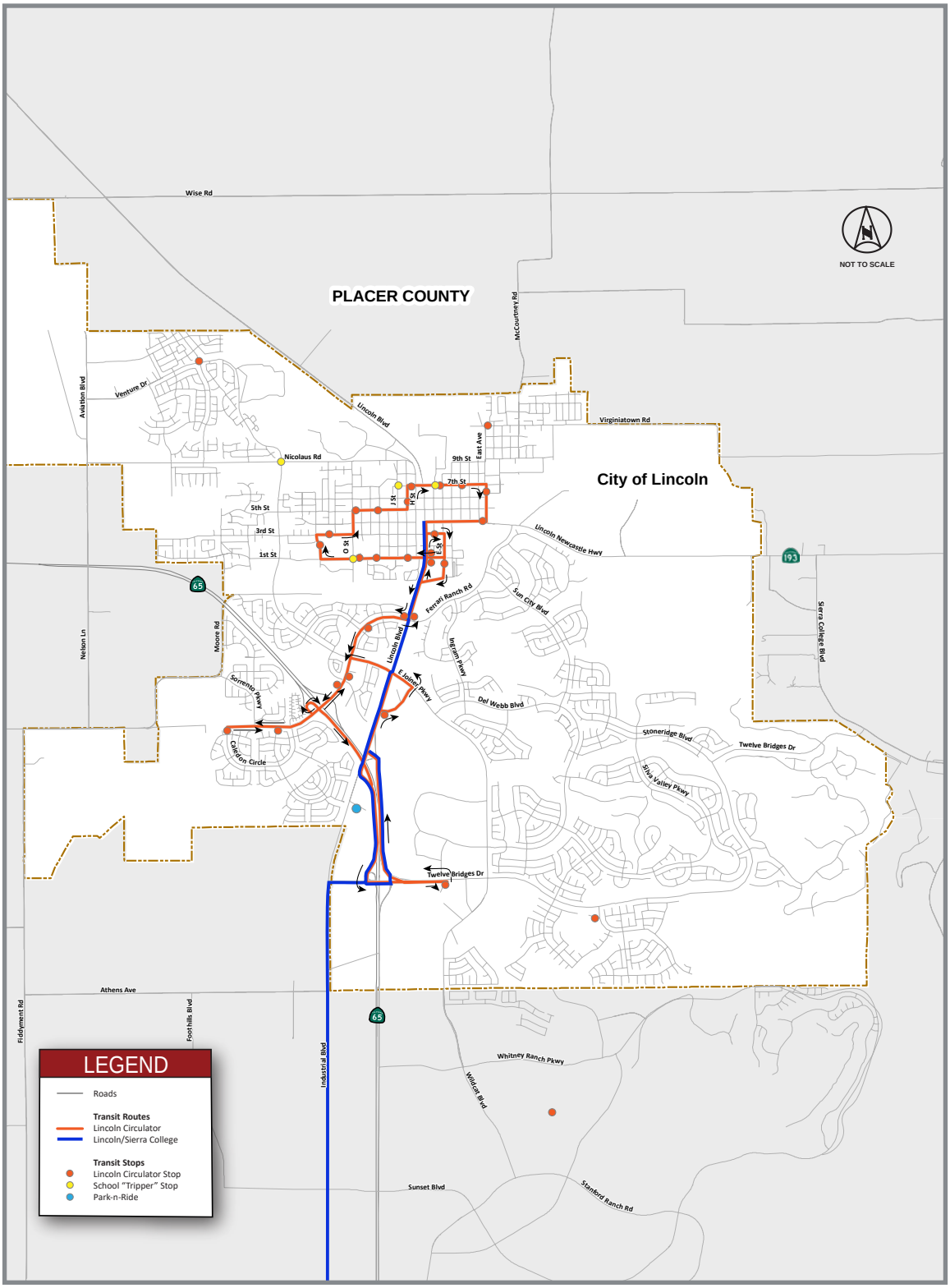
Placer County Transit (PCT)

Transit riders in Placer County can make a connection to Lincoln's Historic Downtown and points in between at the Twelve Bridges Transfer Point via the Lincoln Transit Downtown Circulator. Transfers are free. The Taylor Road Shuttle operated by PCT stops at the Penryn Park and Ride near King Road and the Loomis Park and Ride located at I-80 and Horseshoe Bar Road. Additional information is located at *www.placer.ca.gov/transit.*

Roseville Transit

Roseville Transit offers local fixed-route service throughout Roseville but does not serve the City of Lincoln. Riders can transfer to PCT at Thunder Valley to reach destinations within the City of Lincoln. Additional information is located at *www.roseville.ca.us/transit.*

Figure 3 – Transit Services



SUPPORT FACILITIES

Bikeway support facilities include physical infrastructure designed to accommodate or promote the use of bicycles. Examples include bicycle racks, bicycle lockers, restrooms, and shower facilities. A windshield survey of major shopping centers, schools, parks, and employment centers found bike racks located at most major commercial centers in the City. The Lincoln Transit District provides a rack that holds two bikes on the front of all buses. The City of Lincoln provides bike parking at City Hall, 600 Sixth Street. In addition, all recent shopping centers have bike racks as a condition of their approval. Several newer projects in the downtown core have street tree grates with tree guards that qualify as informal bike racks for bicyclists. Support facilities are important because potential riders can be discouraged from riding if they think that their bicycle may be stolen, vandalized or if sufficient facilities are not provided to make bicycling convenient, particularly for commute purposes.

In many cities and counties, the installation of secure bicycle parking is required as part of local transportation system management plans or the zoning code. For example, Yuba City, CA requires the provision of bicycle racks as part of their zoning code while similar requirements apply in the City of Roseville as part of their transportation systems management program. The City of Lincoln, as part of their rideshare program, requires that bicycle parking facilities be made available at the request of any tenant or employee participating in the program whose primary mode of commuting is by bicycle. Parking facilities are not currently required as part of the City of Lincoln zoning code.

BICYCLE SAFETY

Collision data was provided by the California Highway Patrol Statewide Integrated Traffic Records System (SWITRS) statistics, and by the City of Lincoln, for the five-year period between 2012 and 2016. According to these two datasets, approximately 25 collisions involving a bicyclist occurred in the City of Lincoln during that five-year period. **Figure 4** presents the location of bicycle collisions during this five-year period. **Table 2** presents bicycle collision severity by year. **Table 3** presents bicycle collisions by severity type.

No bicyclist fatalities were reported between 2012 and 2016; however, as shown in **Table 2** and **Table 3**, 23 of the 25 collisions resulted in bicyclist injury. Additionally, the roadways with the highest number of collisions were Lincoln Boulevard (4 collisions), McBean Park Drive (3 collisions), and Ferrari Ranch Road (3 collisions), and approximately half of all bicycle collisions occurred at intersections.

Bicycle Safety Programs

A summary of safety programs that have been implemented within the City is described below:

- Bicycle Rodeos - are designed to teach the rules of the road and safe riding practices to school age bicyclists.
- Bicycle Helmet Enforcement Program - is conducted by the Lincoln Police Department and focuses on issuing warnings to students who do not ride with a bicycle safety helmet. A warning card that includes discounts for purchasing bicycle helmets is given to violators.
- Bicycle Helmet Distribution Program - Approximately 250 helmets are given away annually to local students.
- Bicycle Safety Instruction - Lincoln Police Department conducts bicycle safety instruction at local elementary schools at the beginning of the school year.
- Helmet Safety Program – Sponsored by UC Davis Trauma Center Outreach Program., this program provides instruction on helmet safety.

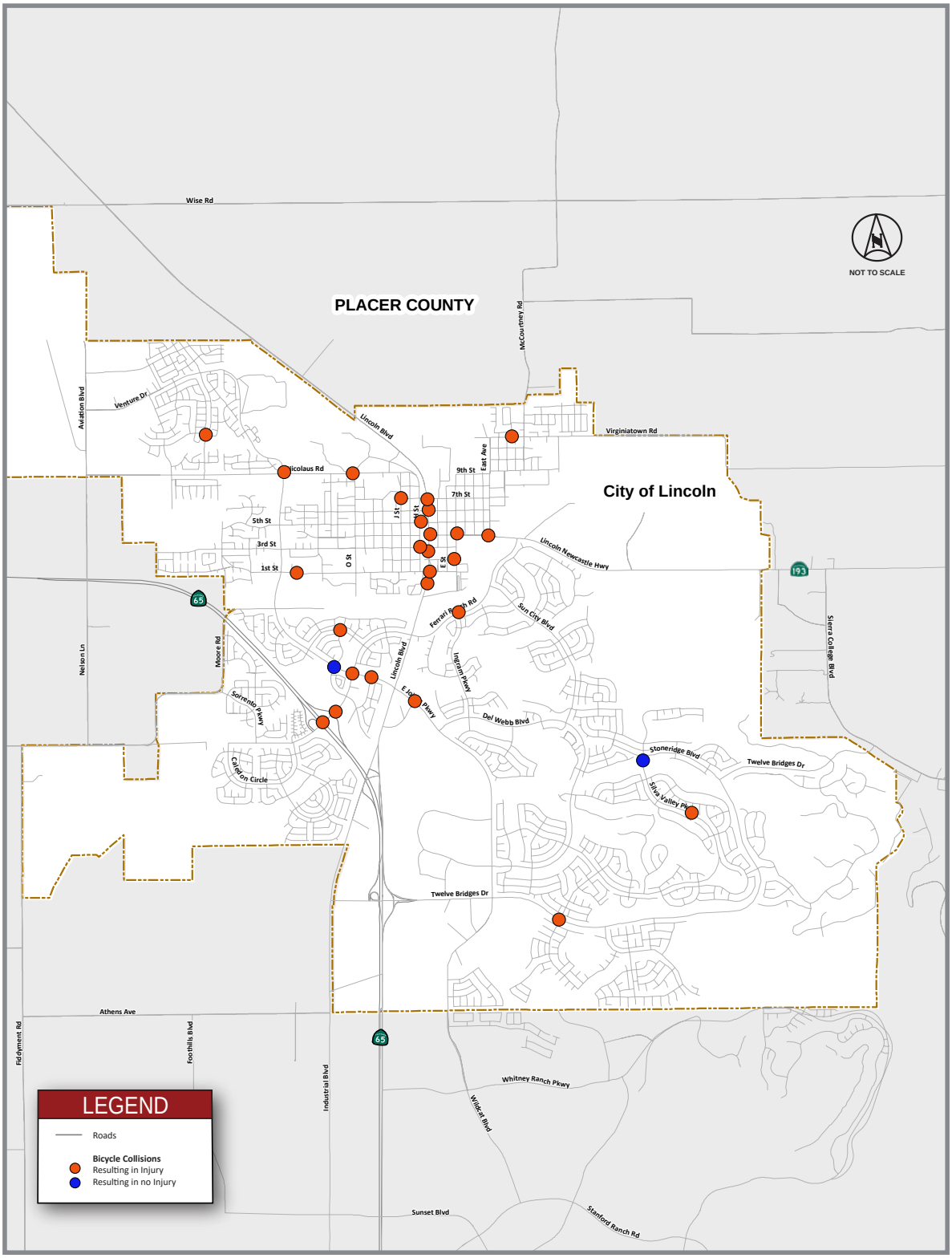
Table 2 – *Bicycle Collision Severity by Year*

YEAR	INJURY (COMPLAINT OF PAIN)	INJURY (OTHER VISIBLE)	PROPERTY DAMAGE ONLY	GRAND TOTAL
2012	1	2		3
2013	4		1	5
2014	2	3		5
2015	4	4		8
2016	1	2	1	4
TOTAL	**12**	**11**	**2**	**25**

Table 3 – *Bicycle Collision Frequency by Location*

INTERSECTION	PRIMARY ROAD	SECONDARY ROAD	INJURY (COMPLAINT OF PAIN)	INJURY (OTHER VISIBLE)	PROPERTY DAMAGE ONLY	GRAND TOTAL
No	1st Street	Joiner Parkway		1		1
	2nd Street	D Street	1			1
	5th Street	H Street		1		1
	12th Street	Buckboard Lane		1		1
	Lincoln Boulevard	6th Street		1		1
		7th Street	1			1
		Lincoln Boulevard 96		1		1
		Lincoln Boulevard 270		1		1
	McBean Park Drive	A Street		1		1
		Lincoln Boulevard		1		1
	Nicolaus Road	Joiner Parkway	1			1
	Spring Valley Parkway	Blue Heron Loop	1			1
	Stoneridge Boulevard	Spring Valley Parkway			1	1
Yes	1st Street	Lincoln Boulevard	1			1
	3rd Street	H Street		1		1
	7th Street	J Street	1			1
	Danbury Drive	Groveland Lane	1			1
	Danbury Drive	Ingram Parkway	1			1
		Joiner Parkway	1			1
		Route 65			1	1
	Groveland Lane	Joiner Parkway	1			1
	Joiner Parkway	Stanmark Drive	1			1
	Lakeside Drive	Floradale Way		1		1
	McBean Park Drive	D Street		1		1
		Danbury Drive	1			1
TOTAL			**12**	**11**	**2**	**25**

Figure 4 – Bicycle Collisions



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ANALYSIS OF BICYCLE DEMAND

The objective of analyzing bicycle demand is to identify existing bicycle ridership levels and travel patterns, along with projected future use and possible methods for stimulating additional ridership. This section provides information about City of Lincoln projections for population and employment and their influence on bicycle travel demand.

EXISTING MAJOR ACTIVITY CENTERS

One purpose of a BTP is to provide facilities that connect residential areas to employment, commercial, educational, and recreational centers. These facilities support bicycle travel demand for both commuter and recreational trip purposes. Major activity centers in the City of Lincoln include regional commercial areas such as Sterling Pointe Shopping Center, Lincoln Hills Town Center, Lincoln Crossing Marketplace, Joiner Parkway Corridor, and the downtown core. In addition, employment centers, schools, parks, the Thunder Valley Casino and Lincoln Regional Airport serve as potential destinations for bicyclists. Major activity center locations are identified in **Figure 1**.

POPULATION AND EMPLOYMENT TRENDS

The following discussion contains estimates of existing and future projections of population and employment levels to determine trends and how they affect demand for bicycle facilities.

Existing Population

In 2011, the City of Lincoln had an estimated total population of 43,144 persons. This number rose to 43,572 by 2012, increasing to 45,675 in 2016. **Table 4** shows a comparison of population estimates for the City of Lincoln and several surrounding cities and Placer County.

Table 4 – *Population Estimates and Comparisons (2015 to 2016)*

JURISDICTION	2015	2016	% CHANGE
City of Lincoln	45,038	45,675	1.4%
Auburn	13,785	13,858	0.5%
Loomis	6,648	6,690	0.6%
Rocklin	59,727	60,509	1.3%
Roseville	126,327	128,276	1.5%
Placer County	366,280	370,571	1.2%

Source: US Census, 2012-2016 ACS Data

Existing Employment

The City of Lincoln has a labor force of approximately 36,048 persons and employment of approximately 17,203 persons over 16 years of age. The current unemployment rate for the City of Lincoln is 7.0%, compared with Loomis Town (7.6%), Auburn (7.6%), Rocklin (7.3%), and Roseville (6.5%) (Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates).

BICYCLE RIDERSHIP LEVELS

Bicycle ridership levels are not easily measured or projected for an entire City without extensive data collection efforts. Bicycle ridership varies widely among different jurisdictions. For jurisdictions with similar populations, land use density, and bicycle system quality, bicycled mode split typically varies from one to three percent. The City of Lincoln General Plan provides for increased land use densities in many areas and villages that will contribute the attractiveness of non-auto modes of travel such as bicycling. The transition to a denser land use pattern could increase the City's bike mode split from 0.7 percent to between one and three percent.

Existing Ridership Levels

A common term used in describing demand for bicycle facilities is "mode split." Mode split describes the percentage of people selecting a certain means of transportation within a jurisdiction. Mode split is often used in evaluating commuter alternatives such as bicycling, where the objective is to increase the "split" or percentage of people selecting an alternative means of transportation. From the 2012-2016 Census data, mode split information is available for home-to-work trips for the City of Lincoln. City of Roseville, and City of Rocklin. This information is presented in **Table 5**.

Table 5 – *Mode Split for Home-to-Work Trips*

Mode	Lincoln	Rocklin	Roseville
Drove alone	78.6%	81.6%	79.5%
Carpooled	10.5%	7.1%	8.8%
Public transportation (no taxicab)	1.0%	1.1%	1.1%
Walked	0.6%	1.0%	1.9%
Bicycle	0.7%	0.6%	0.8%
Taxicab, motorcycle, or other means	1.5%	1.2%	1.0%
Worked at home	7.0%	7.5%	7.0%

Source: US Census, 2012-2016 ACS Data

As shown in **Table 5**, less than one percent of home-to-work trips for the cities of Lincoln, Rocklin, and Roseville are made by bicycle.

FUTURE LAND USE AND DEVELOPMENT

The City of Lincoln future development map and approved development list is presented in **Appendix D**. The City of Lincoln development includes the following approved residential projects:

1. Twelve Bridges Villages 1, 2, 10, 11, 12, Education Foundation
2. Lakeside 6: Phase 2, 7 & 8
3. Senior Living at Lincoln in Twelve Bridges
4. Meadowlands
5. Magnolia Village
6. Independence

7. Village 1
    a. Epick 1, 2 & 3
    b. La Bella Rosa
    c. Walkup Ranch
    d. Turkey Creek Estates
    e. Hidden Hills
    f. Enclave
8. Fullerton Ranch
9. Cypress Meadows/Cresleigh Grove
10. E. 10th Street
11. Riverwalk Villas
12. Crocker Knoll
13. Village 7
14. Joiner Ranch
15. Summerset Assisted Living Facility – Downtown
16. Lincoln Crossing Village 11

The City of Lincoln development includes the following approved commercial projects.

1. Quick Quack Car Wash
2. America's Tire
3. Les Schwab Tires
4. tarbucks
5. Hotel in Parkway Pointe
6. Property north of Fire Station on Joiner Parkway
7. Northeast corner of Lincoln Boulevard and Ferrari Ranch Road
8. Twelve Bridges Commercial
9. Twelve Bridges Employment-Center
10. Village 1 – southeast corner of Highway 193 and Oak Tree Lane
11. Village 7 Commercial

FUTURE POPULATION AND EMPLOYMENT

Future population and employment 20-year forecasts have been developed for both the City of Lincoln and the City's Sphere of Influence. Future forecasts assume the development of the seven villages in the Sphere of Influence (Village 1 through 7 were annexed in 2017). The City of Lincoln anticipates a future population of approximately 55,857 persons and approximately 16,461 employees, as presented in **Table 6**.

Table 6 – *Future Population and Employment Forecasts*

BOUNDARY/AREA	FUTURE POPULATION	FUTURE EMPLOYMENT
Lincoln	55,857	16,461
Lincoln SOI	26,414	7,760
Total City and SOI	**82,271**	**24,221**
Village 1	*5,823*	*155*
Village 2	*348*	-
Village 3	*391*	-
Village 4	*67*	-
Village 5	*3,394*	*966*
Village 6	*3,245*	*377*
Village 7	*8,081*	*1,003*
Total Village	***21,349***	***2,501***

As shown, the City's population is expected to almost double within the next 20 years. The City's employment is expected to increase by approximately 7,000 persons within the next 20 years. It is anticipated that bicycle ridership levels will increase accordingly.

BICYCLE CONNECTIVITY

The City of Lincoln has a significant amount of existing bicycle infrastructure, with Class II bicycle lanes on approximately 19% of existing local roadway infrastructure, and an additional 12 miles of Class I bicycle facilities within the City limits. However, due to high vehicular speeds on major roadways, incomplete or discontinuous bicycle infrastructure, and a lack of adequate bicycle protection at some intersections, many existing bicycle routes may not be suitable for all user-types, nor do they necessarily provide complete connections to key destinations throughout the City.

In addition, the City of Lincoln is characterized by many residential areas that are served by low-speed (< 25 mph) local streets. However, many of these residential areas are encircled by high speed, major roadways – some of which provide no bicycle infrastructure. High vehicular speeds and discontinuous bicycle routes can create stressful conditions for a majority of potential bicycle users. These conditions can preclude "true" city-wide bicycle connectivity which in turn discourages bicycling as a viable mode option relative to the automobile. As such, the level of stress experienced by a cyclist becomes the determining factor of bicycle infrastructure connectivity, rather than the presence of the infrastructure itself.

Level of traffic stress, as defined by the Mineta Transportation Institute's ***Low-Stress Bicycling and Network Connectivity*** report (2012), provides thresholds of cyclist tolerance for on-street bicycle facilities as determined by the roadway conditions of the shared route. A "level of traffic stress" (LTS) score between 1 and 4 is then assigned to the roadway, where 1 represents a level of stress that the majority of the cycling public, including children, can tolerate, and 4 represents a level of stress tolerated only by those characterized as "strong and fearless" cyclists. For purposes of this study, roadways classified as LTS 1 or 2 reflect low-stress facilities for which the vast majority of the City's population would feel comfortable bicycling on. Conversely, a roadway with an LTS score of 3 or 4 reflects medium to high-stress conditions that only a small percentage of accomplished cyclists would feel at ease using.

The ultimate goal is to improve the overall connectivity of the low-stress bicycle network. The greater the access to the low-stress network and the greater number of origin and destination pairs it serves, the more attractive bicycling becomes as a modal option for a larger segment of the population.

LEVEL OF STRESS CRITERIA

Criteria used to determine the LTS score for roadways include the following:

- Road width (number of through travel lanes)
- Vehicular traffic speed limit
- The presence and width of a parking lane (diagonal or parallel)
- The presence and width of a bicycle lane

Criteria used to determine the LTS score for intersections include the following:

- Right-turn vehicular channelization (right-turn pocket length or shared through/right-turn lane)
- The presence and location of a bicycle lane pocket at the intersection
- Signalized traffic control or side-street stop-control

Table 7 presents the LTS category summaries as defined by the Mineta Transportation Institute.

Table 7 – *Level of Traffic Stress Categories*

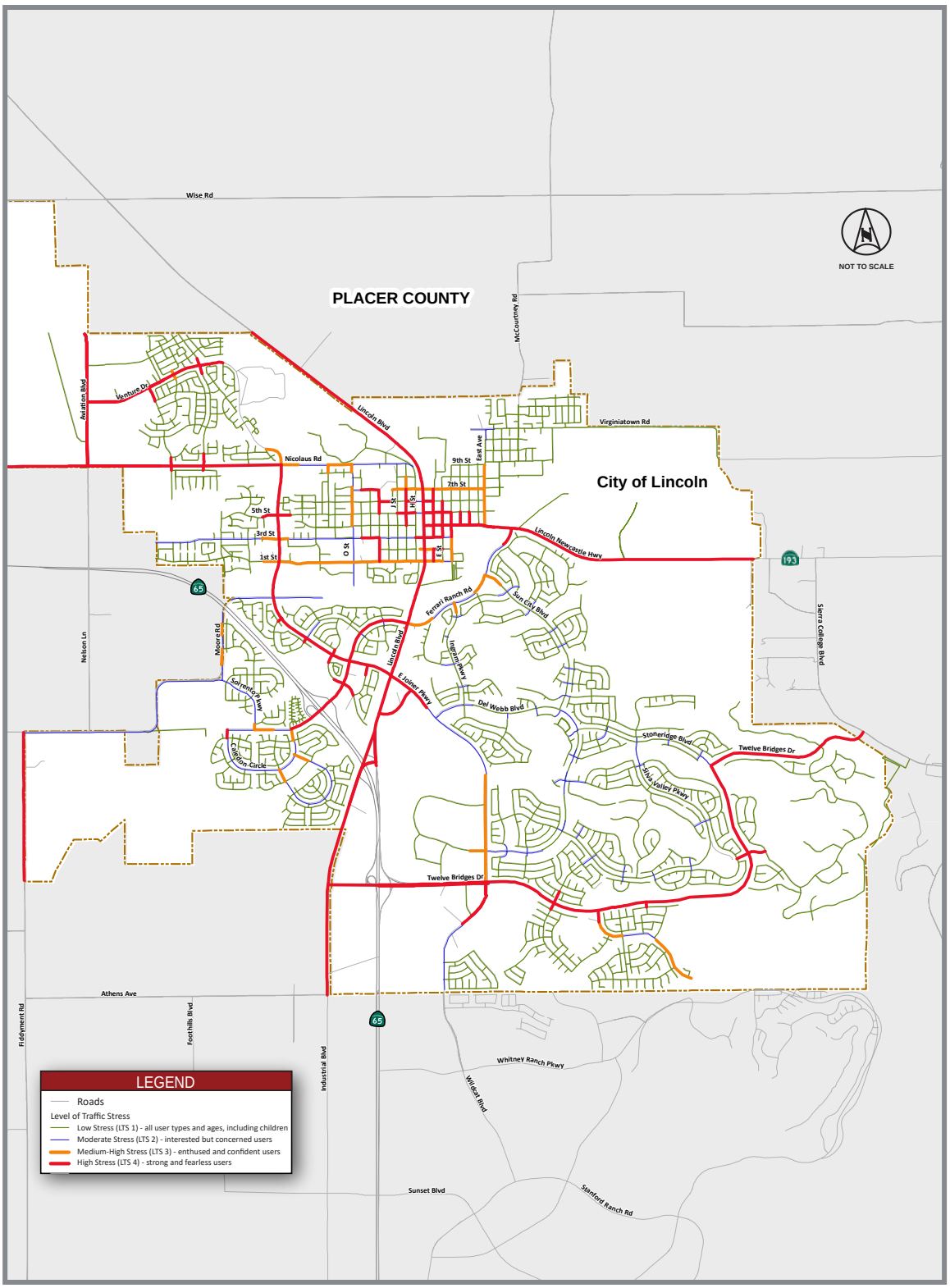
LEVEL OF TRAFFIC STRESS (LTS)	DESCRIPTION
LTS 1	Presenting little traffic stress and demanding little attention from cyclists, and attractive enough for a relaxing bike ride. Suitable for almost all cyclists, including children trained to safely cross intersections. On links, cyclists are either physically separated from traffic, or are in an exclusive bicycling zone next to a slow traffic stream with no more than one lane per direction, or are on a shared road where they interact with only occasional motor vehicles (as opposed to a stream of traffic) with a low speed differential. Where cyclists ride alongside a parking lane, they have ample operating space outside the zone into which the car doors are opened. Intersections are easy to approach and cross.
LTS 2	Presenting little traffic stress and therefore suitable to most adult cyclists but demanding more attention than might be expected from children. On links (roadway segments), cyclists are either physically separated from traffic, or are in an exclusive bicycling zone next to a well-confined traffic stream with adequate clearance from a parking lane, or are on a shared road where they interact with only occasional motor vehicles (as opposed to a stream of traffic) with a low speed differential. Where a bike lane lies between a through lane and a right-turn lane, it is configured to give cyclists unambiguous priority where cars cross the bike lane and to keep car speed in the right-turn lane comparable to bicycling speeds. Crossings are not difficult for most adults.
LTS 3	More traffic stress than LTS 2, yet markedly less than the stress of integrating with multilane traffic, and therefore welcome to many people currently riding bikes in American cities. Offering cyclists either an exclusive riding zone (lane) next to moderate-speed traffic or shared lanes on streets that are not multilane and have moderately low speed. Crossings may be longer or across higher-speed roads than allowed by LTS 2, but are still considered acceptably safe to most adult pedestrians.
LTS 4	A level of stress beyond LTS 3.

EXISTING ROADWAY NETWORK LEVEL OF TRAFFIC STRESS

Using the criteria described in the above section, a level of traffic stress (LTS) value was assigned to every segment of the City of Lincoln's existing roadway network. Segments were generally defined as sections of roadway that are between controlled intersections or changes in roadway characteristics (such as the transition from two to three lanes, or changes in speed limits). Segments vary by length depending on the roadway function and characteristic. Additionally, intersection approaches were treated as distinct segments for analysis due.

The City of Lincoln's existing roadway network level of traffic stress is presented on **Figure 5**. There is a large proportion of low-stress facilities within the city due to the fact that the majority of the city's road-miles are residential streets with speed limits of 25 miles per hour or less. While these streets generally do not have bicycle facilities, they are considered low stress routes due to the low vehicular speed and low volumes.

Figure 5 – Existing Level of Traffic Stress



It is important to note that roadways with existing bicycle facilities or with low speed limits are not necessarily considered low-stress. For example, Ferrari Ranch Road has Class II bike lane facilities, but it is considered high-stress between Caledon Circle and Del Webb Boulevard, primarily due to its speed limit of 40 miles per hour and the lack of additional bicycle safety buffers. Also, while 5th Street is considered low-stress along the majority of its extents due to its low speed limit, the route is intersected by Joiner Parkway in the west and Lincoln Boulevard in the east. Given the lack of bicycle pockets at these intersection approaches, cyclists are forced to maneuver between through and right-turn vehicular movements, creating a high-stress condition at this juncture. Other factors, such as the presence of on-street parking, can affect the LTS score.

The following **Table 8** shows the distribution of segment miles by level of traffic stress. Given the extent of residential streets, 85-percent of the City's road system is classified low-stress. Conversely, 15-percent is classified as medium to high-stress (wide, higher speed, arterials). Class I bike paths do not receive an LTS score; however, they provide the lowest stress experience for cyclists due to the complete separation from motor vehicles.

Table 8 – *Segment Miles by Level of Traffic Stress*

LTS	Length (Miles)	Percentage
1 – Low	431	78%
2 – Low-Moderate	39	7%
3 – Medium-High	18	3%
4 – High	66	12%
Total	**554**	**100%**

EXISTING NETWORK CONNECTIVITY

While most the City of Lincoln's roadway network is low stress, the City of Lincoln faces many challenges to intra-city connectivity. The city is divided by natural and physical barriers that preclude bicycle connectivity, including Auburn Ravine just south of 1st Street, and by Highway 65 just west of E Joiner Parkway. Additionally, high-stress roadways act as barriers to mobility and gaps of connectivity. As shown in **Figure 6**, connectivity gaps are caused by medium to high stress routes along the following roadways, among others:

- E. Joiner Parkway
- Lincoln Bouelvard
- Ferrari Ranch Road
- McBean Park Drive
- Twelve Bridges Drive

Additionally, the City of Lincoln's downtown area is considered a medium to high stress area, due primarily to the presence of on-street parking and lack of adequate bicycle markings at intersections.

As a result, intra-city connectivity is limited to "islands" (or pockets) of low-stress network, dramatically reducing the number and length of potential connected trips within the city. **Figure 7** presents the low stress connectivity matrix, where the key locations within the City are connected by low stress routes. These key locations include neighborhoods, schools, shopping centers, and governmental offices, among others, totaling 100 locations, or "key-nodes", serving as primary origins and destinations for bicycle travel within the city. A connectivity evaluation was conducted for each location pair to determine how well each point is served by the low stress network.

Figure 6 – Barriers and Gaps

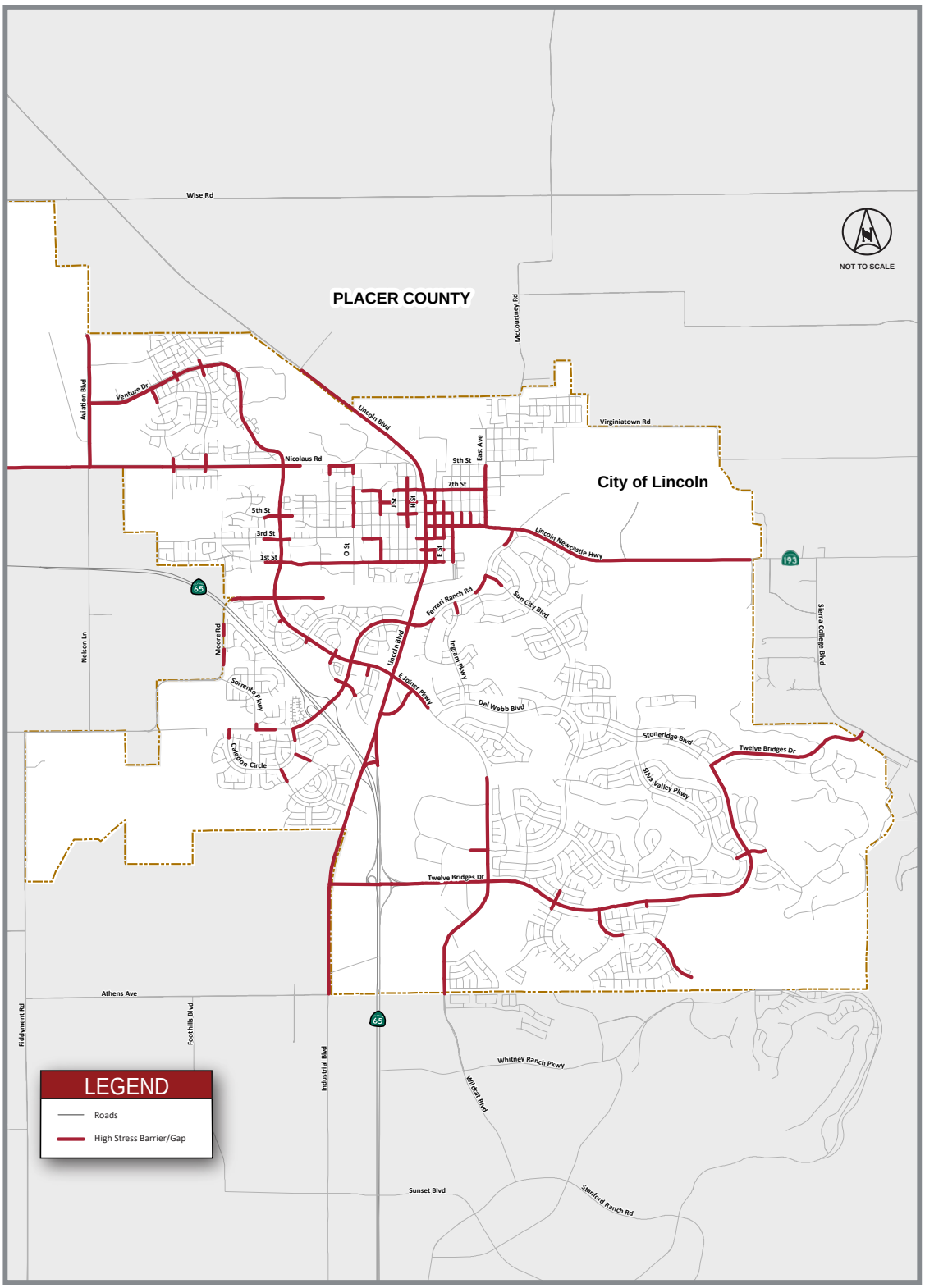
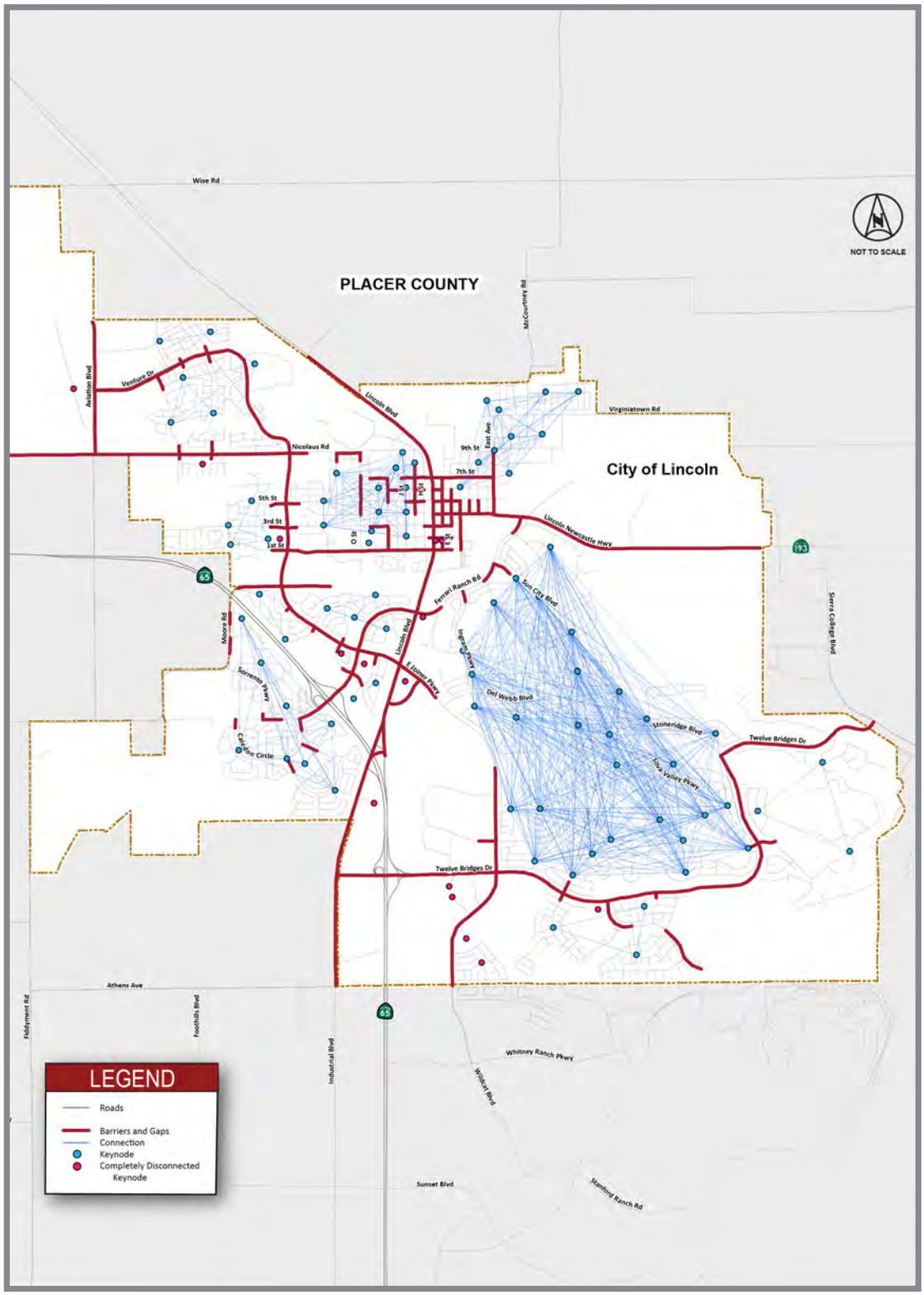


Figure 7 – Network Connectivity



As shown on **Figure 7**, each blue line represents a positive connection between keynodes. The isolated webs demonstrate the lack of existing city-wide low stress connectivity, and provides insight on which new connections would provide the greatest benefit for enhancing mobility through connected neighborhoods. In addition, as shown, some key-nodes are completely disconnected to the rest of the network, due to being separated by a moderate to high stress route. *(Note: Class I bicycle facilities are included as low stress bicycle connections.)*

Figure 6 and **Figure 7** show that even with an abundance of low-stress routes (i.e., islands of connectivity), the existing low-stress network does not adequately provide for true connectivity between key locations or areas within the City.

EXISTING NETWORK UNDUE DETOUR

Bicycle trip lengths are an important consideration when evaluating bicycle network connectivity. Behavioral research by the Mineta Institute suggests that physical or high-stress impedances that necessitate longer more circuitous bicycle routing can diminish the desire to bike at all. This is called "undue detour" and it can occur when re-routing to maintain a low-stress bicycling experience is significantly greater than the shortest or quickest route. Hence, measuring bicycle trip length is critical to determining network connectivity for the following reasons:

- While key-nodes may be physically connected by the network, high-stress barriers and gaps within the network can substantially increase bicycle trip distances.
- Per research by the Mineta Institute, circuitous routing of greater than 25% of the baseline distance is considered "undue detour", and could impede bicycle travel.
- Additionally, high-stress barriers and gaps can completely separate key-nodes from the surrounding network, making it difficult and unsafe to travel by bicycle.

The following network connectivity assessments were performed to quantify bicycle trip distance between key-nodes throughout the City.

Baseline Network Trip Length

The baseline network reflects the full roadway and bicycle network regardless of stress level. The resulting bicycle trip distances between all key-node locations provides the "shortest path" bicycle connectivity network. This assumes the ideal condition in which the entire roadway network is considered appropriate for all user types.

Low Stress Network Trip Length

The low-stress network analysis reflects the shortest path between key-node locations using only the low-stress roadway network (LTS-1 and LTS-2), including Class I bike paths. In effect, all high-stress routes (LTS-3 and LTS-4) are considered barriers to bicycle travel, and are removed from the network.

The comparative performance of these two networks are shown in **Table 9**. As shown, increased trip lengths required to maintain a low-stress bicycling experience adds a total of 48 miles to cyclist travel between key locations within the City. Additionally, detours to maintain a low-stress bicycling experience that result in 25% or more increase in trip length relative to the shortest route (i.e., undue detour) adds 37 miles. Similarly, an 89.2% reduction in overall connectivity between key-nodes occurs when removing the high-stress network from consideration (i.e. 87.6% of trips between key-nodes cannot be made without accessing the high-stress network, and 0.6% of trip lengths between key-nodes increases bicycling distance by 25% or greater, within the low stress network).

To account for potentially unreasonable bicycle trip lengths, the same analysis was applied to trip lengths of two miles or less (to represent common trip types and purposes). As shown in **Table 10**, the removal of medium to high stress routes

from the network resulted in an approximately 67.4% reduction in connectivity between key-nodes (i.e. approximately 65.2% of trips between key-nodes are no longer possible, and 2.2% of trip lengths between key-nodes increase by 25% or greater). The increase in trip lengths for trips of two miles or less adds approximately 45 miles of detour to cyclist travel between key locations within the city. Additionally, approximately 37 miles of total detour is considered "undue detour", and is attributable to trip lengths that increase by 25% or more.

Table 9 – *Trip Length and Detour*

CONNECTION/DETOUR	% OF TOTAL POSSIBLE TRIPS	ADDED DISTANCE (FEET)	ADDED DISTANCE (MILES)
Undue Detour (> 25%)	0.6%	194,040	37
Detour (< 25 %)	1.0%	55,664	11
Completely Disconnected**	87.6%	-	-
Detour Total	**89.2%**	**249,704**	**48**
No Base Connection*	1.0%	-	-
No Change	9.8%	-	-
Grand Total	**100.0%**	**249,704**	**48**

**Includes key-nodes that are not connected to network under base conditions*
***100% disconnection = completely disconnected from network*

Table 10 – *Trip Length and Detour (Trip Lengths of 2 Miles or Less)*

CONNECTION/DETOUR	% OF TOTAL POSSIBLE TRIPS	ADDED DISTANCE (FEET)	ADDED DISTANCE (MILES)
Undue Detour (> 25%)	2.2%	194,040	37
Detour (< 25 %)	2.9%	40,792	8
Completely Disconnected**	65.2%	-	-
Detour Total	**70.3%**	**234,832**	**45**
No Base Connection*	3.5%	-	-
No Change	26.2%	-	-
Grand Total	**100.0%**	**234,832**	**45**

**Includes keynodes that are not connected to network under base conditions*
***100% disconnection = completely disconnected from network*

COMMUNITY PARTICIPATION

Community participation is a vital component of this plan for obtaining input on existing bicycling facilities, potential roadways for improvement to accommodate bicycles, and the type of support facilities or programs needed to improve bicycling within the City of Lincoln. The development of the 2018 Bicycle Transportation Plan was informed through a combination of technical analyses and input received from the public and stakeholders. The public outreach approach of this plan included both traditional approaches to soliciting public input such as public workshops as well as non-traditional on-line engagement methods. The following key outreach tasks were performed which are described in greater detail below.

- Two public workshops – one at the beginning of the study and one at the conclusion;
- Circulation of project information cards to schools and the public;
- Development of a stakeholder and public contact list;
- Periodic eBlasts to inform the public and stakeholders of upcoming project related events and/or information on how to provide input;
- Development and upkeep of a project specific website;
- Access to on-line survey on the project website; and,
- Development of an interactive web-based tool for soliciting geo-referenced comments and suggestions from the public.

PUBLIC WORKSHOPS

Two public workshops were held to solicit input on the development of the 2018 Bicycle Transportation Plan and to receive feedback on the plan recommendations. These are described below.

Workshop #1: The key focus of this workshop was to solicit input from the public regarding issues and opportunities for improving the City's bicycle network. Input was received using interactive polling combined with dialogue. The workshop provided core bicycle network planning concepts, facility types, and selected analysis approaches along with initial findings regarding collision history, existing bicycle infrastructure, and an introduction to level of stress analysis criteria. The public outreach process and resources were described to inform the public how they could stay engaged in the process which included access to on-line materials, the on-line survey, and the on-line interactive web-based tool for providing input continuously throughout the study. The public outreach process itself was also described and how the public's input was going to be used to inform the development of the plan's recommendations (see **Appendix B**)

Workshop #2: The focus of this workshop was to present the draft study, its' findings, and its' recommendations. Feedback was solicited from the public on the proposed CIP list and the top ten improvement recommendations. All feedback received was recorded and reported back to the City Council for its consideration during approval of the study.

Project Information Card

A project information card was developed which included information on how to access the on-line engagement resources developed for the plan (i.e., project website and interactive web-based tool for public input). These cards were circulated at public workshops, to city schools, to stakeholders and the public. These cards were also available at the City offices.

Public and Stakeholder Contact List

A project contact list was developed at the onset of the study which served as a mailing list for informational eBlasts related to the 2018 Bicycle Transportation Plan development. This list was open to all interested parties and consisted of key stakeholders such as heads of school districts, the Bureau of Industrial Affairs (BIA), bicycle advocacy groups/clubs and interested members of the public.

ON-LINE ENGAGEMENT

The following non-traditional outreach strategies were utilized in this plan.

eBlasts

Periodic eBlasts were sent to the contact list to inform the public and stakeholders of upcoming project related events and/or information on how to provide input. Announcements were also posted on the project website (see below) and the City of Lincoln's website.

Project Specific Website

Planning information was shared continuously throughout the study through the development of a project specific website at *www.lincolnbikewayplan.com*. The website provided an overview of the plan's purpose, background document resources, information on upcoming events and workshops, on-line survey, and access to the interactive web-based tool link for providing geo-referenced comments and inputs to identify needs or improvements. The webpage was advertised throughout the City through the distribution of informational project cards, workshops, and periodic stakeholder and contact list eBlasts. Additionally, the website provided a set of frequently asked questions and responses to those questions (these are provided in **Appendix B**): The website remained available for public comment for two months following the first Public Workshop.

Interactive Web-based Tool

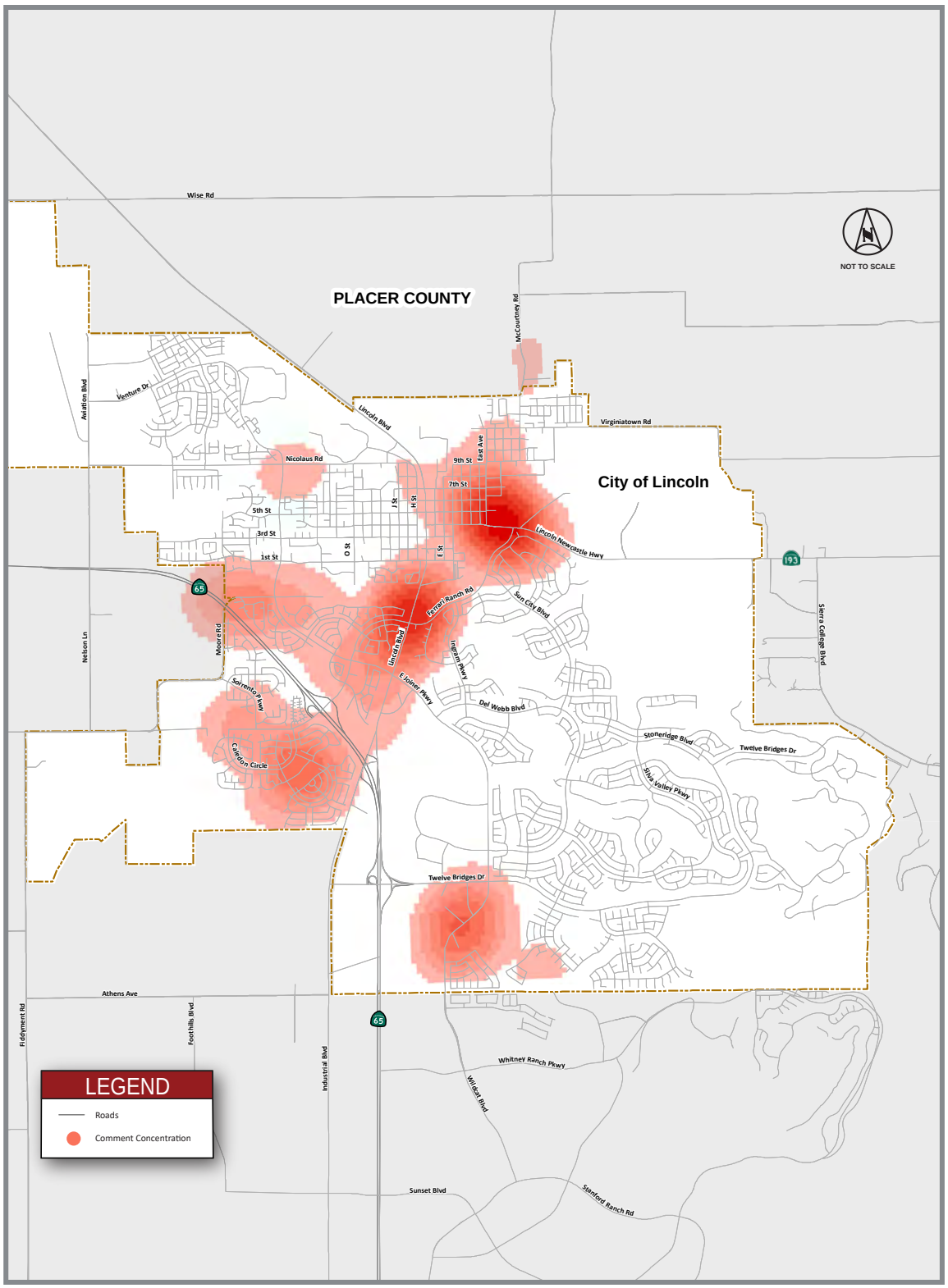
In support of the public outreach effort, an interactive web-based tool was developed that allowed the public to use a map-based spatial tool to comment on and/or make suggestions on improvements or deficiencies related to specific geographical locations. Users could view the study area, zoom into areas of particular interest, add comments and recommendations with a simple click and comment feature, and leave general comments about the project. The comments received were compiled and summarized for assisting in the identification of issues, projects, and priorities to incorporate into the plan. This interactive web-based tool proved to be a key source of public input. **Figure 8** shows the concentration of public comments received on the interactive web-based tool. **Appendix C** provides a summary of public comments/suggestions.

SUMMARY OF PUBLIC INPUT

The public input received through the various outreach mediums during the development of the *2018 Bicycle Transportation Plan* was summarized by geographic location to assist in the identification of needs and bicycle improvements to address those needs. This geographic summary reflects those locations or needs that received the most public comments (i.e., were repeatedly raised by the public). This summary is provided below.

- East Avenue is a primary route into and out of the City, yet it lacks clearly marked centerlines, parking spaces, and is poorly maintained, making it unsafe for cyclists. East Avenue should have clearly marked bike lanes and sidewalks.
- Crossing the intersection of Lincoln Boulevard at Ferrari Ranch Road is difficult and unsafe, especially due to the presence of the railroad tracks.
- The intersection of Hwy 193 at Ferrari Ranch Road is hazardous for cyclists, especially for those traveling west on Hwy 193 turning left onto Ferrari Ranch Road.
- There needs to be a connection on both sides of Moore Road, under Hwy 65.
- Lincoln Boulevard needs bike lanes and sidewalk.
- East Joiner Parkway south of Twelve Bridges Drive needs bike lanes and sidewalk, with crossing for students at the future high school and existing middle school.

Figure 8 – Public Comments



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PROPOSED SYSTEM

This section describes the proposed system of bikeways developed for the City of Lincoln. The proposed bikeway system was informed by:

- Level of traffic stress and connectivity analysis results;
- Historical collision data; and,
- Public input.

Recommendations were developed in coordination with the City of Lincoln. Overall, the proposed bikeway system aims to close gaps in the bicycle network including those created by the high-stress network routes. This proposed bikeway system provides the comprehensive project list for the City's Capital Improvement Program (CIP). From this CIP list, ten projects were identified for further review and design considerations in an effort to inform the City's prospective grant funding applications.

PLANNED BIKEWAY PROJECTS

The City currently has several bikeway projects planned, including the following.

Lincoln Boulevard Improvements Project

Former Highway 65 in Lincoln, now Lincoln Boulevard, has been relinquished to the City of Lincoln. The Lincoln Boulevard Improvements Projects will focus on the segment from just south of Sterling Parkway to just north of 7th Street. The overall goal of the Lincoln Boulevard project is to provide for a more pedestrian, bicycle, and Nieghborhood Electric Vehicle (NEV) friendly environment along the main street through the city. In order to address funding constraints, the improvements will be constructed in phases as described below.

Lincoln Boulevard Phase 1 - 7th Street to McBean Park Drive (Project Completed October 2015)

This project proivde improvements to Lincoln Blvd. from 250 feet north of 7th Street to McBean Park Drive. Improvements included transition onto the cross-streets at 5th Street, 6th Street, and 7th Street. The project included the following elements:

- Curb returns with bulb-outs to shorten the pedestrian path, enhanced crosswalks, and sidewalks with terra cotta bands.
- Street trees with an irrigation system that includes capacity for expansion for future shrub planting.
- Site furnishings to include bike racks, benches, and trash receptacles.
- Decorative street lights.
- Replacement of damaged and non-conforming sidewalks including ADA compliant pedestrian ramps.
- Class 2 bike/NEV access along the project corridor.

Lincoln Boulevard Phase 2 – 1st Street to McBean Park Drive

The project will provide improvements to a quarter-mile stretch of Lincoln Boulevard from 2nd Street to McBean Park Drive (this stretch includes three different intersections). Improvements will be similar as those listed in Phase 1 – 7th Street to McBean Park Drive. Construction contract April 2018 – November 2018.

Lincoln Boulevard HSIP – Signal Modification and Upgrades (Included with Phase 2 Project)

The project consists of lighting and equipment upgrades to five traffic signals and systemic traffic signal timing improvements to a total of 11 traffic signals along Lincoln Boulevard from Sterling Parkway to 7th Street including the addition of Class II NEV/Bike lanes from Sterling Parkway to 1st Street. Construction contract April 2018 – November 2018.

Lincoln Boulevard Phase 3 – Pedestrian Railroad Crossing Upgrades

This project will provide pedestrian crossing improvements of the railroad tracks to the side streets adjacent to a half mile stretch of Lincoln Boulevard. The side streets include 1st Street, 3rd Street, 5th Street, 6th Street, and 7th Street. The total combined project length is approximately 0.6 miles of improved sidewalks and approximately 0.3 miles of NEV/Bike Lanes. The overall goal of this project is to provide for a more pedestrian, bicycle, and Neighborhood Electric Vehicles (NEV) friendly environment along the main street through the city. This will be accomplished by implementing the use of shortened pedestrian crossings (i.e. bulbouts), ADA compliant pedestrian ramps, upgraded pedestrian crossings of the railroad tracks, and bike access along the side streets. NEV lanes will be included along several of the side streets for consistency with the City's NEV Circulation Plan.

Lincoln Boulevard – Ferrari Ranch Road to 1st Street and Auburn Ravine Bridge

This Lincoln Boulevard project would expand the roadway to three lanes with landscaped median, including Class II bike/NEV lanes and wider sidewalks. According to project site plans, the Class II bike/NEV lanes would range from 7 to 10-feet, and bike/NEV pockets would be provided at intersections with right turn pockets.

McBean Park Drive Bridge Replacement

This project includes the replacement of the McBean Park Drive bridge over the Auburn Ravine, and improvement of the roadways approaches on McBean Park Drive. The bridge will be widened to accommodate Class II bike/golf cart lanes, and sidewalks for pedestrians.

Additional information on these planned projects is included in **Appendix E.**

PROPOSED SYSTEM OF BIKEWAYS

In addition, the previous Bicycle Transportation Plan (2012) identified bicycle improvements for the City of Lincoln (**Appendix H**). Improvements included an extensive network of Class I bike paths providing connections to areas of future development, and Class II facilities on planned roads. This 2018 plan update assumes the full list of improvements presented in the previous plan, specifically those that fulfill future development needs. The 2018 BTP CIP identifies improvements to be added to, or prioritized within, the existing Capitol Improvement Program (CIP) list.

Table 11 shows the proposed intersection improvements to be included in the City's CIP. **Table 12** shows the proposed bikeway improvements to be included in the City's CIP. It includes a total of 38.6 miles of new bicycle routes (Class I, Class II, Class III, and Class IV-Lite). The existing and proposed bikeway system for the 2018 BTP is shown in **Figure 9**, and includes bikeway projects planned by Placer County Transportation Planning Agency (PCTPA). Bikeway improvement concepts for Specific Plan areas are provided in **Appendix D.**

Table 11 – *Capital Improvement Program: Intersection Bicycle Improvements*

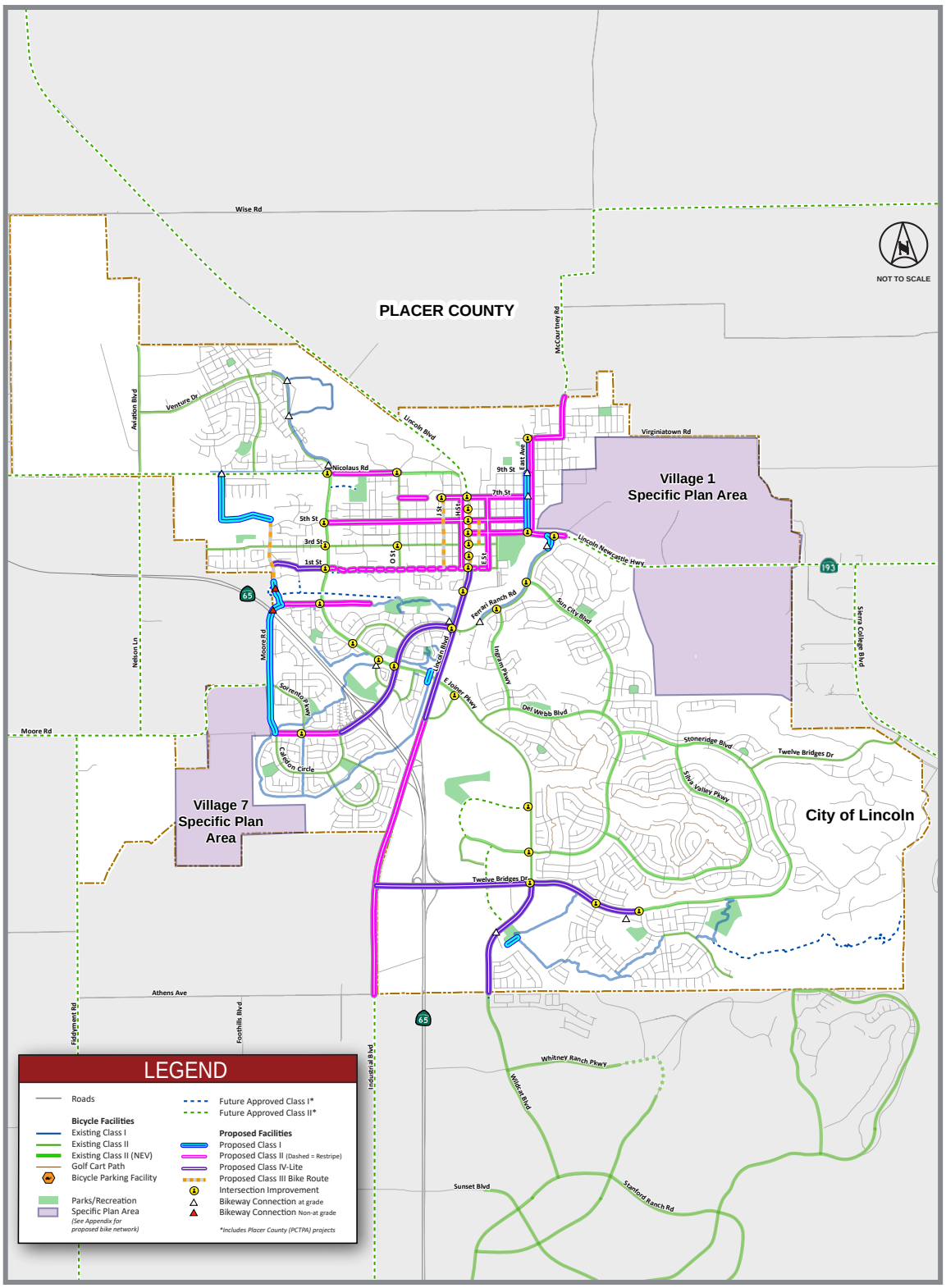
ID	LOCATION	LOCATION	TYPE
I-001	East Avenue	9th Street and 7th Street	Crossing
I-002	Joiner Pkwy	Finney Way	Crossing
I-003	Nicolaus Road	Class I trail/Teal Hollow Drive S	Crossing/Connection
I-004	Groveland Lane	Joiner Pkwy	Crossing/Connection
I-005	Ferrari Ranch Road	at Class I Trail	Connection
I-006	E. Joiner Pkwy	at Twelve Bridges Middle School	Crossing/Connection
I-007	East Avenue	12th Street	Bicycle Protection
I-008	McBean Park Drive	East Avenue	Bicycle Protection
I-009	7th Street	J Street	Bicycle Protection
I-010	O Street	3rd Street	Bicycle Protection
I-011	Ferrari Ranch Road	Ingram Pkwy; Sun City Blvd	Bicycle Protection
I-012*	Ferrari Ranch Road	SR-193/McBean Park Drive	Bicycle Protection
I-013	Lincoln Blvd	1st Street; 3rd Street; McBean Park Drive; 5th Street; 6th Street; 7th Street	Bicycle Protection
I-014	Lincoln Blvd	Gateway Drive	Bicycle Protection
I-015	Lincoln Blvd	Ferrari Ranch Road	Bicycle Protection
I-016	Ferrari Ranch Road	E. Joiner Pkwy	Bicycle Protection
I-017	E. Joiner Pkwy	Sterling Pkwy; Groveland Ln; Danbury Dr/ Downing Cir; Moore Road; 1st Street; 3rd Street; 5th Street; Nicolaus Road	Bicycle Protection
I-018	Ferrari Ranch Road	Sorento Pkwy	Bicycle Protection
I-019	E. Joiner Pkwy	Bella Breeze Drive (N and S)	Bicycle Protection
I-020	E. Joiner Pkwy	Twelve Bridges Drive	Bicycle Protection
I-021	Twelve Bridges Drive	Parkside Drive/Southcreek Drive	Bicycle Protection
I-022	Twelve Bridges Drive	Eastridge Drive	Bicycle Protection

**To be fully or partially funded with developed fees or as a condition of approval of new development*

Table 12 – *Capital Improvement Program: Bikeway Improvements*

ID	LOCATION	BOUNDARY	TYPE	LENGTH
B-001	East Avenue	9th St to McBean Park Dr	Class I and Class II	6,300
B-002*	East Avenue	12th Street to 9th Street	Class II	2,803
B-003	McBean Park Drive	Lincoln Blvd to Ferrari Ranch Rd	Class II	6,992
B-004	Lincoln Blvd (Downtown)	1st St to 7th St	Bike Route (Class III)	5,761
B-005*	Lincoln Blvd	1st St to Sterling Pkwy	Class II (Shared NEV)	12,661
B-006	Lincoln Blvd	Sterling Pkwy to City Limit	Class II	9,755
B-007	Ferrari Ranch Road	Lincoln Blvd to Caledon Cir	Class IV-Lite	14,039
B-008	Ferrari Ranch Road	Caledon Cir to Caledon Cir	Class II	5,146
B-009	Moore Road	Class I east of E. Joiner Pkwy to Class I highway crossing	Class II	7,241
B-010	H Street	1st Street to 7th Street	Class II	8,469
B-011	SR-65 Crossing	Moore Rd west and east of highway	Class I	643
B-012	Auburn Ravine Crossing	Moore Rd east of highway to Chambers Dr	Class I	1,000
B-013	Chambers Drive	Class I at Moore Road and Nicolaus Rd	Bike Route (Class III)	5,264
B-014	Chambers Drive	Chambers Dr to Waverly Dr/Nicolaus Rd	Class I	3,901
B-015	1st Street	Douglas Dr to Joiner Pkwy	Class IV-Lite	4,568
B-016	1st Street	Joiner Pkwy to R Street	Class II	3,296
B-017**	1st Street	R Street to Lincoln Blvd	Class II	8,399
B-018	Nicolaus Road	Joiner Pkwy to O St	Class II	5,625
B-019	Twelve Bridges Drive	Industrial Ave to Eastridge Dr	Class IV-Lite	22,156
B-020	E. Joiner Pkwy	Twelve Bridges Dr to north of Ranch View Dr	Class IV-Lite	11,440
B-021	3rd Street	Joiner Pkwy to D St	Bike Route (Class III)	13,780
B-022	5th Street	Joiner Pkwy to East Ave	Class II	16,522
B-023	J Street	1st St to 7th St	Bike Route (Class III)	5,761
B-024	7th Street	O St to East Ave	Class II	9,498
B-025	F Street	3rd St to 5th St	Bike Route (Class III)	1,977
B-026	E Street	1st St to 7th St	Class II	5,748
B-027	E Street (Future)	Ferrari Ranch Rd to 1st Street (Extension)	Class II	3,477
B-028	Class I under E. Joiner Pkwy	E. Joiner Pkwy	Class I	324
B-029	Class I near McBean Park Dr and Ferrari Ranch Rd	McBean Park Dr at Ferrari Ranch Rd	Class I	261
B-030	Class I near E. Joiner Pkwy and Twelve Bridges MS	Twelve Bridges Middle School	Class I	780
B-031	Class I (Future Development)	Ferrari Ranch Rd at Caledon Cir	Class I	448.7
B-032	Virginiatown Rd and McCourtney Rd	East Avenue to City Limits	Class II	780
**To be fully or partially funded with developed fees or as a condition of approval of new development* ***Currently planned by the City of Lincoln*			**Total Length**	**204,035 (38.6 mi)**

Figure 9 – Existing and Planned Bicycle Facilities



TOP TEN BIKEWAY IMPROVEMENTS

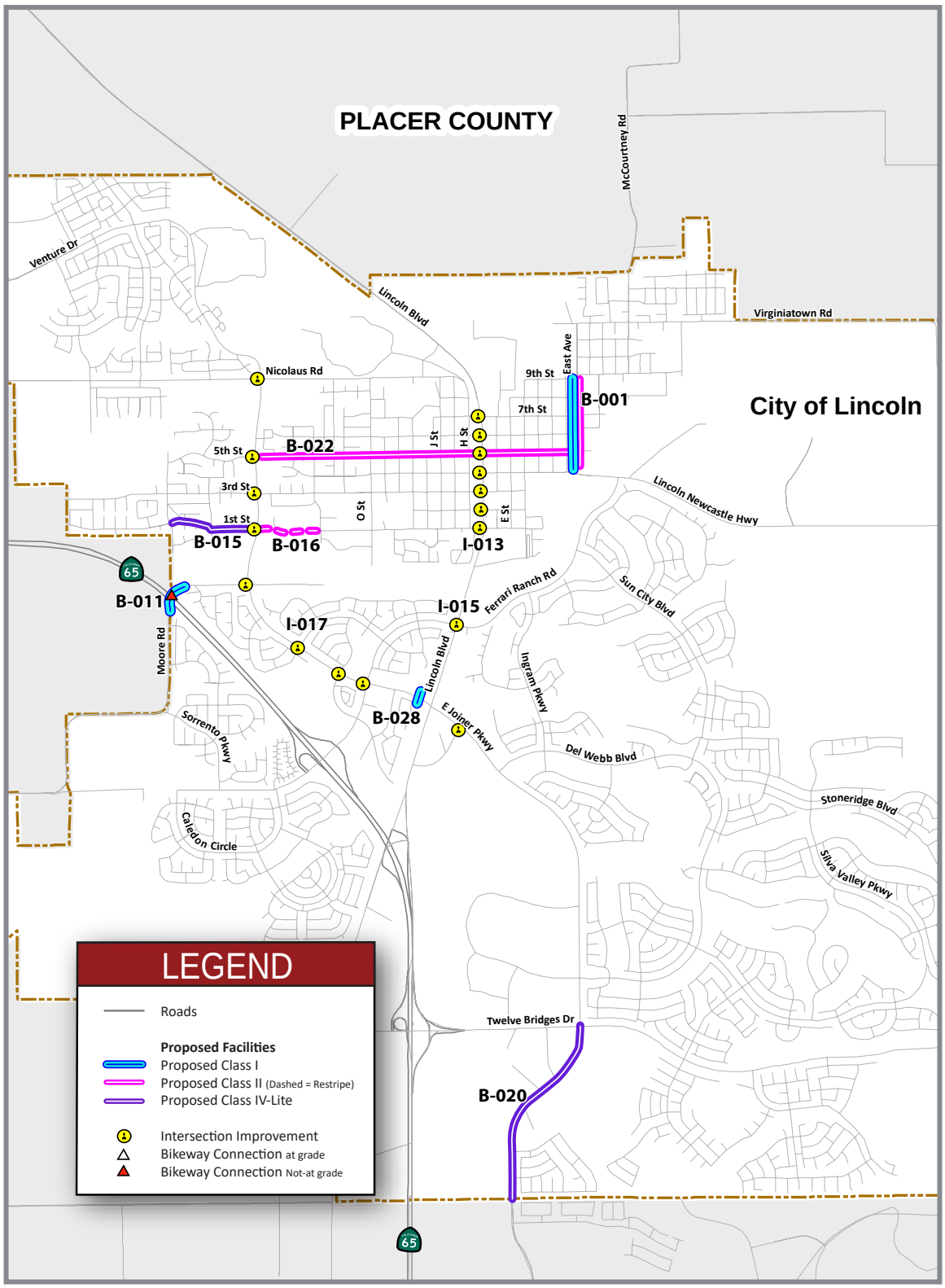
The system of proposed bikeway improvements creates a continuous low-stress network that connects residential areas with majority activity centers in the City of Lincoln, provides low-stress connections for anticipated development in the City Sphere of Influence, and includes regional low-stress connections to communities east and south of the City.

Of the proposed bikeway improvements listed above, ten projects were identified as priority projects for the City. **Table 13** show the City's Top 10 bikeway improvement projects, as shown on **Figure 10**. The Top 10 projects include a total of 8.2 miles of new bicycle facilities (Class I, Class II, and Class IV-Lite). The Top 10 projects are discussed in more detail on the following pages. Cost estimates and initial design recommendations are provided in **Appendix F**.

Table 13 *–Top 10 Bikeway Improvements*

	CIP: TOP 10 BIKEWAY IMPROVEMENT PROJECTS				
TOP 10	**ID**	**LOCATION**	**BOUNDARY**	**TYPE**	**LENGTH (FEET)**
1	B-001	East Avenue	9th St to McBean Park Dr	Class I and Class II	6,300
2	B-011	SR-65 Crossing	Moore Rd west and east of highway	Class I Crossing	643
3	B-015	1st Street	Douglas Dr to Joiner Pkwy	Class IV-Lite	4,568
4	B-016	1st Street	Joiner Pkwy to R Street	Class II	3,296
5	B-020	E. Joiner Pkwy	Twelve Bridges Dr to north of Ranch View Dr	Class IV-Lite	11,440
6	B-022	5th Street	Joiner Pkwy to East Ave	Class II	16,522
7	B-028	Class I under E. Joiner Pkwy	E. Joiner Pkwy	Class I	324
8	I-013	Lincoln Blvd	1st Street; 3rd Street; McBean Park Drive; 5th Street; 6th Street; 7th Street	Bicycle Protection at Intersections	-
9	I-015	Lincoln Blvd	Ferrari Ranch Road	Bicycle Protection at Intersections	-
10	I-017	E. Joiner Pkwy	Sterling Pkwy; Groveland Ln; Danbury Dr/Downing Cir; Moore Road; 1st Street; 3rd Street; 5th Street; Nicolaus Road	Bicycle Protection at Intersections	-
				Total Length (Feet)	**43,093**
				Total Length (Miles)	**8.2**

Figure 10 – Top Ten Bikeway Improvement Projects



This section outlines the Top Ten Bikeway Improvements included in the City's recommended CIP list. These projects represent those improvements that will provide the most benefit for the City in terms of increasing safety and connectivity of bicycle travel for all user types.

1. B-001: East Avenue Class I and Class II Bike Lanes

This project includes Class II bike lanes on East Avenue from 9th Street to McBean Park Drive. In addition, Class I facilities currently exist along East Avenue from 12th Street to 9th Street, and from 6th Street to McBean Park Drive. This project would construct Class I facilities from 9th Street to 6th Street, and improve crossings at side streets from 6th Street to McBean Park Drive. Class II bike lanes between 9th Street to 12th Street are planned, and will be fullly or partially funded by development fees or as a condition of approval of new development.

East Avenue is currently considered a high stress route due to the disconnected or lack of bicycle facilities along a roadway with moderate speeds. With these improvements, it would be considered a low stress route. In addition, these facilities will provide a safe and continuous bicycle route to Carlin C. Coppin Elementary School on 12th Street.

2. B-011: SR-65 Class I Crossing

This project includes a Class I bicycle and pedestrian path under SR-65 connecting Moore Road west and east of the highway. This project would provide additional connectivity for neighborhoods west and east of the highway, and provide opportunity to connect to future development west of the City.

3. B-015: 1st Street Class IV-Lite

This project includes Class IV-Lite bike lanes on 1st Street from Joiner Parkway to Douglas Drive/Chambers Drive. Class IV-Lite bike lanes are recommended to provide safe bicycle access to the Creekside Oaks Elementary School and the City of Lincoln Parks and Recreation office. This project assumes improvements to the intersection of Joiner Parkway at 1st Street (Project #I-017), ensuring safe bicycle crossing of Joiner Parkway. Restriping of Class II bike lanes is proposed on 1st Street east of Joiner Parkway (Project #B-015).

1st Street at Joiner Parkway is currently considered a high stress route due to the lack of bicycle facilities at the drop-off/pick-up area for an elementary school. Additionally, the intersection approach at Joiner Parkway lacks bicycle pockets in the presence of a right-turn pocket. With this improvement, it would be considered a low stress route.

4. B-016: 1st Street Class II

This project includes restriping of Class II bike lanes on 1st Street from Joiner Parkway to R Street. Class II facilities are planned on 1st Street from R Street to Lincoln Boulevard (Project #B-017).

1st Street at Joiner Parkway, and east to R Street, is considered a high stress route due to the presence of faded Class II bike lanes adjacent to on-street parking. Given that it provides access to several schools (First Street School and Glen Edwards Middle School), the Class II bike lanes provide a false sense of safety for cyclists. With this improvement, it would be considered a low stress route.

5. B-020: E. Joiner Parkway Class IV-Lite

This project includes Class IV-Lite bike lanes on E. Joiner Parkway from Twelve Bridges Drive to north of Ranch View Drive at the Lincoln/Rocklin city limits..

E. Joiner Parkway is currently a high stress route near Twelve Bridges Middle School and the public library. A high school is planned in the vicinity west of E. Joiner Parkway. Class IV-Lite bike lanes are recommended to provide safe bicycle access to these locations. In addition, E. Joiner Parkway provides connectivity to the City of Rocklin.

6. B-022: 5th Street Class II/Class III

This project includes Class II bike lanes on 5th Street from Joiner Parkway to East Avenue. Due to existing diagonal parking on segments of 5th Street, Class III signage and markings are recommended between I Street and D Street where a Class II bike lane is not feasible. This project complements improvements to the intersection of Lincoln Boulevard at 5th Street (#I-013).

This project would provide safe connectivity for cross-town travel east and west of Lincoln Boulevard from Joiner Parkway to East Avenue. Diagonal parking exists on both 3rd Street and 6th Street near Lincoln Boulevard. In addition, 6th Street and 7th Street do not directly connect to Joiner Parkway. As such, 5th Street is the most viable option for cross-town connectivity between Joiner Parkway and East Avenue. While Class II bike lanes are recommended on 1st Street, cyclists are not expected to divert a cross-town trip to 1st Street if it does not fit their natural path.

7. B-028: Class I Connection under Joiner Parkway

This project includes a Class I connection under Joiner Parkway, between existing Class I bike paths. This connection would provide an alternative, low stress route to Ferrari Ranch Road connecting neighborhoods west and east of the highway, and west and east of Joiner Parkway. While a Class IV-Lite route is recommended on Ferrari Ranch Road in the City's 2018 BTP CIP, providing off-street bikeway connections would further reduce cyclists' exposure to motor vehicles.

8. I-013: Intersection Improvements on Lincoln Boulevard (Downtown)

This project includes improvements to intersection approaches on Lincoln Boulevard between 1st Street and 7th Street., and corresponding side streets. Intersection improvements include pavement markings, bike pockets, bike pocket extensions, and adequate signage, where appropriate.

The Lincoln Boulevard Improvement Project Phase I added bicyclist and pedestrian improvements along the Downtown Lincoln corridor from 7th Street to McBean Park Drive, and Phase 2 would extend these improvements to 1st Street. However, the majority of these improvements addressed through travel on Lincoln Boulevard, without significant improvements to side street approaches. Project #I-013 recommends improving these side street approaches by adding bike pockets or extending bike pockets. In addition, intersection treatments such as green paint and pavement markings would increase visibility in these high conflict areas. Priority for these intersection improvements is on 1st Street and 5th Street, as they correspond to 2018 BTP CIP cross-town improvement recommendations (#B-017 and #B-022).

9. I-015: Intersection Improvement at Lincoln Boulevard and Ferrari Ranch Road

This project includes improvements to intersection approaches at the intersection of Lincoln Boulevard and Ferrari Ranch Road. Intersection improvements include pavement markings, bike pockets, bike pocket extensions, and adequate signage, where appropriate.

The Lincoln Boulevard Improvement Project presents plans for improvements to Lincoln Boulevard from Ferrari Ranch Road to 1st Street, in concurrence with the widening of Lincoln Boulevard to three lanes south of Ferrari Ranch Road. Improvements at this intersection include Class II bike/NEV lanes and intersection pockets on Lincoln Boulevard. Project #I-015 recommends improving the Ferrari Ranch side street approaches by adding a bike pocket on the eastbound approach, and extending the bike pocket with dashed markings on the westbound approach. In addition, intersection treatments such as green paint and pavement markings would increase visibility in this high conflict area.

10. I-017: Intersection Improvement Joiner Parkway (Sterling Parkway to Nicolaus Road)

This project includes improvements to intersection approaches to interesctions on Joiner Parkway between Sterling Parkway and Nicolaus Road. While this segment has existing Class II bike lanes, current intersection configurations present high conflict areas for cyclists. Intersection improvements include pavement markings (green paint), bike pockets, bike pocket extensions, signal detection, and adequate signage, where appropriate.

PROPOSED SYSTEM LOW-STRESS CONNECTIVITY COMPARISON

The existing bikeway network, the 2012 BTP CIP, the recommended 2018 BTP CIP, and the Top Ten CIP list of bikeway improvements were evaluated using the network summary statistic "Percent Nodes Connected". Utilizing the network connectivity methodology described in previous sections, the degree of low-stress network connectivity that is achieved by these respective CIP lists can be determined. In this context, connectivity of key-nodes is based solely on the low-stress network. The percentage of key-nodes connected excludes trips between key-nodes that increase by 25% or greater in length above baseline conditions, are completely disconnected from each other, or are not currently connected under baseline conditions. The percentage of key-nodes connected represents the proportion of locations within the City that remain connected by low stress routes, and the distance between the locations does not increase by more than 25% above baseline conditions. The "Percent Nodes Connected" results of these network analyses are presented in **Table 14**.

As shown above, the 2012 BTP CIP provides minimal improvements to the City's bicycle network connectivity, with approximately 89% of the City's key locations remaining disconnected from each other. This is due, primarily, to the lack of additional safety measures to reduce roadway traffic stress levels along Class II bicycle routes (i.e., many Class II improvements identified in the 2012 BTP CIP did not improve roadway conditions to achieve low-stress status). In contrast, the 2018 BTP CIP significantly improves bicycle network connectivity due to improvements that provide greater separation between cyclists and the outside travel lane, including buffered bike lanes, intersection treatments, and visibility enhancements that reduce roadway traffic stress levels.

Comparing the "Percent Nodes Connected" results between the 2018 BTP CIP and the Top Ten CIP list reveals that approximately 70% of the low-stress connectivity benefit of the entire 2018 BTP CIP will be achieved by implementing the Top Ten CIP list (46.2%/68.1% or 60.8%/86.3%). As described in the previous section, the Top Ten bikeway improvements were chosen to close gaps in the existing bicycle network. As shown in **Figure 10**, Class I bike path projects #B-011 and #B-028 provide connectivity between neighborhoods east and west of the highway. Class II bike lane projects #B-016 and #B-022 provide east-west connectivity through central Lincoln and the Downtown area. Projects #I-013, #I-015, and #I-017 provide improvements to intersections along key north-south routes within the City. Project #B-020 provides connectivity to southern Lincoln, as well as to areas south of the City limits. In addition, projects #B-001, #B-015, #B-016, and #B-020 provide safety improvements for routes near local elementary and middle schools. As a result, these ten improvements decrease roadway traffic stress significantly improving low-stress connectivity throughout the City.

Table 14 – *Low-Stress Network Connectivity Comparison*

ALL TRIPS (ALL LENGTHS)	EXISTING LOW STRESS NETWORK	2012 BTP CIP	2018 BTP CIP	2018 BTP TOP 10
% "Key Nodes" Connected	10.8%	11.3%	68.1%	46.2%
TRIPS OF 2 OR LESS MILES	**EXISTING LOW STRESS NETWORK**	**2012 BTP CIP**	**2018 BTP CIP**	**2018 BTP TOP 10**
% "Key Nodes" Connected	29.1%	29.4%	86.3%	60.8%

FUTURE BICYCLE RIDERSHIP

The number of potential new cyclists associated with the 2018 BTP CIP Top Ten projects was estimated using the National Cooperative Highway Research Program (NCHRP) 552 methodology provided in the *Guidelines for Analysis of Investment in Bicycle Facilities*. The NCHRP 552 report provides national level research that suggest commute mode share can be used to extrapolate a more general mode share for bicycles using a best fit formula. In subsequent validation, the report suggests that the results of this analysis are typically within the 95% confidence interval, and when they are not, they provide a conservative estimate.

NCHRP 552 provides methodology and assumptions to measure and forecast the demand for bicycling based on population and employment data. The total number of new cyclists anticipated is based on the City of Lincoln's Travel Demand Model land use file, which provides population and employment data per traffic analysis zones (TAZs) for the City of Lincoln for both existing and future year 2035 scenarios.

Using the traffic analysis zone structure and the associated 2035 land use data, the amount of population and employment expected to utilize the proposed bicycle facilities included in the 2018 Lincoln BTP CIP Top Ten project list was determined. Ridership estimates are calculated based on population and employment values within one and one-half mile of the proposed project. Other inputs such as bicycle mode share of commute trips (0.7%), and adult population percentage of the total population (77.1%), were based on American Community Survey (ACS) 2012-2016 5-year estimates for the City of Lincoln, to inform these estimates.

Applying the NCHRP 552 methodology to these improvements yields 90 new bicycle commuters under near term conditions, and 138 new commuters under future conditions. The NCHRP 552 analysis also generates three demand response estimates for recreation cyclists: low, moderate, and high. In this case, Class I facilities assumed the high estimate; Class II and Class IV-Lite facilities assumed the moderate estimate, and intersection improvements assumed the low estimate. Applying the NHCRP 552 methodology to these improvements yields 325 new recreation cyclists under near term conditions, and 458 new recreation cyclists under future conditions.

The total reduction in vehicle miles traveled was estimated using a 7.0-mile average roundtrip distance, based on approximate trip lengths within the City, as well as approximate trip lengths to neighboring employment centers within reasonable biking distances. Applying the average trip length by the number of new riders yields an approximate reduction of 1,287 vehicle miles traveled under future conditions. This is shown in **Table 15**. Bicycle ridership estimates, for each Top Ten bikeway improvement are presented in **Appendix G**.

Table 15 – *Future Bicycle Ridership and Vehicle Miles Traveled Reduction for Top Ten Improvements*

RECREATION BENEFIT	PERSONS	BICYCLE MILES TRAVELED	VMT SAVED
Total New Commuters	138	966	966
Total New Recreation Cyclists	458	3,206	321
Total New Cyclists	**596**	**4,172**	**1,287**

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COST AND FUNDING ANALYSIS

COST ESTIMATES

Table 18 contains a unit cost summary for constructing the proposed bicycle facilities. However, these cost estimates should be used only to develop generalized construction cost estimates and project prioritization. More detailed estimates can be developed after preliminary engineering.

Table 18 – *Generalized Unit Cost Estimates for Bikeway Construction*

FACILITY TYPE	ESTIMATED COST PER MILE
Class III Bike Route	$2,500
Class II Bike Lane (Two-Way)	$50,675
Colored Bike Lane (Two-Way)	$273,435
Class I Bike Path	$1,392,763
Undercrossing	$1,498,150
Class IV-Lite Buffer Bike Lane	$78,638
Colored Buffered Bike Lane	$210,638
Double Buffered Bike Lane	$97,258
Colored Double Buffered Bike Lane	$229,258

GRADE CROSSING CONSTRAINTS

The proposed system may have locations that entail special grade crossing considerations to avoid conflicts. These locations may occur where major roads intersect with Class I or Class II facilities, Class I paths intersect with Class II facilities, or streams and/or creeks are present. Examples include the Class I bike path interface with Joiner Parkway north of Moore Road, State Highway 65 north of Ferrari Ranch Road, and State Highway 193 east of East Avenue. All three locations will require special design considerations for crossing the ravine.

MONETIZING THE SOCIETAL BENEFITS OF BICYCLING

The benefits of increased bicycle activity include the reduction of vehicular traffic on city roadways. As discussed in the previous section, the City of Lincoln's Top Ten bikeway improvements have the potential to save 1,287 of vehicle miles traveled. These savings result in a reduction in vehicular congestion and emissions, both of which are beneficial to the public. In addition, cycling, as a means of exercise and recreation, provides many public health benefits.

The abovementioned social benefits, among others, are monetized to estimate a benefit value to be compared against anticipated economic costs of bicycle facility infrastructure and maintenance. With an informed benefit value, decision makers are equipped with the information necessary to prioritize these improvements.

BENEFITS

Social benefit values are informed by research from the National Cooperative Highway Research Program (NCHRP), Minnesota Department of Transportation, and Midwest Regional University Transportation Center. Benefit values are based on the following assumptions.

- Existing cyclists near a new facility will shift from some other facility to the new one; and
- The new facility will induce new cyclists.

The number of potential new cyclists as a result of a new bicycle facility is used to estimate a benefit value, based on associated economic values given to mobility, health, recreation, and vehicular reduction benefits. The total estimated benefits for these comprehensive improvements is $56,446,444 over twenty years.

COSTS

Cost estimates for the City of Lincoln's Top Ten bicycle improvements are provided in **Appendix F**. The total estimated cost for these comprehensive improvements is $2,263,597 over twenty years, including operations and maintenance (O/M) costs.

BENEFIT-COST

Table 16 presents the monetized benefits, and the resulting benefit-cost ratio, associated with the City of Lincoln's comprehensive list of Top Ten bicycle improvements over twenty years.

Table 16 – *Top Ten Benefit-Cost*

PROJECT	BASE			FUTURE (20 Year)			Benefit/ Cost (B-C)
	Total Monetized Benefit			Total Monetized Benefit			
	Base Annual Benefit	20-Year Future Annual Benefit	"20 Year Total Benefit"	Capital Cost	20-Year O/M Cost	"20 Year Total Cost"	
Top 10	$2,210,291	$3,434,354	$56,446,444	$1,430,289	$833,308	$2,263,597	24.9
Note: Estimates based on proportion of High/Mod/Low estimates per improvement type							

As shown, implementation of the full the Top Ten bicycle improvement projects result in a B-C ratio of 24.9.

Table 17 presents the B-C ratios per each Top Ten bicycle improvements. Due to the fact that ridership estimates are calculated based on population and employment values within one and one-half mile of the proposed project, many of these Top Ten projects have overlapping ridership estimates. As such, the sum-total of new cyclists should not be used to determine the benefit of the Top Ten project list, comprehensively. However, each value is independenttly associated with its corresponding project, and can be used to present project-specific benefits.

Table 17 – *Top Ten Independent Benefit-Costs*

Project ID	Location	Boundary	Type	Total New Cyclists	Total 20-Year Benefit	Total 20-Year Cost	Benefit/ Cost (B-C)
B-001	East Avenue	9th St to McBean Park Dr	Class I and Class II	772	$19,845,548	$251,367	79
B-011	SR-65 Crossing	Moore Rd west and east of highway	Class I Crossing	391	$33,226,509	$575,408	58
B-015	1st Street	Douglas Dr to Joiner Pkwy	Class IV-Lite	277	$25,391,548	$105,689	240
B-016	1st Street	Joiner Pkwy to R Street	Class II	279	$25,325,148	$25,631	988*
B-020	E. Joiner Pkwy	Twelve Bridges Dr to north of Ranch View Dr	Class IV-Lite	138	$14,064,684	$258,403	54
B-022	5th Street	Joiner Pkwy to East Ave	Class II	371	$33,477,910	$130,341	257
B-028	Class I under E. Joiner Pkwy	E. Joiner Pkwy	Class I	307	$30,270,531	$335,704	90
I-013	Lincoln Blvd	1st Street; 3rd Street; McBean Park Drive; 5th Street; 6th Street; 7th Street	Bicycle Protection at Intersections	205	$20,422,001	$261,053	78
I-015	Lincoln Blvd	Ferrari Ranch Road	Bicycle Protection at Intersections	198	$20,042,293	$32,000	626*
I-017	E. Joiner Pkwy	Sterling Pkwy; Groveland Ln; Danbury Dr/Downing Cir; Moore Road; 1st Street; 3rd Street; 5th Street; Nicolaus Road	Bicycle Protection at Intersections	383	$33,615,253	$288,000	117

Note: Estimates based on proportion of High/Mod/Low estimates per improvement type

Benefits described here reflect enhanced conditions, more than other projects, which are focused on new ridership.

As shown, several projects have high B-C ratios due to the high benefit induced from low-cost improvements, such as painted pavement markings. For example, project #B-016 is only 0.31 miles in length. As such, the cost of painted Class II bike lanes is significantly less than the potential benefit accrued over a twenty year period.

In addition, project #I-017 includes bicycle protection improvements at intersections along a 2.3 mile segment of E. Joiner Parkway, thereby capturing a high number of new cyclists from surrounding neighborhoods and places of employment. Because bicycle protection improvements are not significantly costly, the resulting B-C ratio is high.

FEDERAL FUNDING SOURCES

Federal funding is administered through the state (Caltrans and the State Resources Agency) and regional planning agencies. Most, but not all, of these funding programs are oriented toward reducing auto trips and providing inter-modal connections. Many Federal programs require a local match of between 10-20%. Federal funding is intended for capital improvements and safety and education programs and projects must relate to the surface transportation system.

Federal Lands Highway Funds

Federal Lands Highway Funds may be used to build bicycle and pedestrian facilities in conjunction with roads and parkways at the discretion of the department charged with administration of the funds. The projects must be transportation-related and tied to a plan adopted by the State and Metropolitan Planning Organization. Federal Lands Highway Funds may be used for planning and construction and is managed by the United States Department of Transportation.

Transportation, Community and System Preservation Program

The Transportation, Community and System Preservation Program provides federal funding for transit oriented development, traffic calming and other projects that improve the efficiency of the transportation system, reduce the impact on the environment, and provide efficient access to jobs, services and trade centers. The program is intended to provide communities with the resources to explore the integration of their transportation system with community preservation and environmental activities. The Program funds, which are administered through the Federal Highway Administration (FHA) require a 20% match, and can be applied to planning, design and construction.

Land and Water Conservation Fund

The Land and Water Conservation Fund is a federally funded program that provides grants for planning and acquiring outdoor recreation areas and facilities. The Fund is administered by the National Parks Service and the California Department of Parks and Recreation. Cities, counties and districts authorized to acquire, develop, operate and maintain park and recreation facilities are eligible to apply. The application deadline is in May, and applicants must fund the entire project, and will be reimbursed for 50% of costs. Property acquired or developed under the program must be retained in perpetuity for public recreational use.

Congestion Mitigation and Air Quality Improvement Program (CMAQ)

CMAQ Funds are directed to transportation projects and programs which contribute to the attainment or maintenance of National Ambient Air Quality Standards in non-attainment or air quality maintenance areas for ozone, carbon monoxide, or particulate matter under provisions in the Federal Clean Air Act. Eligible projects include bicycle facilities.

Highway Safety Improvement Program (HSIP)

The Highway Safety Improvement Program is managed locally by Caltrans. For a project to be eligible for HSIP funds, the project must be on any public road, publicly owned bicycle path, pedestrian pathway, or trail. Projects must identify a specific safety problem that can be corrected or be improved significantly.

Regional Surface Transportation Program (RSTP)

Regional Surface Transportation Program (RSTP) funding is distributed based on population, among the urbanized and non-urbanized areas of the State through Metropolitan Planning Organizations (MPOs) such as SACOG and Regional Transportation Planning Agencies. Bicycle facilities are eligible for funding through the federally administered program.

Federal Safe Routes to School (SRTS)

The Federal Highway Administration replaced funding from SRTS in 2012. However, SRTS projects are eligible for

Transportation Alternatives Program (TAP) funds and for Surface Transportation Program (STP) funds. Eligible projects fall under the category of infrastructure (capital improvements), or non-infrastructure (education, encouragement, enforcement).

Transportation Enhancements (TE)

Federal Transportation Enhancement funds are to be used for transportation related capital improvement projects that enhance quality-of-life in or around transportation facilities. Facilities that qualify for TE funds include bicycle safety, education and facility projects. Transportation Enhancements projects are managed locally by Caltrans.

STATEWIDE FUNDING SOURCES

The State of California uses both federal sources and its own budget resources to fund bicycle projects and programs throughout the State.

Bicycle Transportation Account (BTA)

The Bicycle Transportation Account (BTA) is an annual program providing state funds for city and county projects that improve safety and convenience for bicycle commuters. In accordance with the Streets and Highways Code (SHC) Section 890-894.2 – California Bicycle Transportation Act, projects must be designed and developed to achieve the functional commuting needs and physical safety of all bicyclists. Local agencies establish eligibility for projects by preparing and adopting a Bicycle Transportation Plan (BTP) that complies with SHC Section 891.2 – 11 required elements (see Table 1). Funds are available for both planning and construction. Bicycle Transportation Account funding is administered by Caltrans. Caltrans anticipates approximately $7.2 million annually for eligible projects. The maximum amount available to any applicant through the Bicycle Transportation Account is no more than 25 percent of the total amount transferred to the BTA in a single fiscal year. Cities and counties are eligible to apply. All projects must be designed to the standards outlined in Chapter 1000 of the Highway Design Manual. The "call for projects" normally occurs between December and March of each year.

Community Based Transportation Planning Grant Program

This fund, administered by Caltrans, provides funding for projects that exemplify livable community concepts including bicycle improvement projects. Eligible applicants include local governments, Metropolitan Planning Organizations and regional transportation planning agencies. A 20% local match is required and projects must demonstrate a transportation component or objective. There is $3 million available annually statewide. The application deadline is normally in October.

Active Transportation Program (ATP)

The Active Transportation Program (ATP) consolidates existing federal and state transportation programs, including the Transportation Alternatives Program (TAP), Biycle Transportation Account (BTA), and State Safe Routes to School (SR2s), into a single program with a focus to ncrease active transportation in California. Projects should aim to increase the proportion of trips made by bicycling or walking, and increase safety and mobility for non-motorized users.

State Transportation Improvement Program (STIP)

All STIP projects must be capital projects (including project development costs) needed to improve transportation. Eligible projects include bicycle facility improvements and improved access to transit and are administered by Caltrans.

Transportation Development Act

Transportation Development Act Article 3 funds are state block grants awarded monthly to local jurisdictions for transit, bicycle and pedestrian projects in California by Caltrans. Funds for pedestrian projects originate from the Local

Transportation Fund, which is derived from a ¼ cent of the general state sales tax. Local Transportation Funds are returned to each county based on sales tax revenues. Article 3 of the Transportation Development Act sets aside 2% of the Local Transportation Funds for bicycle and pedestrian projects. Eligible pedestrian and bicycle projects include: construction and engineering for capital projects; maintenance of bikeways; bicycle safety education programs (up to 5% of funds); and development of comprehensive bicycle or pedestrian facilities plans. A city or county may use these funds to update their bicycle and pedestrian plan not more than once every five years. These funds may be used to meet local match requirements for federal funding sources. Application deadlines vary within individual county transportation agencies.

LOCAL AND REGIONAL FUNDING SOURCES

Developer Impact Fees

Traffic Impact Fees placed on new development typically cover the ultimate build-out of roadways associated with project improvements. The fees are reviewed and updated by the City every few years to reflect current economic conditions and improvement costs.

NON-TRADITIONAL FUNDING SOURCES

Community Development Block Grants

The Community Development Block Grant program provides money for streetscape revitalization, which may be largely comprised of pedestrian improvements such as sidewalks and safe crossing infrastructure. Federal Community Development Block Grant grantees may use these funds for activities that include (but are not limited to):

- acquiring real property
- reconstructing or rehabilitating housing and other property
- building public facilities and improvements, such as streets, sidewalks, community and senior citizen centers
- recreational facilities, paying for planning and administrative expenses, such as costs related to
- developing a consolidated plan and managing Community Development Block Grant funds
- provide public services for youths, seniors, or the disabled
- initiatives such as "neighborhood watch programs"

IMPLEMENTATION

Implementation of the proposed system will require funding from local, state, and federal sources and coordination with other agencies. To facilitate funding efforts, this section presents conceptual construction cost estimates for the recommended proposed system.

Compliance with the Bicycle Transportation Act (BTA) is a prerequisite for state bicycle funding eligibility. Given that state/federal sources for bicycle funding has significantly increased since the previous update, this plan was developed to serve as an information resource to facilitate pursuing bicycle funding. Of the potential sources of competitive grant programs that are applicable to funding bicycle improvements, the following are likely candidates for consideration by the City of Lincoln:

- BTA
- State Active Transportation Program (ATP);
- SB-1 ATP Augmentation;
- SB-1 Solutions for Congested Corridors;
- SB-1 Sustainable Communities Planning;
- State Highway Safety Improvement Program (HSIP);
- Systemic Safety Analysis Resource Program (SSARP);
- Federal Active Transportation Program (ATP); and,
- Federal Congestion Mitigation and Air Quality (CMAQ).

Ostensibly, requisite data/information developed as part of this 2018 Bicycle Transportation Plan (BTP) will serve to inform future competitive grant applications and enhance the City's relative competitiveness for funding selection.

Simply providing bicycle infrastructure does not guarantee that the majority of potential bicycle riders will actually choose to utilize it if the riding experience is perceived as being stressful or unsafe. In acknowledgement of this, a Traffic Level of Stress (TLS) analysis was performed to identify bikeway network continuity issues caused not only by infrastructure gaps or physical barriers, but also by roadway segments or intersections characterized by moderate to high traffic volumes or speed that could serve to dissuade less confident cyclists from traversing. Concurrent with this technical analysis, a comprehensive public outreach effort was also performed to identify needs. The outreach effort entailed the following:

- Two public workshops – one at the beginning of the study and one at it conclusion;
- Circulation of project information cards to schools and the public;
- Development of a stakeholder and public contact list;
- Periodic eBlasts to inform the public and stakeholders of upcoming project related events and/or information on how to provide input;
- Development and upkeep of a project specific website;
- Access to on-line survey on the project website; and,
- Development of an interactive web-based tool for soliciting geo-referenced comments and suggestions from the public.

The results of the public outreach effort was documented and considered together with the technical connectivity analysis results to ultimately inform the identification of the proposed bikeway system network and the needed bicycle infrastructure improvements to complete the network. This process resulted in the identification of 31 bicycle infrastructure improvements and an additional 22 improvements at specific intersections within the city. Improvement concepts were based on the updated bicycle guidelines and design standards informed by, but not limited to, the following documents:

- California Department of Transportation (Caltrans), Chapter 1000; Bikeway Planning and Design contained in the Highway Design Manual, 6th Edition;
- California Manual on Uniform Traffic Control Devices, 2010 Edition;
- National Association of City Transportation Officials' (NACTO) Urban Streets Design Guide and Urban Bikeway Design Guide; and,
- Sacramento Area Council of Governments (SACOG) Complete Streets Resource Toolkit.

Of the total 53 bicycle improvements in the capital improvement program (CIP), ten projects were identified as high priority by the City. Public input and the connectivity analysis results were key determinants during the top ten selection process. For these ten improvements, ATP grant compatible performance metrics/rubrics using the National Cooperative Highway Research Program 552 methods were used to quantify mode shift and vehicle miles of travel (VMT) reduction benefits. These societal benefits were monetized based on the Caltrans 2016 Economic Parameters and combined with planning level cost opinions to yield a benefit-cost (B-C) ratio for each improvement and inform a priority ranking for implementation. The use of B-C as the holistic metric for determining the return on investment for state/federal funding is a key criteria for most if not all competitive grant programs – including those listed above. This technical information will assist the City on future competitive grant cycle applications for bicycle funding and facilitate implementation of its top ten bicycle improvement projects.

BIKEWAY SYSTEM PHASING

The specific implementation of any given route or facility, with all other things considered equal, should be based on the following criteria:

- Where an opportunity, such as a road widening or -repaving, makes implementation favorable.
- Where new roadways are constructed as part of the general plan development process.
- To complete improvements contained in adopted plans that add to circulation efficiency, completeness, and safety
- Where an eminent loss of an opportunity makes implementation necessary.
- Where resolution of a major obstacle, such as railroad levees, creeks, or embankments, makes implementation necessary.
- Where the segment is not connected or otherwise poorly accessible from the rest of the system

In addition, the benefit-cost (B-C) ratios provided for each Top 10 bicycle improvement should inform the bikeway system phasing process.

In many situations, the most needed bicycle improvement may not be implemented first. In these cases, external factors such as new construction creates opportunities to provide new bicycle facilities without consideration for need. Therefore, the proposed system does not include a ranking of specific routes, but does include the following list of high priority routes.

- East Avenue from 12th Street to McBean Park Drive
- 1st Street from Douglas Drive to Lincoln Boulevard
- E. Joiner Parkway from Twelve Brdiges Drive to North of Ranch View Drive
- 5th Street from Joiner Parkway to East Avenue
- Lincoln Boulevard from 1st Street to 7th Street
- Lincoln Boulevard from 1st Street to Ferrari Ranch Road
- E. Joiner Parkway from Sterling Parkway to Nicolaus Road

BICYCLE TRANSPORTATION PLAN UPDATE

City of Lincoln, California

APPENDIX A: Design Guidelines

Kimley»Horn

TRAFFIC MEMORANDUM

To:	Roland Neufeld, Project Manager City of Lincoln
From:	Adam Chase, P.E., T.E., Kimley-Horn and Associates Jim Damkowitch, Kimley-Horn and Associates
Date:	January 9th, 2018
Subject:	Bicycle Transportation Plan Update - Planning and Design Standards Section Update

Design Standards

Bikeway planning and design in California rely on the guidelines and design standards established by the California Department of Transportation (Caltrans) and supporting guides as documented in:

- Chapter 1000; *Bicycle Transportation Design*, contained in the Highway Design Manual, 6th Edition (California Department of Transportation, 2017) with supporting Chapters 200, 300, and 400.
- California Manual on Uniform Traffic Control Devices, 2014 Edition, Revision 2
- Caltrans, Design Information Bulletin Number 89, *Class IV Bikeway Guidance*
- Federal Highway Administration (FHWA), *Separated Bike Lane Planning and Design guide*, 2015
- American Association of State Highway and Transportation Officials (AASHTO), *Guide for the Development of Bicycle Facilities*, 2012, Fourth Edition
- National Association of City Transportation Officials (NACTO), *Urban Bikeway Design Guide*, 2014
- Massachusetts Department of Transportation (MDOT), *Separated Bike Lane Planning and Design Guide*, 2015

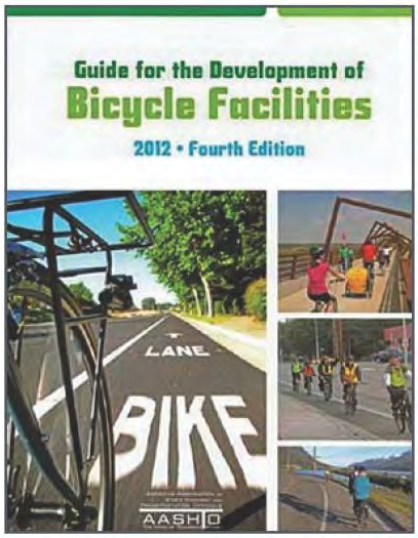


Figure 1: AASHTO Guide for the Development of Bicycle Facilities, 2012 Edition

Where possible, it may be desirable to exceed the minimum standards. These guidelines cover basic concepts. The HDM Chapter 1000 contains more detailed standards and guidance and should be followed. The City may also reference the AASHTO Guide, and the NACTO Urban Bikeway Design Guide. Caltrans has supported the NACTO from a memorandum dated August 20, 2013 for Bicycle and Pedestrian Facility Design Flexibility. The NACTO addresses more recently developed bicycle

design treatments and techniques. It provides options that can help create "complete streets" that better accommodate bicyclists. Many treatments in the NACTO guide are compatible with Caltrans HDM policies and demonstrate new and innovative solutions for the varied urban settings across the country. The vast majority of treatments illustrated in the NACTO guide are either allowed or not precluded from the CA-MUTCD. In addition, non-compliant traffic control devices may be piloted through the CA-MUTCD experimentation process.

This section also references the uniform standards and specifications for traffic control devices under the 2014 California Manual on Uniform Traffic Control Devices (CA-MUTCD).

Experimental Devices

Given that they are not currently adopted by the FHWA MUTCD or CA MUTCD, a number of recommended devices currently being implemented in California are considered experimental.

These devices appear to be promising improvements in bicycle and pedestrian access and safety as they have been widely used in Europe and experimented with in the US. Any jurisdiction wishing to use these treatments should follow the appropriate experimental procedures. Colored bike lanes have been given blanket interim approval for use in California. For these, the City only needs to notify Caltrans that it will use these. Bike boxes and colored treatments of shared lane markings are approved for experimentation by the Federal Highway Administration (FHWA). To conduct these experiments, the City would need to follow the guidelines set forth by the FHWA here: https://mutcd.fhwa.dot.gov/condexper.htm and to the California Traffic Control Device Committee following their guidelines set forth in Section 1A.10 of the CA MUTCD.

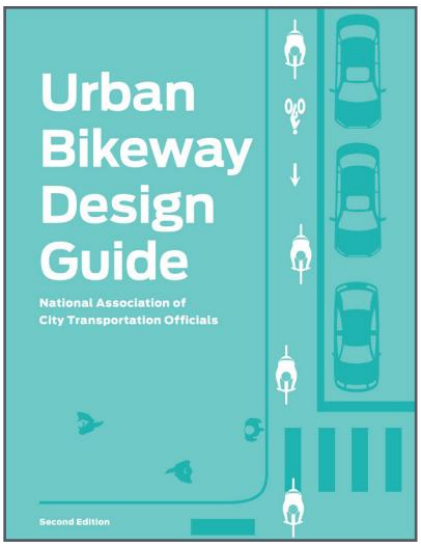


Figure 2: NACTO Urban Bikeway Design Guide, 2014 Edition

Bicycle Design Guidelines:

The following guidelines present the recommended minimum design standards and other recommended ancillary support items for:

CLASS I BIKE PATHS

CLASS II BIKE LANES

Striped Class II Bike Lanes

Colored Bike Lanes – Green Pavement Markings

Buffered Bike Lanes – with On-Street Parking

Double Buffered Bike Lanes – with On-Street Parking

CLASS III BIKE ROUTES

Sharrows

CLASS IV SEPARATED BIKE LANES

Buffered Bike Lanes – Without On-Street Parking

Double Buffered Bike Lanes – Without On-Street Parking

Class IV Separated Bike Lanes

One-way Separated Bike Lanes

Two-way Separated Bike Lanes

SIGNING AND MARKINGS

Colored Pavement Treatments

Bike Route Wayfinding Signage

INTERSECTIONS

Bikeway Markings at Intersections

Bike Boxes

Two-Stage Turn Queue Boxes

Protected Intersections – Class IV

BICYCLE SIGNALS

Bicycle Signal Heads

Bicycle Signal Detection

Bicycle Countdowns

Leading Bicycle Intervals

BICYCLE PARKING

CLASS I BIKE PATHS

Facility Design

Class I bike paths should generally be designed as separated facilities away from parallel streets.

They are commonly planned along rights-of-way such as waterways, utility corridors, railroads, and the like that offer continuous separated riding opportunities.

Figure 3: No Motor Vehicles (R5-3) Sign

Adherence to Design Guidelines

All Class I bike paths should conform to the design guidelines set forth by Caltrans. This is due to associated regulations with state and federal funded projects to meet standards associated with pedestrian and bicycle safety, geometrics, and ADA facilities. Class I bike paths uphold standards that benefit all users but specifically longer distance cyclists that may utilize said facilities to/from daily destinations.

Multiuse paths and unpaved facilities that are not funded with federal transportation dollars and that are not designated as Class I bike paths do not need to be designed to Caltrans standards.

Where Possible, Separate from Sidewalks

Both AASHTO and Caltrans recommend against using most sidewalks for bike paths. This is due to conflicts with driveways and intersections.

Figure 4: Class I Bike Path

Where sidewalks are used as bike paths, they should be placed along routes with few driveways and intersections, be properly separated from the roadway, not contain obstructions (bus stops, signs, trees, trash receptacles, etc.) and have carefully designed intersection crossings.

Recommended Widths

Bike paths should have a minimum of 8' of pavement, with at least 2' of unpaved shoulders for pedestrians/runners, or a separate pathway for pedestrians/runners where feasible. A pavement width of 10' to 12' is preferred.

Figure 5: Example Class I Bike Path

Roadway Crossings Design

Class I bike path roadway crossings should be carefully engineered to accommodate safe and visible crossing for users. The design needs to consider the width of the roadway, whether it has a median, and the roadway's average daily and peak-hour traffic volumes. Crossings of low-volume streets may require simple stop signs.

Crossings of streets with Average Daily Traffic (ADT) of over 15,000 vehicles per hour should be assessed for signalized crossing, flashing LED beacons, crossing islands, or other devices. Roundabouts may be a desirable treatment for a bike path intersecting with roadways where the bike path is not next to a parallel street.

Lighting

Lighting should be provided where bicyclists will likely use the bike path in the late evening, such as along commuter routes.

Physical Barriers & Signs

Barriers at path entrances to prevent motorized vehicles from entering, such as obstacle posts and gates, can obstruct bicyclists and should be avoided when possible. Typically, barriers should not be considered until after it has been determined that other measures to prevent motor vehicles from entering have failed, and where the safety and other issues posed by unauthorized vehicles are more serious than the safety and access issues posed to path users. Signs and other design solutions are preferred.

Figure 6: Example Physical Obstacle Posts

Maintenance & Emergency Vehicle Access

Bike path construction should take into account vertical requirements and the impacts of maintenance and emergency vehicles on shoulders.

CLASS II BIKE LANES

STRIPED CLASS II BIKE LANES

Facility Design

Class II bike lanes are a portion of the roadway designated for preferential use by bicyclists; they have been designated by striping, signage, and pavement markings.

Figure 7: Class II Bike Path

Bike lanes run adjacent to the travel lanes and flows in the same direction as motor vehicle traffic. Bike lanes are typically on the right side of the street, between the adjacent travel lane and curb, road edge, or parking lane.

Figure 8: Example Class II Bike Lane

Adherence to Design Guidelines

The following guidelines should be used when designing Class II bikeway facilities. The Caltrans HDM Chapter 1000, AASHTO, and the CA-MUTCD provide these guidelines.

Recommended Widths

Class II Bike Lane facilities should conform to the minimum design standard of 5’ in width in the direction of vehicle travel adjacent to the curb lane. Where space is available, a width of 6’ to 8’ is preferred, especially on busy arterial streets, on grades, and adjacent to parallel parking. Under certain circumstances, bike lanes may be 4’ in width. Situations where this is permitted include:

Figure 9: Example Class II Bike Lane Striping

- Bike lanes located between through traffic lanes and right turn pockets at intersection approaches
- Where there is no parking, the gutter pan is no more than 12” wide, and the pavement is smooth and flush with the gutter pan
- Where there is no curb and the pavement is smooth to the edge

Signs

"Bike Lane" (R81) and "Bike Route" (D11-1) Signage shall be posted after every significant intersection along the route of the bike lane facility. "Begin" and "End" plaques (R81A or R81B) should accompany the "Bike Lane" sign when appropriate. The route number shown on the Bike Route Identification sign should correspond to the latest City Bicycle Routes and Facilities Map. The Bike Route Identification sign can also be used in conjunction with an arrow plaque (M6 series) in advance of another approaching bike lane or route to direct bicyclists.

If a bike lane exists where parking is prohibited, "no parking" signage may accompany bike lane signage.

Figure 10: Bike Lane (R81) and Bike Route (D11-1) Sign

Striping

Bike lanes should be striped with a 6" wide solid white stripe of (CA MUTCD Detail 39) and should be dashed (Detail 39A) at an intersection approach. The length of Detail 39A shall be 100' when the block is short (less than 400') and 200' where the block is longer or vehicle speeds are high (greater than 35 mph). The dashed bike lane stripe allows for use of the bike lane as a right-turn pocket for motor vehicles.

Bike lanes with two stripes are more visible than those with one and are preferred. The second inside stripe (4" solid white) would differentiate the bike lane from the parking lane where appropriate.

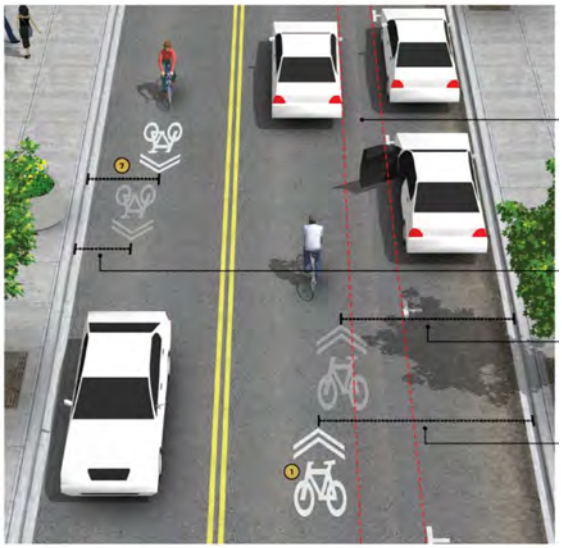


Figure 11: Class II Bike Lane Marking

Markings

At the beginning of each and end of each block and at approximately 150' to 250' intervals, pavement stencils of a bicycle and arrow shall be used to show the direction of travel. The stencils at the end of the block should be placed just before the dashed bike lane stripe (Detail 39B).

Intersection Treatments

Where space permits, intersection treatments should include bike lane 'pockets'. At signalized intersections, loops or other means of bicycle detection should be installed near the limit line in the bike lane and all vehicle lanes that have detection. Signal timing and phasing should be set to accommodate bicycle acceleration

Figure 12: Example Class II Intersection Treatment

speeds. Painted bicycle detector stencils may be placed at detection zones located within the bike lane to notify bicyclists where they can actuate the signal. Traffic signals can be timed and coordinated for cyclists (where appropriate).

Figure 13: Class II to Class III Bike Signage

Transitions from Class II Bike Lanes to Class III Bike Routes

Where bike lanes terminate, they typically should transition to a Class III bike route when possible. Cyclists should be notified through a sign that includes the Bike Lane sign (R81) with End plaque (R81B). Shared lane markings (sharrows) should be placed in the transition zone to help guide cyclists to the proper place to

ride in the lane and a supplemental "Bicycles May Use Full Lane" R4-11 Sign spaced with a "Pass Bicycle 3 Feet Min" R117 (CA) Sign. Class III bike route time, distance and destination signs should help provide continuity.

Roadway Conditions

When bike lanes are to be implemented on existing roadway surfaces, it is important to identify and remediate any longitudinal cracking greater than ½" wide, vertical deformations such as utility covers that are not flush, and other conditions that may affect rideability.

COLORED BIKE LANES

Green bicycle lanes increase visibility for cyclists. The Federal Highway Administration (FHWA) and the California Traffic Control Device Committee have approved green bike lanes on an interim basis per CA-MUTCD IA-14; Interim Approval for Optional Use of Green Colored Pavement for Bike Lanes. The State of California has requested and received approval from the FHWA to implement CA-MUTCD IA-14 statewide.

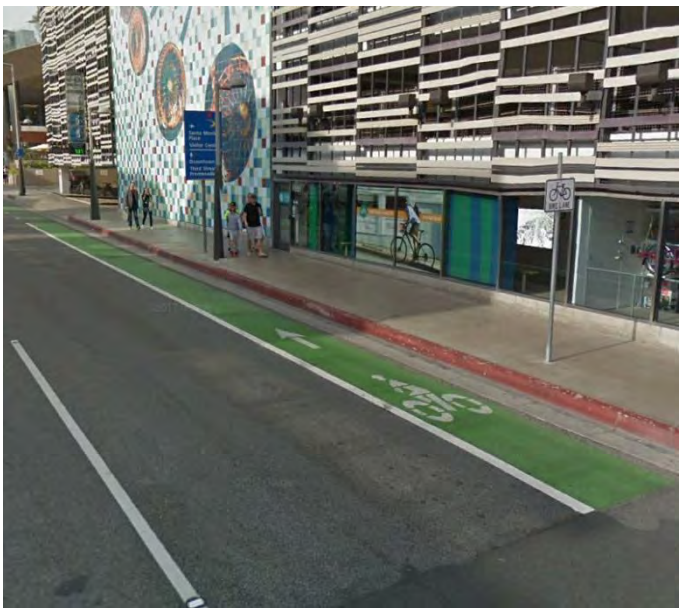


Figure 14: Example Green Colored Class II Bike

Consequently, the City may implement green bike lanes without need to notify the State or FHWA, provided the CA MUTCD guidelines are followed. Green bicycle lanes are sometimes used as "conflict zone" treatments. They are short lanes that are used at right-turn pockets or driveways to alert right-turning motorists of the bike lane. Green bicycle lanes can also be used as a continuous treatment spanning the extended length of a bike lane corridor.

BUFFERED BIKE LANES – WITH ON-STREET PARKING

Buffered bike lanes provide a painted divider between the bike lane and the adjacent travel lane. This additional space can improve the comfort of cyclists, as they don't have to ride as close to motor vehicles. Buffered bike lanes can also be used to narrow travel lanes, which slows traffic. Buffered bike lanes are most appropriate on wide, busy streets. They can be used on streets where physically separating the bike lanes with protected bike lanes is undesirable for cost, operational, or maintenance reasons.

Figure 15: Example Buffered Bike Lane with On-Street Parking

DOUBLE BUFFERED BIKE LANES – WITH ON-STREET PARKING

Double buffered bike lanes provide a painted divider on both the travel lane and the parking lane. This additional buffer between parked cars and bike lanes directs cyclists to ride outside of the door zone of the parked cars. These are most important with significant parking turnover.

CLASS III BIKE ROUTES

Facility Design

Class III bike routes are typically simple signed routes along street corridors, usually local streets and collectors. With proper route signage, design, and maintenance, bike routes can be effective in guiding bicyclists along a route suited for bicycling that does not have enough roadway space for a dedicated Class II bike lane. Class III bike routes can be designed in a manner that encourages bicycle usage, convenience, and safety.

Figure 16: Class III Bikeways with Sharrows

Bike routes can become more useful when coupled with the following techniques:

- Route, directional, and distance signage (optional: time)
- Wide curb lanes
- Shared lane marking stencils painted in the traffic lane along the appropriate path of where a bicyclist would ride in the lane
- Accelerated pavement maintenance schedules
- Traffic signals timed and coordinated for cyclists (where appropriate)

- At signalized intersections, loop detectors or other means of bicycle detection should be installed near the limit line in all vehicle lanes that have vehicle detection.
- Traffic signals can be timed and coordinated for cyclists (where appropriate). Signal timing and phasing should be set to accommodate bicycle acceleration speeds.
- Traffic calming measures
- Remediation of longitudinal cracking greater than ½" wide, utility covers that are not flush, vertical deformations, and other conditions that may affect rideability.

Figure 17: Example Class III Bikeway with Sharrows

Signs

"Bike Route" (D11-1) signage should be posted after every intersection along the route to inform bicyclists that the bikeway facility continues and alert motorists to the presence of bicyclists. "Begin" and "End" plaques (M4-14 and M4-6) should accompany the Bike Route sign when appropriate. The route number shown on the Bike Route Identification sign should correspond to the latest City Bicycle Routes and Facilities Map. The Bike Route sign can also be used in conjunction with an arrow plaque (M6 series) in advance of another approaching bike route or lane to direct bicyclists. If a bike route exists where parking is prohibited, "no parking" signage may accompany bike lane signage.

SHARROWS

Facility Design

Sharrow stencils are recommended as a way to enhance the visibility and safety of Class III bike routes. Sharrows (officially known as "shared lane markings") indicate to cyclists the proper position to ride within the travel lane and assist with wayfinding. They also alert motorists that the travel lane is to be shared with bicyclists.

Adherence to Design Guidelines

CA MUTCD, Section 9C.103(CA) Shared Roadway Bicycle Markings states: "The shared roadway bicycle marking shall only be used on a roadway (Class III Bikeway (Bike Route) or Shared Roadway (No Bikeway Designation))."

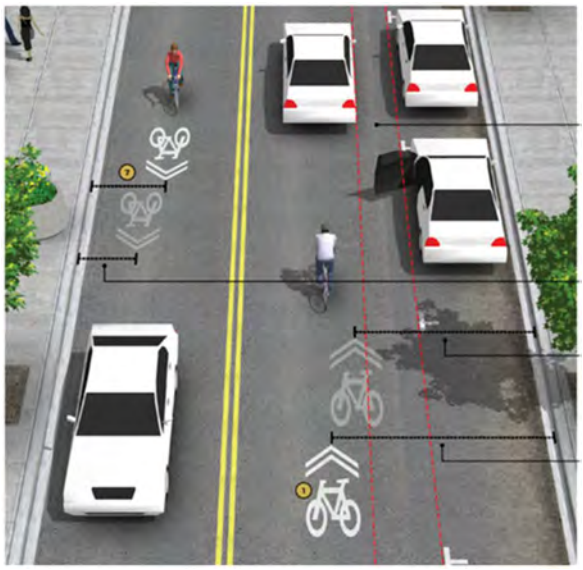


Figure 18: Example Sharrow Markings

Placement & Spacing of Sharrows

When used on streets with on-street parking, sharrows are to be placed such that the centers of the markings are a minimum of 11' from the curb face or edge of paved shoulder on streets with on-street parallel parking. Where space is available, 12' or more from the curb is preferred. On streets without on-street parking that have an outside travel lane that is less than 14' wide, the centers of the sharrows should be at least 4' from the face of the curb.

On two-lane roadways, these minimum distances allow vehicles to pass bicyclists on the left within the same lane without encroaching into the opposite lane of traffic. (On multi-lane roadways, motorists must change lanes to pass a cyclist.)

On streets with on-street parking, installing sharrows more than 11' from the curb will also move the bicyclist farther from the "door zone" (approximately 4').

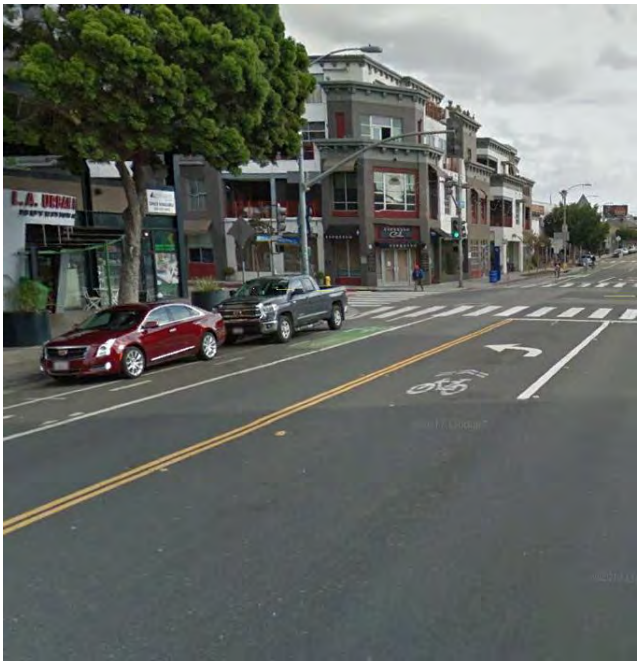


Figure 19: Sharrow Markings with On-Street Parking

Sharrows should be placed in straight lines to encourage the bicyclist to travel in a straight line. This often means the sharrows are in the center of the lane, greater than the minimum guideline of 4' or 11' from the curb. Sharrows should always be placed outside the "door zone" where on-street parking is provided.

CLASS IV SEPARATED BIKE LANES

Facility Design

Separated bike lanes, sometimes called "protected bike lanes" or "cycle tracks" provide a physical barrier between the bike lane and the adjacent travel lanes, parking lanes, and sidewalks. They are most effective in attracting users who are concerned about conflicts with motorized traffic.

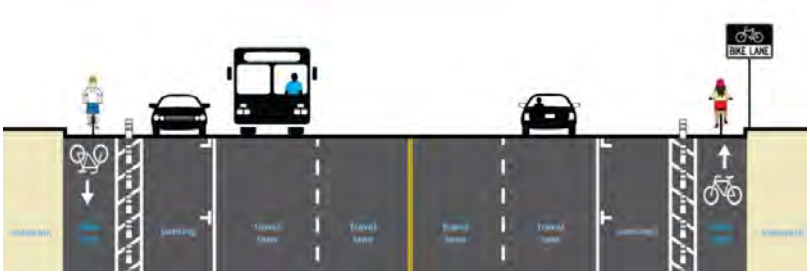


Figure 20: Class IV Bike Lanes

Separated bike lanes may be one-way or two-way. They may also be at the level of the street, at the level of the sidewalk, or between the two. If they are at the sidewalk level, different pavement colors and textures separate the bike lanes from the sidewalks. If at the street level, they can be separated from the travel lanes by physical barriers. If there is on-street parking they are placed between the sidewalk and parking.

Adherence to Design Guidelines

The design guidelines issued by Caltrans for Class IV separated bike lanes are compliant with HDM Chapter 1000 and the CA MUTCD.

BUFFERED BIKE LANES – WITHOUT ON-STREET PARKING

Buffered bike lanes with no on-street parking provide additional protection and can be considered a Class IV facility. The buffered space provides a painted divider between the bike lane and the adjacent travel lane. This additional space can improve the comfort of cyclists, as they don't have to ride as close to motor vehicles. Buffered bike lanes can also be used to narrow travel lanes, which slows traffic. Buffered bike lanes are most appropriate on wide, busy streets. They can be used on streets where physically separating the bike lanes with protected bike lanes is undesirable for cost, operational, or maintenance reasons.

Figure 21: Example Class IV Buffered Bike Lanes Without On-Street Parking

ONE-WAY SEPARATED BIKE LANES

Types of Separation

The methods of vertical separation can be implemented with a variety of design approaches. Separated bike lanes can be separated from motor traffic by raised medians, concrete curbs, landscaping, on-street parking, bollards, flexible delineator posts, or by a change in elevation between the bike lane and the travel lane.

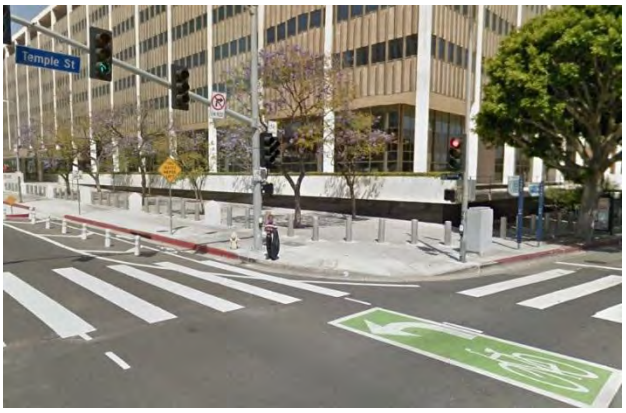


Figure 22: Example Class IV One-Way Separated Bike Lane

Intersection Design

Separated bike lanes tend to work most effectively where there are few uncontrolled crossing points with unexpected traffic conflicts. These concerns include treatment at intersections, uncontrolled midblock driveways and crossings, and difficulty accessing or exiting the facility at midblock locations.

If the separated bike lanes are parking protected, parking should be prohibited near the intersection to improve visibility. The recommended no-parking zone is 30' from each side of the intersection crossing.

Figure 23: Example Class IV One-Way Separated Bike Lane

Two-stage turn queue boxes should be provided to assist in making turns from the separated bike lane facility.

A dedicated bicycle signal phase can prevent conflicts at intersections between turning vehicles and bicyclists.

Figure 24: Example Class IV One-Way Separated Bike Lane

Markings

Pavement stencils of a bicycle and arrow markings shall be placed at the beginning of a separated bike lane facility and at periodic intervals along the facility to define the bike lane direction and designate that portion of the street for preferential use by bicyclists.

Maintenance

The separated bike lane area to be used by bicycles should be designed with adequate width for street sweeping to ensure that debris will not accumulate.

Adherence to ADA Considerations

When providing accessible parking spaces along separated bike lanes, the following design considerations are recommended to accommodate persons with disabilities in the design of one-way and two-way separated bike lanes:

- Widened buffer space to accommodate a side mounted vehicle ramp or lift
- Mid-block curb ramps and tactile surfaces may be provided near accessible parking spaces
- Roadway cross-slopes that do not exceed a 2% grade
- If bollards are used, consider placement to avoid impeding access by disabled users

One-way separated bike lanes are bikeways that are at street level and use a variety of methods for physical protection from motor traffic. They are generally placed on both sides of the street.

Recommended Widths

The minimum recommended width for a one-way separated bike lane is 5', although 6' is preferred. Areas with high bicyclist volumes or uphill sections, the recommended minimum width is 7' to allow for bicyclists passing each other.

At least 3' is recommended for a parking buffer to allow for passenger loading and to prevent "dooring" collisions. Without a parking buffer, 2' is preferred.

TWO-WAY PROTECTED BIKE LANES

Two-way separated bike lanes are bikeways that are physically separated bikeways that allow bicycle movement in both directions on one side of the street. Two-way separated bike lanes share some of the same design characteristics as one-way separated bike lanes but may require additional design considerations at driveway and side-street crossings.

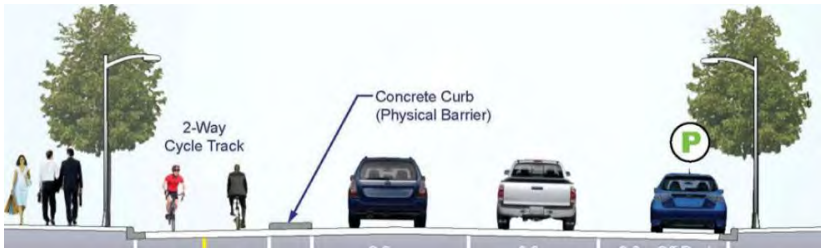


Figure 25: Class IV Two-Way Protected Bike Lane

Figure 26: Example Class IV Two-Way Protected Bike Lane

Recommended Widths

The preferred width for a two-way separated bike lane is 12'. Minimum width in constrained locations is 8'.

At least 3' is recommended for a parking buffer to allow for passenger loading and to prevent "dooring" collisions. Without a parking buffer, 2' is preferred.

SIGNING AND MARKINGS

COLORED PAVEMENT TREATMENTS

- Pavement coloring is useful for a variety of applications in conjunction with bicycle facilities. The primary goal of colored pavements is to differentiate specific portions of the traveled way, but colored pavements can also visibly reduce the perceived width of the street.
- Colored pavements are used to highlight conflict areas between bicycle lanes and turn lanes, especially where bicycle lanes merge across motor vehicle turn lanes. Colored pavements can be used in conjunction with shared lane markings in heavily used commercial corridors where no other provisions for bicycle facilities are evident.

Figure 27: Example Green Colored Pavement Markings

- While a variety of colored treatments have been used, FHWA has approved a bright green for interim use. Maintenance of color and surface condition are considerations. Traditional traffic paints and coatings can become slippery. Long life surfaces with good wet skid resistance should be considered.
- Additional colors may be utilized on a case to case basis as approved by the City.

Type of Colored Pavement Markings There are several different types of Colored Pavement Markings that manufacturers supply for bicycle treatments, the cost and design life are typically dependent on use within high-traffic areas subjected to vehicular traffic. Pavement Markings shall be durable, high skid and slip resistant, pavement marking suitable for use as a bike lane, bike path for use on Asphalt or Portland Cement Concrete Pavement surfaces:

- Epoxy-modified, acrylic, waterborne coating. Applied in thin layers, allowing each layer to dry to the touch.
    - Recommended for long lane, no to low traffic delineation areas
- Preformed Thermoplastic Pavement Markings (Contrast Markings)
    - Lasts 6 to 8 times longer than paint. Great for bike boxes and use in high-traffic areas subjected to vehicular traffic.
- Methyl Methacrylate (MMA) traffic paints are two-component liquid pavement marking/traffic striping materials that consist of a MMA resin (pigmented) and a catalyst. They are mixed and applied with glass beads.
    - Long lasting color retention, higher costs than most, open to traffic in 60 minutes, better wearing than thermoplastic, may have a lower life-cycle cost.

WAYFINDING

The ability to navigate through a region is informed by landmarks, natural features, signs, and other visual cues. Wayfinding is a cost-effective and highly visible way to improve the bicycling environment by familiarizing users with the bicycle network, helping users identify the best routes to destinations, addressing misconceptions about time and distance, and helping overcome a barrier to entry for infrequent cyclists (e.g., “interested but concerned” cyclists).

A bikeway wayfinding system is typically composed of signs indicating direction of travel, location of destinations, and travel time/distance to those destinations; pavement markings indicating to bicyclists that they are on a designated route or bike boulevard and reminding motorists to drive courteously; and maps providing users with information regarding destinations, bicycle facilities, and route options.

Figure 28: Example Way Finding Sign

INTERSECTIONS

Intersections are junctions at which different modes of transportation meet and facilities overlap to compete for the same space (right-of-way). A well-designed intersection facilitates the interchange between bicyclists, pedestrians, motorists, and transit so traffic flows in a safe and efficient manner. Designs for intersections with bicycle facilities should reduce conflicts between bicyclists (and other vulnerable road users) and vehicles by heightening visibility, denoting a clear right of way, and ensuring that the various users are aware of each other. Intersection treatments can resolve both queuing and merging maneuvers for bicyclists, and are often coordinated with timed or specialized signals.

The configuration of a safe intersection for bicyclists may include additional elements such as color, signs, medians, signal detection, and pavement markings. Intersection design should take into consideration existing and anticipated bicyclist, pedestrian, and motorist movements. In all cases, the degree of mixing or separation between bicyclists and other modes is intended to reduce the risk of crashes and increase bicyclist comfort. The level of treatment required for bicyclists at an intersection will depend on the bicycle facility type used, whether bicycle facilities are intersecting, the adjacent street function, and the adjacent land use.

BIKEWAY MARKINGS AT INTERSECTIONS

Continuing marked bicycle facilities at intersections (up to the crosswalk) ensures that separation, guidance on proper positioning, and awareness by motorists are maintained through these potential conflict areas. The appropriate treatment for right-turn only lanes is to place a bike lane pocket between the right-turn lane and the right-most through lane. If a full bike lane pocket cannot be accommodated, a shared bicycle/right turn lane can be installed that places a standard-width bike lane on the left side of a dedicated right-turn lane. A dashed strip delineates the space for bicyclists and motorists within the shared lane. This treatment includes signs advising motorists and bicyclists of proper positioning within the lane. Sharrows are another option for marking a bikeway through an intersection where a bike lane pocket cannot be accommodated.

BIKE BOXES

A bike box is a designated area at the head of a traffic lane at a signalized intersection that provides bicyclists with a safe and visible way to get ahead of queuing traffic during the red signal phase. Appropriate locations include:

- At signalized intersections with high volumes of bicycles and/or motor vehicles, especially those with frequent bicyclist left-turns and/or motorist right-turns
- Where there may be right or left-turning conflicts between bicyclists and motorists
- Where there is a desire to better accommodate left-turning bicycle traffic

Figure 29: Example Bike Box

- Where a left turn is required to follow a designated bike route or boulevard or access a shared-use path, or when the bicycle lane moves to the left side of the street
- When the dominant motor vehicle traffic flows right and bicycle traffic continues through (such as at a Y intersection or access ramp)

TWO-STAGE TURN QUEUE BOXES

On right side protected bike lanes, bicyclists are often unable to merge into traffic to turn left due to physical separation. This makes the provision of two-stage left turns critical in ensuring these facilities are functional. The same principles for two-stage turns apply to both bike lanes and protected bike lanes. While two-stage turns may increase bicyclist comfort in many locations, this configuration will typically result in higher average signal delay for bicyclists due to the need to receive two separate green signal indications (one for the through street, followed by one for the cross street) before proceeding.

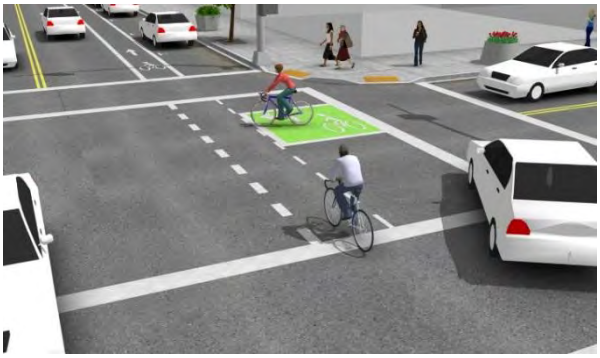


Figure 30: Example Two-Stage Turn Queue Bike Box

PROTECTED INTERSECTIONS

These intersections have islands and crosswalks that allow people on bicycles to advance further in the intersection than motor vehicles, and to stay to the right of motor vehicles. The islands protect bicyclists at the intersections. These treatments are designed in conjunction with and next to pedestrian crossings.

Figure 31: Protected Intersection

BICYCLE SIGNALS

BICYCLE SIGNAL HEADS

Bicycle signal heads may be installed at signalized intersections to improve identified safety or operational problems for bicyclists; they provide guidance for bicyclists at intersections where bicyclists may have different needs from other road users (e.g., bicycle-only movements and leading bicycle intervals) or to indicate separate bicycle signal phases and other bicycle-specific timing strategies. A bicycle signal should only be used in combination with an existing conventional or hybrid beacon. In the United States, bicycle signal heads typically use standard three-lens signal heads in green, yellow, and red with a stencil of a bicycle.

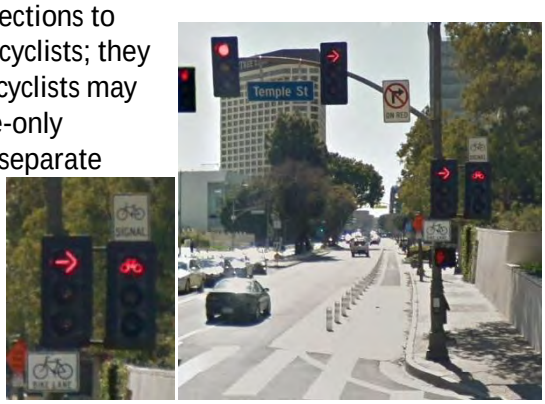


Figure 32: Example Bicycle Signal Heads

Currently the CA-MUTCD guidance states that right turn on reds must be restricted if bicycle signal heads are utilized at a traffic signal, otherwise the pedestrian signal/phase can be utilized.

Bicycle Signal Detection

Bicycle detection is used at actuated traffic signals to alert the signal controller of bicycle crossing demand on a particular approach. Bicycle detection occurs either through the use of push buttons or by automated means (e.g., in-pavement loops, video, and microwave). Inductive loop vehicle detection at many signalized intersections is calibrated to the size or metallic mass of a vehicle, meaning that bicycles may often go undetected. The result is that bicyclists must either wait for a vehicle to arrive, dismount, and push the pedestrian button (if available), or cross illegally. Loop sensitivity can be increased to detect bicycles. Proper bicycle detection must accurately detect bicyclists (be sensitive to the mass and volume of a bicycle and its rider); and provide clear guidance to bicyclists on how to actuate detection (e.g., what button to push or where to stand).

Figure 33: Example Bicycle Signal Detection

Bicycle Countdowns

Near-side bicycle signals may incorporate a “countdown to green” display to provide information about how long until the green bicycle indication is shown, enabling riders to push off as soon as the light turns green.

Leading Bicycle Intervals

Based on the Leading Pedestrian Interval, a Leading Bicycle Interval (LBI) can be implemented in conjunction with a bicycle signal head. Under an LBI, bicyclists are given a green signal while the vehicular traffic is held at all red for several seconds, providing a head start for bicyclists to advance through the intersection. This treatment is particularly effective in locations where bicyclists are

required to make a challenging merge or lane change (e.g., to access a left turn pocket) shortly after the intersection, as the LBI would give them sufficient time to make the merge before being overtaken by vehicular traffic. This treatment can be used to enhance a bicycle box.

BICYCLE PARKING

Bicycle parking is not standardized in any state or municipal code. However, there are preferable types of secure bicycle accommodations available. Bicycle parking is a critical component of the network and facilitates bicycle travel, especially for commuting and utilitarian purposes. The provision of bicycle parking at every destination ensures that bicyclists have a place to safely secure their mode of travel. Elements of proper bicycle parking accommodation are outlined below.

- Bike racks provide short-term parking. Bicycle racks should offer adequate support for the bicycles and should be easy to lock to. The figures to the right display a common inverted-U design, a multi-bicycle rack, and an innovative concept in which the bike rack itself looks like a bicycle.
- Long-term parking should be provided for those needing all day storage or enhanced safety. Bicycle lockers offer good long-term storage, as shown on the left. Attendant and automated parking also serves long-term uses.
- Bicycle parking should be clearly identified by signage, such as shown in the figure on the left. Signage shall also identify the location of racks and lockers at the entrance to shopping centers, buildings, and other establishments where parking may not be provided in an obvious location, such as near a front door.
- Bicycle parking should be located close to the front door of buildings and retail establishments in order to provide for the convenience, visibility, and safety of those who park their bicycles.
- Bicycle lockers should have informational signage, placards, or stickers placed on or immediately adjacent to them identifying the procedure for how to use a locker. This information at a minimum should include the following:
    - Contact information to obtain a locker at City Hall or other administrating establishment
    - Cost (if any) for locker use
    - Terms of use
    - Emergency contact information
- Bicycle lockers should be labeled explicitly as such and shall not be used for other types of storage.
- Bicycle racks and storage lockers should be bolted tightly to the ground in a manner that prevents their tampering

BICYCLE TRANSPORTATION PLAN UPDATE

City of Lincoln, California

APPENDIX B: Public Survey

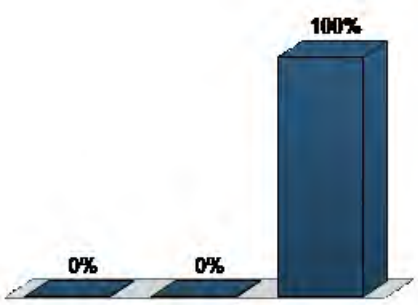
Session Name: Current Session

Date Created:	12/7/2017 4:57:15 PM	**Active Participants:**	16 of 16
Average Score:	0.00%	**Questions:**	16

Results by Question

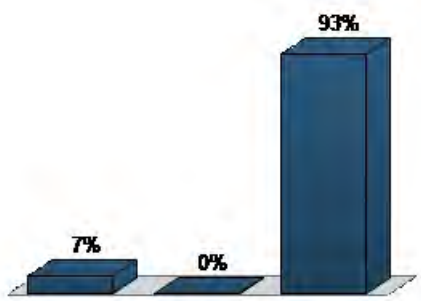
1. Which of these is most important to you? (Multiple Choice)

	Responses	
	Percent	**Count**
Getting home in time for the last hour of ThursdayNight Football	0%	0
Staying awake for the whole meeting.	0%	0
Learning more about the Bikeways Master Plan Update.	100%	2
Totals	**100%**	**2**



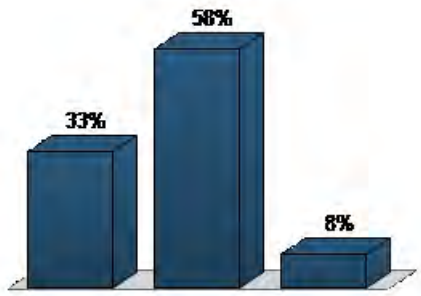
2. Which of these is most important to you? (Multiple Choice)

	Responses	
	Percent	**Count**
Getting home in time for the last hour of ThursdayNight Football	7.14%	1
Staying awake for the whole meeting.	0%	0
Learning more about the Bikeways Master Plan Update.	92.86%	13
Totals	**100%**	**14**



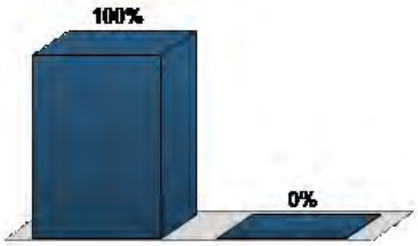
3. Which of these is you? (Multiple Choice)

	Responses	
	Percent	**Count**
This is my first Public Workshop	33.33%	4
I occasionally attend Public Workshops	58.33%	7
I'm a meeting machine	8.33%	1
Totals	**100%**	**12**



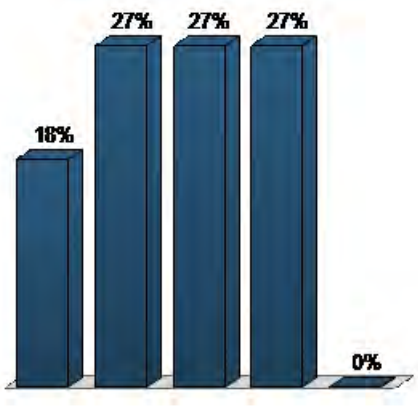
4. Do you bike in the City of Lincoln? (Multiple Choice)

	Responses	
	Percent	**Count**
Yes	100%	12
No	0%	0
Totals	**100%**	**12**



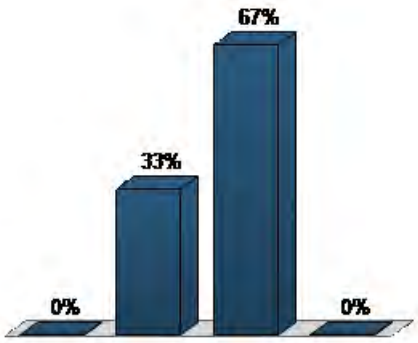
5. As a bicyclist – I characterize myself as: (Multiple Choice)

	Responses	
	Percent	**Count**
Strong and Fearless Rider – No route is too stressful to deter me.	18.18%	2
Enthused and Confident Rider	27.27%	3
Interested but Concerned Rider	27.27%	3
Will only ride if it is low traffic stress	27.27%	3
No Way No How	0%	0
Totals	**100%**	**11**



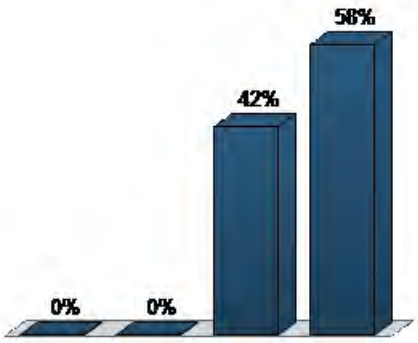
6. What is your overall impression of the quality of the existing bikeway network in the City of Lincoln? (Multiple Choice)

	Responses	
	Percent	**Count**
Excellent	0%	0
Good	33.33%	4
Fair	66.67%	8
Poor	0%	0
Totals	**100%**	**12**



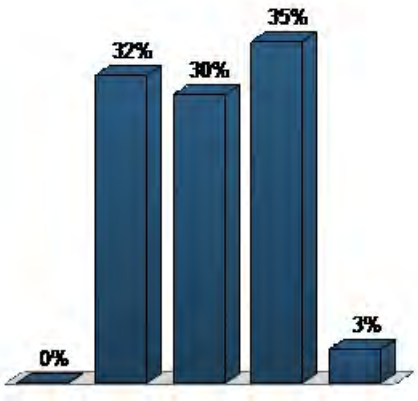
7. What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln? (Multiple Choice)

	Responses	
	Percent	**Count**
Excellent	0%	0
Good	0%	0
Fair	41.67%	5
Poor	58.33%	7
Totals	**100%**	**12**



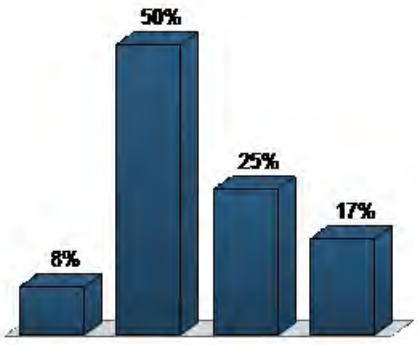
8. What are the primary issues you have observed that prevent you from biking? Rank Your Top Three in Priority Order (Priority Ranking)

	Responses	
	Percent	**Weighted Count**
No Issues to report	0%	0
Poor access to Class I or Class II bike lanes	31.72%	92
Poor pavement conditions	29.66%	86
Safety concerns along the most direct bike route	35.17%	102
Travel Distance	3.45%	10
Totals	**100%**	**290**



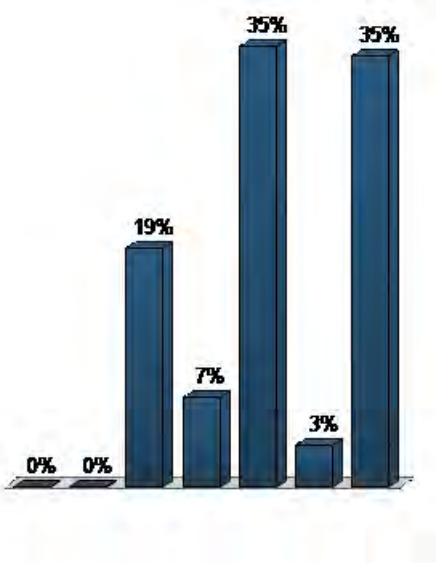
9. Your biking trips usually incorporate which of the following? (Multiple Choice)

	Responses	
	Percent	**Count**
Primarily streets within my neighborhood	8.33%	1
Primarily Class I bike lanes	50%	6
Primarily Class II bike lanes	25%	3
Primarily city streets with no bike signage or Class II bike lanes	16.67%	2
Totals	**100%**	**12**



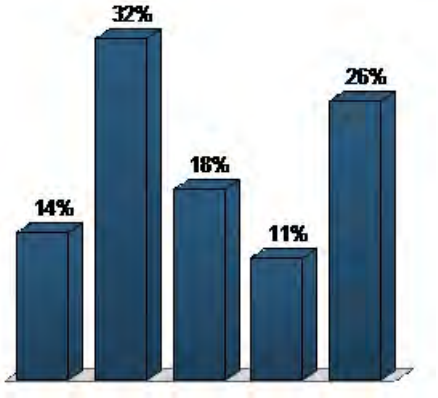
10. Reasons you bike? Rank Your Top Three in Priority Order (Priority Ranking)

	Responses	
	Percent	**Weighted Count**
Commuting to work	0%	0
To go to school	0%	0
Personal errands/shopping	19.25%	51
Social Engagements	7.17%	19
Exercise/Sport	35.47%	94
To/From Transit	3.4%	9
Recreation	34.72%	92
Totals	**100%**	**265**



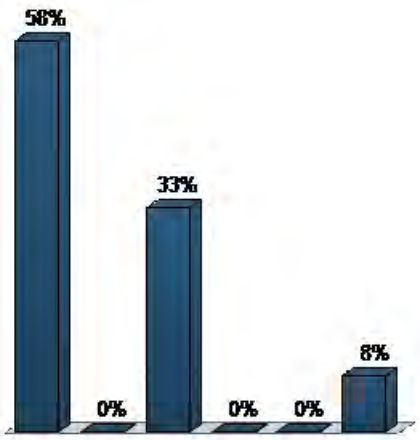
11. Where do you typically ride?Rank Your Top Three in Priority Order (Priority Ranking)

	Responses	
	Percent	**Weighted Count**
To Downtown Lincoln	13.67%	35
To Neighborhoods	31.64%	81
To Schools and Parks	17.58%	45
To Non-Downtown Shopping/Employment Centers	11.33%	29
Outside the City Limits	25.78%	66
Totals	**100%**	**256**



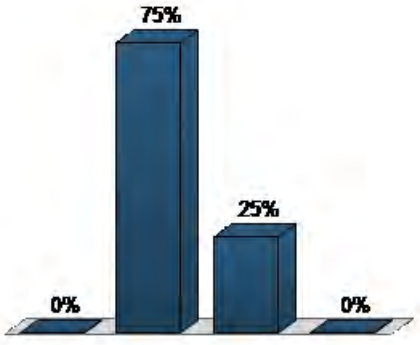
12. How would you like to see the City prioritize the following improvements? (Multiple Choice)

	Responses	
	Percent	**Count**
Filling gaps in the network	58.33%	7
Better maintaining our existing bikeway facilities	0%	0
Adding more Class I Facilities	33.33%	4
Adding more Class II or IV Facilities	0%	0
Adding more signage, bike parking and security measures	0%	0
Focus on Safe Routes to School	8.33%	1
Totals	**100%**	**12**



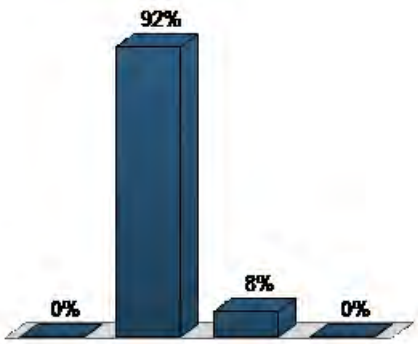
13. My bicycling experience in Lincoln is convenient? (Multiple Choice)

	Responses	
	Percent	**Count**
Strongly Agree	0%	0
Agree	75%	9
Disagree	25%	3
Strongly Disagree	0%	0
Totals	**100%**	**12**



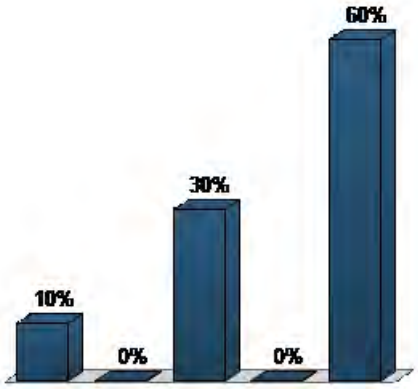
14. My bicycling experience in Lincoln is safe? (Multiple Choice)

	Responses	
	Percent	**Count**
Strongly Agree	0%	0
Agree	91.67%	11
Disagree	8.33%	1
Strongly Disagree	0%	0
Totals	**100%**	**12**



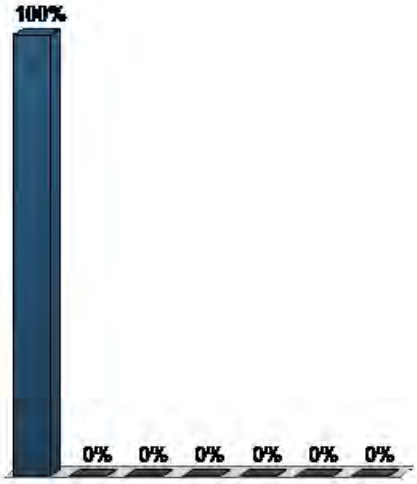
15. What is your age? (Multiple Choice)

	Responses	
	Percent	**Count**
Under 18	10%	1
18-25	0%	0
26-45	30%	3
46-65	0%	0
65+	60%	6
Totals	**100%**	**10**



16. Where do you live? (Multiple Choice)

	Responses	
	Percent	**Count**
City of Lincoln	100%	7
Placer County	0%	0
City of Rocklin	0%	0
City of Granite Bay	0%	0
City of Roseville	0%	0
City of Sacramento	0%	0
Sacramento County	0%	0
Totals	**100%**	**7**



Lincoln Bike Riders : Entry # 1

Do You Bike in the City of Lincoln?

Yes

Lincoln Bike Riders : Entry # 2

Do You Bike in the City of Lincoln?

Yes

Lincoln Bike Riders : Entry # 3

Do You Bike in the City of Lincoln?

Yes

Lincoln Bike Riders : Entry # 4

Name

William Trott

Email

Williamthecreator42@gmail.com

Do You Bike in the City of Lincoln?

No

As a bicyclist – I characterize myself as:

- Enthused and Confident Rider

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Good

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Good

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Travel Distance

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

No Issues to report

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

No Issues to report

Your biking trips usually incorporate which of the following?

- Primarily Class I bike lanes

What is the 1st PRIORITY to why you bike?

Recreation

What is the 2nd PRIORITY to why you bike?

Commuting to work

What is the 3rd PRIORITY to why you bike?

Commuting to work

Lincoln Bike Riders : Entry # 4

What is the 1st PRIORITY to where you typically ride?

To Neighborhoods

What is the 2nd PRIORITY to where you typically ride?

To Downtown Lincoln

What is the 3rd PRIORITY to where you typically ride?

To Schools and Parks

How would you like to see the City prioritize the following improvements?

- Better maintaining our existing bikeway facilities
- Adding more signage, bike parking and security measures
- Focus on Safe Routes to School

My bicycling experience in Lincoln is convenient?

- Agree

My bicycling experience in Lincoln is safe.

- Agree

What is your age?

- Under 18

Where do you live?

- City of Lincoln

Lincoln Bike Riders : Entry # 5

Name

Crystal Elledge

Email

ceelledge@sbcglobal.net

Do You Bike in the City of Lincoln?

Yes

As a bicyclist – I characterize myself as:

- Enthused and Confident Rider

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Fair

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Fair

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Poor pavement conditions

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

Poor access to Class I or Class II bike lanes

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

Your biking trips usually incorporate which of the following?

- Primarily city streets with no bike signage or Class II bike lanes

What is the 1st PRIORITY to why you bike?

Exercise/Sport

What is the 2nd PRIORITY to why you bike?

Recreation

What is the 3rd PRIORITY to why you bike?

Social Engagements

Lincoln Bike Riders : Entry # 5

What is the 1st PRIORITY to where you typically ride?

Outside the City Limits

What is the 2nd PRIORITY to where you typically ride?

To Neighborhoods

What is the 3rd PRIORITY to where you typically ride?

To Schools and Parks

How would you like to see the City prioritize the following improvements?

- Better maintaining our existing bikeway facilities
- Adding more Class I Facilities
- Adding more Class II or IV Facilities
- Focus on Safe Routes to School

My bicycling experience in Lincoln is convenient?

- Agree

My bicycling experience in Lincoln is safe.

- Agree

What is your age?

- 65+

Where do you live?

- City of Lincoln

Lincoln Bike Riders : Entry # 6

Name

Jennifer Villanueva

Email

jenvilla@hotmail.com

Do You Bike in the City of Lincoln?

Yes

As a bicyclist – I characterize myself as:

- Enthused and Confident Rider

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Fair

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Fair

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

Poor pavement conditions

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

Poor access to Class I or Class II bike lanes

Your biking trips usually incorporate which of the following?

- Primarily streets within my neighborhood
- Primarily city streets with no bike signage or Class II bike lanes

What is the 1st PRIORITY to why you bike?

Exercise/Sport

What is the 2nd PRIORITY to why you bike?

Commuting to work

What is the 3rd PRIORITY to why you bike?

Lincoln Bike Riders : Entry # 6

Personal errands/shopping

What is the 1st PRIORITY to where you typically ride?

Outside the City Limits

What is the 2nd PRIORITY to where you typically ride?

To Schools and Parks

What is the 3rd PRIORITY to where you typically ride?

To Neighborhoods

How would you like to see the City prioritize the following improvements?

- Filling gaps in the network
- Better maintaining our existing bikeway facilities
- Adding more signage, bike parking and security measures

My bicycling experience in Lincoln is convenient?

- Agree

My bicycling experience in Lincoln is safe.

- Agree

What is your age?

- 26-45

Where do you live?

- City of Lincoln

Lincoln Bike Riders : Entry # 7

Name

Bob Collins

Email

bobpcoll@community.net

Do You Bike in the City of Lincoln?

Yes

As a bicyclist – I characterize myself as:

- Strong and Fearless Rider – No route is too stressful to deter me.

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Good
- Fair

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Fair

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Poor pavement conditions

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

What is the 1st PRIORITY to why you bike?

Exercise/Sport

What is the 2nd PRIORITY to why you bike?

Exercise/Sport

What is the 3rd PRIORITY to why you bike?

Exercise/Sport

What is the 1st PRIORITY to where you typically ride?

Outside the City Limits

Lincoln Bike Riders : Entry # 7

What is the 2nd PRIORITY to where you typically ride?

To Downtown Lincoln

What is the 3rd PRIORITY to where you typically ride?

Outside the City Limits

How would you like to see the City prioritize the following improvements?

- Filling gaps in the network
- Better maintaining our existing bikeway facilities
- Adding more Class I Facilities
- Adding more Class II or IV Facilities
- Adding more signage, bike parking and security measures

My bicycling experience in Lincoln is convenient?

- Agree

My bicycling experience in Lincoln is safe.

- Disagree

What is your age?

- 65+

Where do you live?

- City of Lincoln

Lincoln Bike Riders : Entry # 8

Name

Lindsey Graves

Email

lindseydgraves@gmail.com

Do You Bike in the City of Lincoln?

No

As a bicyclist – I characterize myself as:

- Interested but Concerned Rider

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Poor

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Poor

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Poor access to Class I or Class II bike lanes

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

Poor pavement conditions

Your biking trips usually incorporate which of the following?

- Primarily streets within my neighborhood

What is the 1st PRIORITY to why you bike?

Personal errands/shopping

What is the 2nd PRIORITY to why you bike?

Social Engagements

What is the 3rd PRIORITY to why you bike?

Recreation

Lincoln Bike Riders : Entry # 8

What is the 1st PRIORITY to where you typically ride?

To Schools and Parks

What is the 2nd PRIORITY to where you typically ride?

To Non-Downtown Shopping/Employment Centers

What is the 3rd PRIORITY to where you typically ride?

To Neighborhoods

How would you like to see the City prioritize the following improvements?

- Filling gaps in the network
- Adding more Class I Facilities
- Adding more signage, bike parking and security measures
- Focus on Safe Routes to School

My bicycling experience in Lincoln is convenient?

- Disagree

My bicycling experience in Lincoln is safe.

- Disagree

What is your age?

- 26-45

Where do you live?

- City of Lincoln

Lincoln Bike Riders : Entry # 9

Name

Dave Welch

Email

norcaldave2010@gmail.com

Do You Bike in the City of Lincoln?

Yes

As a bicyclist – I characterize myself as:

- Enthused and Confident Rider

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Good

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Fair

What is the 1st PRIORITY issue you have observed that prevents you from biking?

No Issues to report

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

No Issues to report

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

Your biking trips usually incorporate which of the following?

- Primarily streets within my neighborhood
- Primarily city streets with no bike signage or Class II bike lanes

What is the 1st PRIORITY to why you bike?

Recreation

What is the 2nd PRIORITY to why you bike?

Exercise/Sport

What is the 3rd PRIORITY to why you bike?

Lincoln Bike Riders : Entry # 9

Personal errands/shopping

What is the 1st PRIORITY to where you typically ride?

To Schools and Parks

What is the 2nd PRIORITY to where you typically ride?

Outside the City Limits

What is the 3rd PRIORITY to where you typically ride?

To Downtown Lincoln

How would you like to see the City prioritize the following improvements?

- Filling gaps in the network
- Better maintaining our existing bikeway facilities
- Focus on Safe Routes to School

My bicycling experience in Lincoln is convenient?

- Agree

My bicycling experience in Lincoln is safe.

- Agree

What is your age?

- 46-65

Where do you live?

- City of Lincoln

Lincoln Bike Riders : Entry # 10

Name

Diane Knight

Email

Newhopemorgans@yahoo.com

Do You Bike in the City of Lincoln?

Yes

As a bicyclist – I characterize myself as:

- Will only ride if it is low traffic stress

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Poor

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Poor

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

No Issues to report

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

No Issues to report

Your biking trips usually incorporate which of the following?

- Primarily Class I bike lanes

What is the 1st PRIORITY to why you bike?

Exercise/Sport

What is the 2nd PRIORITY to why you bike?

Recreation

What is the 3rd PRIORITY to why you bike?

Social Engagements

Lincoln Bike Riders : Entry # 10

What is the 1st PRIORITY to where you typically ride?

Outside the City Limits

What is the 2nd PRIORITY to where you typically ride?

To Downtown Lincoln

What is the 3rd PRIORITY to where you typically ride?

To Neighborhoods

How would you like to see the City prioritize the following improvements?

- Filling gaps in the network
- Adding more Class I Facilities
- Adding more Class II or IV Facilities

My bicycling experience in Lincoln is convenient?

- Disagree

My bicycling experience in Lincoln is safe.

- Agree

What is your age?

- 46-65

Where do you live?

- Placer County

Lincoln Bike Riders : Entry # 11

Name

Dennis Wagner

Email

Dwagner1111@gmail.com

Do You Bike in the City of Lincoln?

Yes

As a bicyclist – I characterize myself as:

- Enthused and Confident Rider

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Fair

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Good

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Poor pavement conditions

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

Poor access to Class I or Class II bike lanes

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

Your biking trips usually incorporate which of the following?

- Primarily Class II bike lanes

What is the 1st PRIORITY to why you bike?

Recreation

What is the 2nd PRIORITY to why you bike?

Recreation

What is the 3rd PRIORITY to why you bike?

Recreation

Lincoln Bike Riders : Entry # 11

What is the 1st PRIORITY to where you typically ride?

To Downtown Lincoln

What is the 2nd PRIORITY to where you typically ride?

To Downtown Lincoln

What is the 3rd PRIORITY to where you typically ride?

To Downtown Lincoln

How would you like to see the City prioritize the following improvements?

- Better maintaining our existing bikeway facilities

My bicycling experience in Lincoln is convenient?

- Agree

My bicycling experience in Lincoln is safe.

- Agree

What is your age?

- 46-65

Where do you live?

- City of Lincoln

Lincoln Bike Riders : Entry # 12

Name

Chris Fox

Email

Fox_chris@att.net

Do You Bike in the City of Lincoln?

Yes

As a bicyclist – I characterize myself as:

- Interested but Concerned Rider

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Good

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Fair

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

No Issues to report

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

No Issues to report

Your biking trips usually incorporate which of the following?

- Primarily Class I bike lanes

What is the 1st PRIORITY to why you bike?

Recreation

What is the 2nd PRIORITY to why you bike?

Exercise/Sport

What is the 3rd PRIORITY to why you bike?

Commuting to work

Lincoln Bike Riders : Entry # 12

What is the 1st PRIORITY to where you typically ride?

To Schools and Parks

What is the 2nd PRIORITY to where you typically ride?

Outside the City Limits

What is the 3rd PRIORITY to where you typically ride?

To Downtown Lincoln

How would you like to see the City prioritize the following improvements?

- Filling gaps in the network
- Adding more Class I Facilities

My bicycling experience in Lincoln is convenient?

- Agree

My bicycling experience in Lincoln is safe.

- Agree

What is your age?

- 46-65

Where do you live?

- City of Lincoln

Lincoln Bike Riders : Entry # 13

Name

Sandi Brower

Email

browerfamily@gmail.com

Do You Bike in the City of Lincoln?

Yes

As a bicyclist – I characterize myself as:

- Interested but Concerned Rider

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Good

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Fair

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

Poor access to Class I or Class II bike lanes

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

No Issues to report

Your biking trips usually incorporate which of the following?

- Primarily streets within my neighborhood

What is the 1st PRIORITY to why you bike?

Exercise/Sport

What is the 2nd PRIORITY to why you bike?

Personal errands/shopping

What is the 3rd PRIORITY to why you bike?

Commuting to work

Lincoln Bike Riders : Entry # 13

What is the 1st PRIORITY to where you typically ride?

To Downtown Lincoln

What is the 2nd PRIORITY to where you typically ride?

To Schools and Parks

What is the 3rd PRIORITY to where you typically ride?

To Neighborhoods

How would you like to see the City prioritize the following improvements?

- Filling gaps in the network

My bicycling experience in Lincoln is convenient?

- Disagree

My bicycling experience in Lincoln is safe.

- Disagree

What is your age?

- 46-65

Where do you live?

- City of Lincoln
- Placer County

Lincoln Bike Riders : Entry # 14

Name

Tom Frady

Email

tdfrady@sbcglobal.net

Do You Bike in the City of Lincoln?

Yes

As a bicyclist – I characterize myself as:

- Strong and Fearless Rider – No route is too stressful to deter me.

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Fair

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Fair

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Poor pavement conditions

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

No Issues to report

What is the 1st PRIORITY to why you bike?

Exercise/Sport

What is the 2nd PRIORITY to why you bike?

Recreation

What is the 3rd PRIORITY to why you bike?

Social Engagements

What is the 1st PRIORITY to where you typically ride?

Outside the City Limits

Lincoln Bike Riders : Entry # 14

What is the 2nd PRIORITY to where you typically ride?

To Downtown Lincoln

What is the 3rd PRIORITY to where you typically ride?

To Downtown Lincoln

How would you like to see the City prioritize the following improvements?

- Adding more Class I Facilities
- Adding more Class II or IV Facilities

My bicycling experience in Lincoln is convenient?

- Agree

My bicycling experience in Lincoln is safe.

- Agree

What is your age?

- 65+

Where do you live?

- City of Lincoln

Lincoln Bike Riders : Entry # 15

Name

Gary Eckhardt

Email

gary_eckhardt@yahoo.com

Do You Bike in the City of Lincoln?

Yes

As a bicyclist – I characterize myself as:

- Enthused and Confident Rider

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Excellent

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Good

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

No Issues to report

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

No Issues to report

Your biking trips usually incorporate which of the following?

- Primarily Class II bike lanes

What is the 1st PRIORITY to why you bike?

Exercise/Sport

What is the 2nd PRIORITY to why you bike?

Personal errands/shopping

What is the 3rd PRIORITY to why you bike?

Recreation

Lincoln Bike Riders : Entry # 15

What is the 1st PRIORITY to where you typically ride?

To Neighborhoods

What is the 2nd PRIORITY to where you typically ride?

To Non-Downtown Shopping/Employment Centers

What is the 3rd PRIORITY to where you typically ride?

To Schools and Parks

How would you like to see the City prioritize the following improvements?

- Filling gaps in the network
- Adding more Class II or IV Facilities

My bicycling experience in Lincoln is convenient?

- Strongly Agree

My bicycling experience in Lincoln is safe.

- Agree

What is your age?

- 65+

Where do you live?

- City of Lincoln

Lincoln Bike Riders : Entry # 16

Name

Carol Hofmeister

Email

carolhofmeister@gmail.com

Do You Bike in the City of Lincoln?

Yes

As a bicyclist – I characterize myself as:

- Interested but Concerned Rider

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Fair

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Fair

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Poor access to Class I or Class II bike lanes

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

Poor pavement conditions

Your biking trips usually incorporate which of the following?

- Primarily streets within my neighborhood
- Primarily Class I bike lanes
- Primarily Class II bike lanes

What is the 1st PRIORITY to why you bike?

Exercise/Sport

What is the 2nd PRIORITY to why you bike?

Exercise/Sport

What is the 3rd PRIORITY to why you bike?

Lincoln Bike Riders : Entry # 16

Exercise/Sport

What is the 1st PRIORITY to where you typically ride?

To Neighborhoods

What is the 2nd PRIORITY to where you typically ride?

Outside the City Limits

What is the 3rd PRIORITY to where you typically ride?

To Schools and Parks

How would you like to see the City prioritize the following improvements?

- Filling gaps in the network
- Better maintaining our existing bikeway facilities
- Adding more Class I Facilities
- Focus on Safe Routes to School

My bicycling experience in Lincoln is convenient?

- Disagree

My bicycling experience in Lincoln is safe.

- Agree

What is your age?

- 65+

Where do you live?

- City of Lincoln

Lincoln Bike Riders : Entry # 17

Name

Ben Richardson

Email

woodturner@live.com

Do You Bike in the City of Lincoln?

Yes

As a bicyclist – I characterize myself as:

- Interested but Concerned Rider

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Good

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Fair

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

Poor pavement conditions

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

No Issues to report

Your biking trips usually incorporate which of the following?

- Primarily Class I bike lanes

What is the 1st PRIORITY to why you bike?

Exercise/Sport

What is the 2nd PRIORITY to why you bike?

Recreation

What is the 3rd PRIORITY to why you bike?

Recreation

Lincoln Bike Riders : Entry # 17

What is the 1st PRIORITY to where you typically ride?

To Neighborhoods

What is the 2nd PRIORITY to where you typically ride?

Outside the City Limits

What is the 3rd PRIORITY to where you typically ride?

To Downtown Lincoln

How would you like to see the City prioritize the following improvements?

- Filling gaps in the network

My bicycling experience in Lincoln is convenient?

- Agree

My bicycling experience in Lincoln is safe.

- Agree

What is your age?

- 65+

Where do you live?

- City of Lincoln

Lincoln Bike Riders : Entry # 18

Name

Candi Claussen

Email

Candijoy76@Gmail.com

Do You Bike in the City of Lincoln?

Yes

As a bicyclist – I characterize myself as:

- Interested but Concerned Rider

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Fair

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Poor

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

Poor access to Class I or Class II bike lanes

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

No Issues to report

Your biking trips usually incorporate which of the following?

- Primarily streets within my neighborhood
- Primarily Class I bike lanes
- Primarily city streets with no bike signage or Class II bike lanes

What is the 1st PRIORITY to why you bike?

Personal errands/shopping

What is the 2nd PRIORITY to why you bike?

Recreation

What is the 3rd PRIORITY to why you bike?

Lincoln Bike Riders : Entry # 18

Commuting to work

What is the 1st PRIORITY to where you typically ride?

To Schools and Parks

What is the 2nd PRIORITY to where you typically ride?

To Neighborhoods

What is the 3rd PRIORITY to where you typically ride?

Outside the City Limits

How would you like to see the City prioritize the following improvements?

- Filling gaps in the network
- Better maintaining our existing bikeway facilities

My bicycling experience in Lincoln is convenient?

- Disagree

My bicycling experience in Lincoln is safe.

- Disagree

What is your age?

- 26-45

Where do you live?

- City of Lincoln

Lincoln Bike Riders : Entry # 19

Name

Terry Lloyd

Email

Trldm55@yahoo.com

Do You Bike in the City of Lincoln?

Yes

As a bicyclist – I characterize myself as:

- Will only ride if it is low traffic stress

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Good

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Good

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

No Issues to report

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

No Issues to report

Your biking trips usually incorporate which of the following?

- Primarily Class I bike lanes
- Primarily Class II bike lanes

What is the 1st PRIORITY to why you bike?

Exercise/Sport

What is the 2nd PRIORITY to why you bike?

Recreation

What is the 3rd PRIORITY to why you bike?

Lincoln Bike Riders : Entry # 19

Social Engagements

What is the 1st PRIORITY to where you typically ride?

Outside the City Limits

What is the 2nd PRIORITY to where you typically ride?

To Schools and Parks

What is the 3rd PRIORITY to where you typically ride?

To Neighborhoods

How would you like to see the City prioritize the following improvements?

- Filling gaps in the network

My bicycling experience in Lincoln is convenient?

- Agree

My bicycling experience in Lincoln is safe.

- Agree

What is your age?

- 46-65

Where do you live?

- City of Lincoln

Lincoln Bike Riders : Entry # 20

Name

Catherine Carleton

Email

catcarlet@hotmail.com

Do You Bike in the City of Lincoln?

Yes

As a bicyclist – I characterize myself as:

- Will only ride if it is low traffic stress

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Poor

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Poor

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

No Issues to report

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

No Issues to report

Your biking trips usually incorporate which of the following?

- Primarily streets within my neighborhood

What is the 1st PRIORITY to why you bike?

To go to school

What is the 2nd PRIORITY to why you bike?

Recreation

What is the 3rd PRIORITY to why you bike?

Commuting to work

Lincoln Bike Riders : Entry # 20

What is the 1st PRIORITY to where you typically ride?

To Schools and Parks

What is the 2nd PRIORITY to where you typically ride?

To Neighborhoods

What is the 3rd PRIORITY to where you typically ride?

To Downtown Lincoln

How would you like to see the City prioritize the following improvements?

- Filling gaps in the network
- Focus on Safe Routes to School

My bicycling experience in Lincoln is convenient?

- Strongly Disagree

My bicycling experience in Lincoln is safe.

- Strongly Disagree

What is your age?

- 26-45

Where do you live?

- City of Lincoln

Lincoln Bike Riders : Entry # 21

Name

Clint Nelson

Email

cnelson@wpusd.k12.ca.us

Do You Bike in the City of Lincoln?

Yes

As a bicyclist – I characterize myself as:

- Will only ride if it is low traffic stress

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Poor

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Poor

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

Poor pavement conditions

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

Poor access to Class I or Class II bike lanes

Your biking trips usually incorporate which of the following?

- Primarily city streets with no bike signage or Class II bike lanes

What is the 1st PRIORITY to why you bike?

Exercise/Sport

What is the 2nd PRIORITY to why you bike?

Recreation

What is the 3rd PRIORITY to why you bike?

Commuting to work

Lincoln Bike Riders : Entry # 21

What is the 1st PRIORITY to where you typically ride?

Outside the City Limits

What is the 2nd PRIORITY to where you typically ride?

To Neighborhoods

What is the 3rd PRIORITY to where you typically ride?

To Downtown Lincoln

How would you like to see the City prioritize the following improvements?

- Adding more Class II or IV Facilities

My bicycling experience in Lincoln is convenient?

- Agree

My bicycling experience in Lincoln is safe.

- Disagree

What is your age?

- 26-45

Where do you live?

- Placer County

Lincoln Bike Riders : Entry # 22

Name

Phil Cooper

Email

Cooper.phill@gmail.com

Do You Bike in the City of Lincoln?

Yes

As a bicyclist – I characterize myself as:

- Strong and Fearless Rider – No route is too stressful to deter me.

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Poor

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Poor

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Poor access to Class I or Class II bike lanes

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

Poor pavement conditions

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

Your biking trips usually incorporate which of the following?

- Primarily streets within my neighborhood
- Primarily Class I bike lanes
- Primarily Class II bike lanes
- Primarily city streets with no bike signage or Class II bike lanes

What is the 1st PRIORITY to why you bike?

Exercise/Sport

What is the 2nd PRIORITY to why you bike?

Social Engagements

Lincoln Bike Riders : Entry # 22

What is the 3rd PRIORITY to why you bike?

Recreation

What is the 1st PRIORITY to where you typically ride?

Outside the City Limits

What is the 2nd PRIORITY to where you typically ride?

Outside the City Limits

What is the 3rd PRIORITY to where you typically ride?

Outside the City Limits

How would you like to see the City prioritize the following improvements?

- Filling gaps in the network
- Better maintaining our existing bikeway facilities
- Adding more Class I Facilities
- Adding more Class II or IV Facilities

My bicycling experience in Lincoln is convenient?

- Disagree

My bicycling experience in Lincoln is safe.

- Disagree

What is your age?

- 46-65

Where do you live?

- City of Lincoln

Lincoln Bike Riders : Entry # 23

Name

Arin Laugtug

Email

arinlaugtug@live.com

Do You Bike in the City of Lincoln?

Yes

As a bicyclist – I characterize myself as:

- Enthused and Confident Rider

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Fair

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Fair

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

Poor access to Class I or Class II bike lanes

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

Travel Distance

Your biking trips usually incorporate which of the following?

- Primarily streets within my neighborhood

What is the 1st PRIORITY to why you bike?

Recreation

What is the 2nd PRIORITY to why you bike?

Exercise/Sport

What is the 3rd PRIORITY to why you bike?

To/From Transit

Lincoln Bike Riders : Entry # 23

What is the 1st PRIORITY to where you typically ride?

To Neighborhoods

What is the 2nd PRIORITY to where you typically ride?

To Downtown Lincoln

What is the 3rd PRIORITY to where you typically ride?

To Schools and Parks

How would you like to see the City prioritize the following improvements?

- Filling gaps in the network

My bicycling experience in Lincoln is convenient?

- Disagree

My bicycling experience in Lincoln is safe.

- Disagree

What is your age?

- 46-65

Where do you live?

- City of Lincoln

Lincoln Bike Riders : Entry # 24

Name

Dennis Wagner

Email

dwagner1111@gmail.com

Do You Bike in the City of Lincoln?

Yes

As a bicyclist – I characterize myself as:

- Enthused and Confident Rider

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Good

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Good

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Poor access to Class I or Class II bike lanes

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

No Issues to report

Your biking trips usually incorporate which of the following?

- Primarily Class I bike lanes

What is the 1st PRIORITY to why you bike?

Exercise/Sport

What is the 2nd PRIORITY to why you bike?

Recreation

What is the 3rd PRIORITY to why you bike?

Commuting to work

Lincoln Bike Riders : Entry # 24

What is the 1st PRIORITY to where you typically ride?

To Downtown Lincoln

What is the 2nd PRIORITY to where you typically ride?

To Downtown Lincoln

What is the 3rd PRIORITY to where you typically ride?

To Downtown Lincoln

How would you like to see the City prioritize the following improvements?

- Filling gaps in the network
- Adding more Class I Facilities

My bicycling experience in Lincoln is convenient?

- Agree

My bicycling experience in Lincoln is safe.

- Agree

What is your age?

- 46-65

Where do you live?

- City of Lincoln

Lincoln Bike Riders : Entry # 25

Name

Travis Finn

Email

travisfinn@gmail.com

Do You Bike in the City of Lincoln?

Yes

As a bicyclist – I characterize myself as:

- Enthused and Confident Rider

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Good

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Good

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

Poor access to Class I or Class II bike lanes

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

No Issues to report

Your biking trips usually incorporate which of the following?

- Primarily Class I bike lanes

What is the 1st PRIORITY to why you bike?

Exercise/Sport

What is the 2nd PRIORITY to why you bike?

Commuting to work

What is the 3rd PRIORITY to why you bike?

Commuting to work

Lincoln Bike Riders : Entry # 25

What is the 1st PRIORITY to where you typically ride?

To Non-Downtown Shopping/Employment Centers

What is the 2nd PRIORITY to where you typically ride?

Outside the City Limits

What is the 3rd PRIORITY to where you typically ride?

To Downtown Lincoln

How would you like to see the City prioritize the following improvements?

- Adding more Class I Facilities

My bicycling experience in Lincoln is convenient?

- Agree

My bicycling experience in Lincoln is safe.

- Agree

What is your age?

- 26-45

Where do you live?

- City of Lincoln

Lincoln Bike Riders : Entry # 26

Name

Jeffery Trott

Email

trottjg@sbcglobal.net

Do You Bike in the City of Lincoln?

Yes

As a bicyclist – I characterize myself as:

- Strong and Fearless Rider – No route is too stressful to deter me.

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Good

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Fair

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Poor pavement conditions

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

Poor access to Class I or Class II bike lanes

Your biking trips usually incorporate which of the following?

- Primarily city streets with no bike signage or Class II bike lanes

What is the 1st PRIORITY to why you bike?

Exercise/Sport

What is the 2nd PRIORITY to why you bike?

Recreation

What is the 3rd PRIORITY to why you bike?

To/From Transit

Lincoln Bike Riders : Entry # 26

What is the 1st PRIORITY to where you typically ride?

Outside the City Limits

What is the 2nd PRIORITY to where you typically ride?

To Non-Downtown Shopping/Employment Centers

What is the 3rd PRIORITY to where you typically ride?

To Neighborhoods

How would you like to see the City prioritize the following improvements?

- Adding more Class II or IV Facilities

My bicycling experience in Lincoln is convenient?

- Agree

My bicycling experience in Lincoln is safe.

- Agree

What is your age?

- 46-65

Where do you live?

- City of Lincoln

Lincoln Bike Riders : Entry # 27

Name

Brenda Kuffel

Email

Camaro1963@aol.com

Do You Bike in the City of Lincoln?

No

As a bicyclist – I characterize myself as:

- No Way No How

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Fair

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Fair

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

Poor access to Class I or Class II bike lanes

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

Poor pavement conditions

What is the 1st PRIORITY to why you bike?

Commuting to work

What is the 2nd PRIORITY to why you bike?

Commuting to work

What is the 3rd PRIORITY to why you bike?

Commuting to work

What is the 1st PRIORITY to where you typically ride?

To Downtown Lincoln

Lincoln Bike Riders : Entry # 27

What is the 2nd PRIORITY to where you typically ride?

To Downtown Lincoln

What is the 3rd PRIORITY to where you typically ride?

To Downtown Lincoln

How would you like to see the City prioritize the following improvements?

- Focus on Safe Routes to School

What is your age?

- 46-65

Where do you live?

- City of Lincoln
- Placer County

Lincoln Bike Riders : Entry # 28

Name

FRED HIGGINS

Email

fhiggins54@aol.com

Do You Bike in the City of Lincoln?

Yes

As a bicyclist – I characterize myself as:

- Enthused and Confident Rider

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Poor

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Poor

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Poor pavement conditions

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

Poor access to Class I or Class II bike lanes

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

Your biking trips usually incorporate which of the following?

- Primarily Class II bike lanes

What is the 1st PRIORITY to why you bike?

Recreation

What is the 2nd PRIORITY to why you bike?

Exercise/Sport

What is the 3rd PRIORITY to why you bike?

To/From Transit

Lincoln Bike Riders : Entry # 28

What is the 1st PRIORITY to where you typically ride?

To Downtown Lincoln

What is the 2nd PRIORITY to where you typically ride?

To Downtown Lincoln

What is the 3rd PRIORITY to where you typically ride?

To Schools and Parks

How would you like to see the City prioritize the following improvements?

- Better maintaining our existing bikeway facilities
- Adding more Class II or IV Facilities
- Focus on Safe Routes to School

My bicycling experience in Lincoln is convenient?

- Disagree

My bicycling experience in Lincoln is safe.

- Disagree

What is your age?

- 65+

Where do you live?

- City of Lincoln

Lincoln Bike Riders : Entry # 29

Name

Paul Denzler

Email

PaulDenzler@hotmail.com

Do You Bike in the City of Lincoln?

Yes

As a bicyclist – I characterize myself as:

- Interested but Concerned Rider

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Fair

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Poor

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

Poor access to Class I or Class II bike lanes

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

Poor pavement conditions

Your biking trips usually incorporate which of the following?

- Primarily streets within my neighborhood

What is the 1st PRIORITY to why you bike?

Recreation

What is the 2nd PRIORITY to why you bike?

Commuting to work

What is the 3rd PRIORITY to why you bike?

Exercise/Sport

Lincoln Bike Riders : Entry # 29

What is the 1st PRIORITY to where you typically ride?

To Schools and Parks

What is the 2nd PRIORITY to where you typically ride?

To Downtown Lincoln

What is the 3rd PRIORITY to where you typically ride?

To Neighborhoods

How would you like to see the City prioritize the following improvements?

- Filling gaps in the network
- Adding more Class I Facilities

My bicycling experience in Lincoln is convenient?

- Agree

My bicycling experience in Lincoln is safe.

- Disagree

What is your age?

- 46-65

Where do you live?

- City of Lincoln

Lincoln Bike Riders : Entry # 30

Name

Kristin Rose

Email

kristinrose8@gmail.com

Do You Bike in the City of Lincoln?

Yes

As a bicyclist – I characterize myself as:

- Interested but Concerned Rider

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Fair

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Poor

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

Poor pavement conditions

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

No Issues to report

Your biking trips usually incorporate which of the following?

- Primarily streets within my neighborhood

What is the 1st PRIORITY to why you bike?

Exercise/Sport

What is the 2nd PRIORITY to why you bike?

Personal errands/shopping

What is the 3rd PRIORITY to why you bike?

Recreation

Lincoln Bike Riders : Entry # 30

What is the 1st PRIORITY to where you typically ride?

To Schools and Parks

What is the 2nd PRIORITY to where you typically ride?

To Neighborhoods

What is the 3rd PRIORITY to where you typically ride?

To Non-Downtown Shopping/Employment Centers

How would you like to see the City prioritize the following improvements?

- Focus on Safe Routes to School

My bicycling experience in Lincoln is convenient?

- Disagree

My bicycling experience in Lincoln is safe.

- Disagree

What is your age?

- 26-45

Where do you live?

- City of Lincoln

Lincoln Bike Riders : Entry # 31

Name

Kathy Curtis

Email

kathyc@starstream.net

Do You Bike in the City of Lincoln?

No

As a bicyclist – I characterize myself as:

- Interested but Concerned Rider
- Will only ride if it is low traffic stress

What is your overall impression of the quality of the existing bikeway network in the City of Lincoln?

- Fair

What is your overall impression of the over-all connectivity of the existing bikeway network in the City of Lincoln?

- Fair

What is the 1st PRIORITY issue you have observed that prevents you from biking?

Safety concerns along the most direct bike route

What is the 2nd PRIORITY issue you have observed that prevents you from biking?

Poor pavement conditions

What is the 3rd PRIORITY issue you have observed that prevents you from biking?

Poor access to Class I or Class II bike lanes

Your biking trips usually incorporate which of the following?

- Primarily streets within my neighborhood
- Primarily city streets with no bike signage or Class II bike lanes

What is the 1st PRIORITY to why you bike?

Exercise/Sport

What is the 2nd PRIORITY to why you bike?

To/From Transit

What is the 3rd PRIORITY to why you bike?

Lincoln Bike Riders : Entry # 31

Commuting to work

What is the 1st PRIORITY to where you typically ride?

Outside the City Limits

What is the 2nd PRIORITY to where you typically ride?

To Non-Downtown Shopping/Employment Centers

What is the 3rd PRIORITY to where you typically ride?

To Neighborhoods

How would you like to see the City prioritize the following improvements?

- Filling gaps in the network
- Better maintaining our existing bikeway facilities

My bicycling experience in Lincoln is convenient?

- Disagree

My bicycling experience in Lincoln is safe.

- Disagree

What is your age?

- 46-65

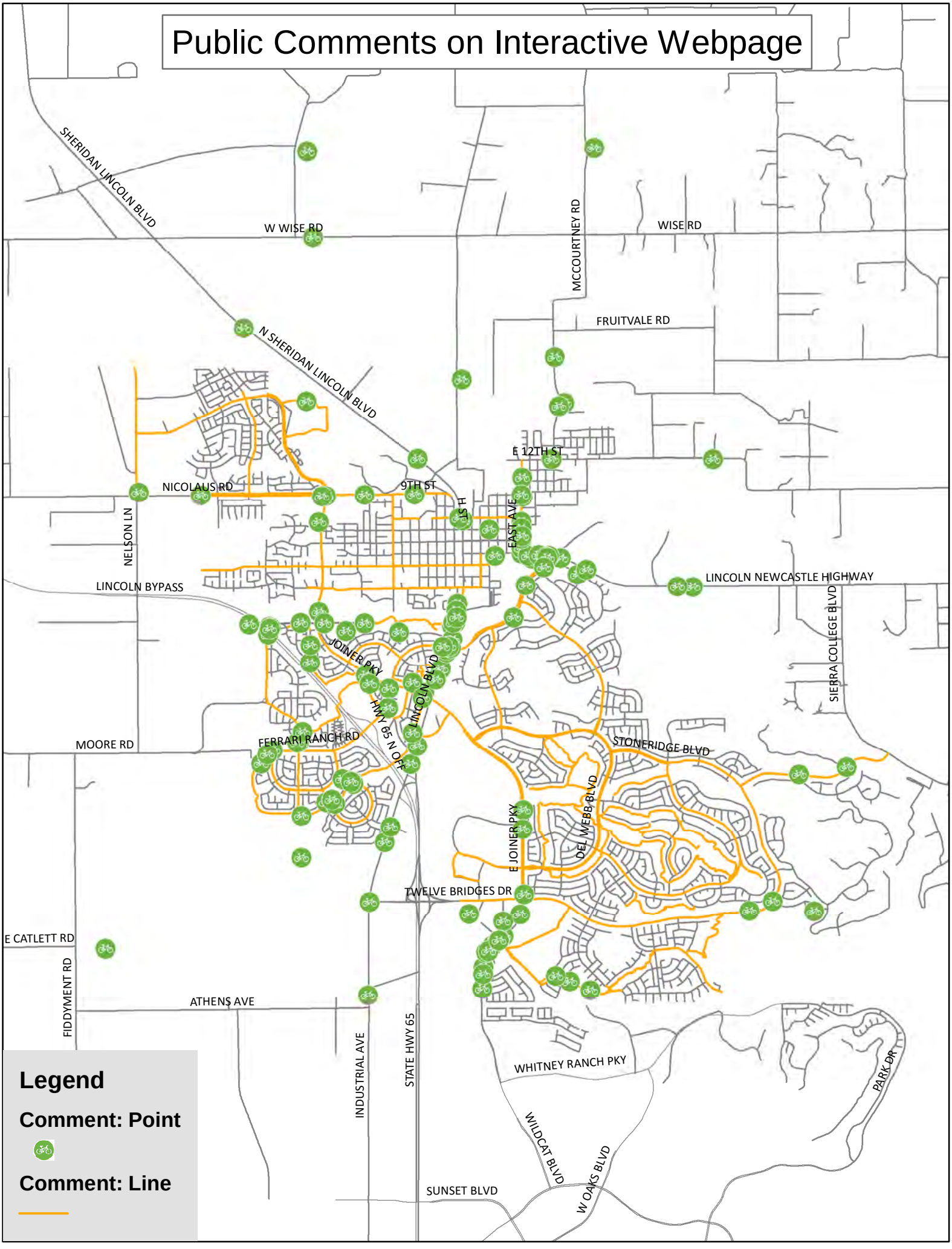
Where do you live?

- City of Lincoln

BICYCLE TRANSPORTATION PLAN UPDATE

City of Lincoln, California

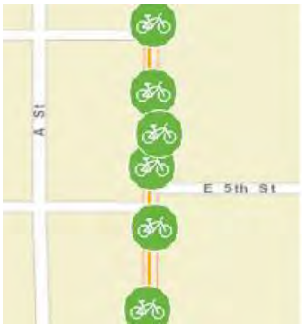
APPENDIX C: Public Comments


Public Comments on Interactive Webpage
SHERIDAN LINCOLN BLVD
W WISE RD
WISE RD
MCCOURTNEY RD
FRUITVALE RD
N SHERIDAN LINCOLN BLVD
E 12TH ST
NICOLAUS RD
9TH ST
H ST
EAST AVE
NELSON LN
LINCOLN BYPASS
LINCOLN NEWCASTLE HIGHWAY
SIERRA COLLEGE BLVD
JOINER PKY
LINCOLN BLVD
HWY 65 N OFF
FERRARI RANCH RD
MOORE RD
STONERIDGE BLVD
DEL WEBB BLVD
E JOINER PKY
TWELVE BRIDGES DR
E CATLETT RD
FIDDYMENT RD
ATHENS AVE
INDUSTRIAL AVE
STATE HWY 65
WHITNEY RANCH PKY
PARK DR
WILDCAT BLVD
W OAKS BLVD
SUNSET BLVD
Legend
Comment: Point
Comment: Line

East Avenue is a major trafficroute in/out of the city for both residents, construction, farmers, ranchers, mtce, and cyclists as well as school students. Road needs major upgrade that includes functional sidewalks, designated and clearly marked bike lanes (not paths - existing bike path is poorly maintained and is dangerous as young children use it to get to school). Too much debris. Route needs to be swept more frequently as current conditions pose safety risk to cyclists.

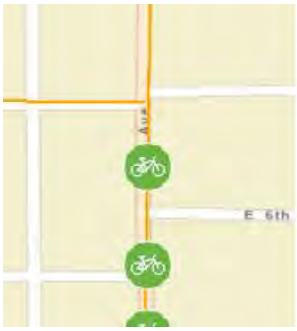
East Ave is crying for bike lanes. A school at one end, plenty wide for bike lanes and parking, a major transition road for cyclists heading to the rural roads north of town.

East Ave. There is a need to establish lanes for motor vehicles traveling both ways on this road. This is due to the width of the road. Cyclist need to clear parked vehicles, turning vehicles and vehicles that do not know were to center of the road is. Please establish a through traffic lane, turn lanes (if possible) and parallel parking. Also the road surface need some help.. Thanks...



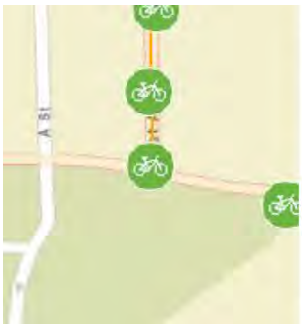
no designated bike lane

East Avenue is poorly marked, no bike lanes, no signs regarding sharing with bikes. Also poorly maintained for road debris. Should be routinely swept.

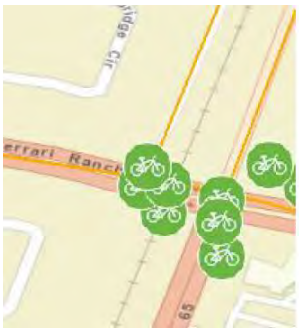


East St has very rough pavement. There is a utility plate that is sunken below the road surface. If a cyclist isn't watching, they could be seriously injured in a fall.

East Ave. - Need bike lanes on East and West side along with proper signage. This is a student bike route. The existing Bike Path on west side is no good since it only goes from the school to the first cross street. There is some kind of path that starts again up two streets but the vehicles stop after the crossing. BAD Engineering. Put in Bike lanes on both sides. Stripe the street to keep vehicles in center, bikes on right side. Street is too wide. Currently vehicles wander all over the street without stripes

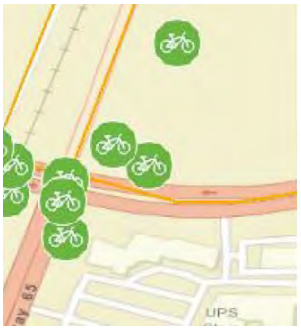


Traffic light should recognize presence of bikes and allow change from red to green for their participation.



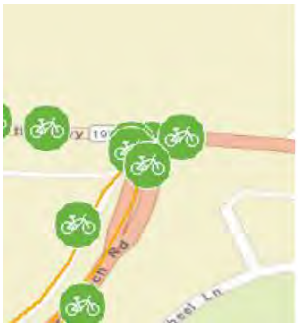
There needs to be a curb cut. For a wheelchair to get on and off the trail here you have to go to the end of the block.

There needs to be a safe route from the corner of Ferrari Ranch and Lincoln Blvd north into downtown. There needs to be more lighting and a clear bike lane.



Need a paved road/ sidewalk to safely cross over train tracks

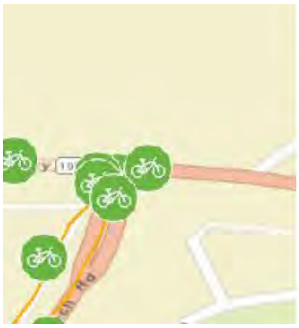
Resurface the shoulder the entire length of Ferrari Ranch road from Safewaty to 193



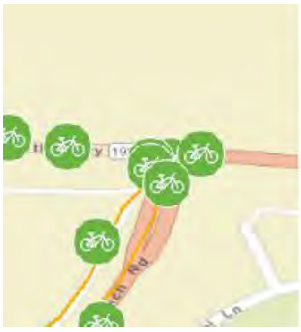
Bikes should be able to activate left turn signal to go from Ferrari Ranch Rd. to 193

Hwy 193 Shoulder both North and South sides from East Ave to Ferrari Ranch is rough, and very sharp transitions between repeated resurfaces. Please resurface...

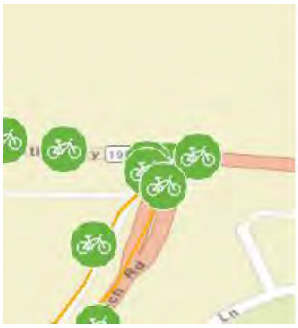
There is no interface from Hwy 193 to Ferrari Ranch BIKE PATH along side Ferrari Ranch going West. Cyclist trying to make this turn must go out into the vehicle right turn lane on Hwy 193, turn into the vehicle through lane on Ferrari Ranch and then make an immediate right turn on to the Bike Path. Very dangerous for all.



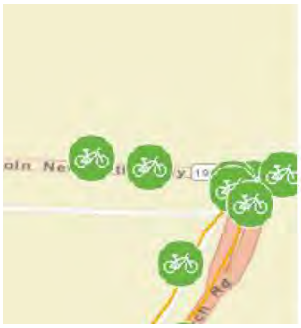
Need a better way to cross from westbound 193, left onto Ferrari ranch road. Waiting at the ped crossing is dangerous and increases exposure by at least 2x, however waiting for the protected left turn light is likely to get you run over by high speed through traffic on 193.



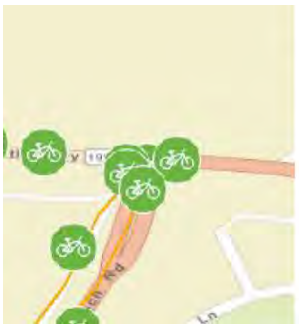
Hwy 193 & Ferrari Ranch Rd. This is a hazardous intersection for cyclists heading EAST on Hwy 193 turning WEST onto the Bike Path running along side Ferrari Ranch Rd. The cyclist must exit the should into the same lane cars are turning West onto Ferrari Ranch from Hwy 193 both EAST and West and make a sharp turn on an uneven surface to enter the Bike Path...Help!!!



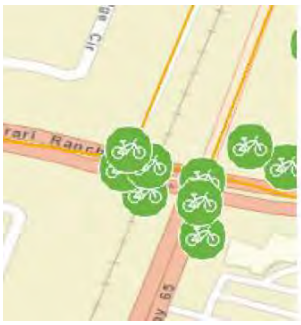
Bike path ends at Ferrari Ranch Rd and 193. There is no way for a cyclist to safely continue to the west on 4th St.



Hwy. 193 - Bike lanes and signage on North/South sides between Ferrari Ranch and East Ave. This is a major route for cyclist passing through to East Ave and Virginiatown to the County roads.



Traffic signal should recognize presence of bicycles and allow for change to green for their usage even if no cars are present.



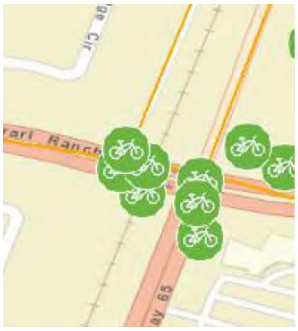
The connector between highway 65 Intersection, westbound over the railroad tracks to Auburn Ravine Park trail is Poorly defined and unsafe. It drops into a dirt area. It is unsafe due to debris on dirt, the lack of pavement on approach to railroad tracks and no pavement from railroad track to crosswalk/traffic signal. Please mark and pave.

Install cyclist signal activator and cross walks on all four intersections. Student safety..

Need a better crossing here, the path/sidewalk ends in a drainage ditch and railroad tracks. In general, a safer, more family friendly path into downtime is needed

Add bike lane on south side of Ferrari Ranch at RR Xing, with pedestrian activated light control. This crossing is very dangerous for bikes due having to mix with cars and short light.

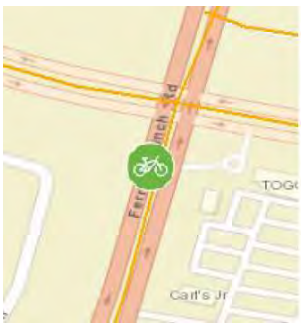
Crossing the railroad tracks from the west is often difficult. There is no pedestrian crosswalk on the south side of Ferrari Ranch Road, so if there are no cars to trip the traffic light, one must either wait for a car to trip the light, which sometimes takes a surprisingly long time, or try to maneuver across three lanes of traffic to the north side of Ferrari Ranch to utilize the pedestrian crosswalk. If successful in this venture, one ends up on the wrong side of the street to proceed west on Ferrari Ranch Rd.



No good connection to bikeway from street crossing

3. At the intersection of Lincoln Hwy. and Ferrari Ranch Rd., it is difficult for a bicyclist to go in the eastward direction across Lincoln Hwy. There is no button to trigger the signal light if no cars are in the crossing lane. A trigger button needs to be installed in a convenient location for the bicyclists.

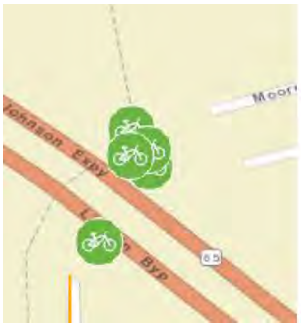
FERRARI RANCH - BIKE LANE - East Side: This bike lane holds the record of being the roughest, hardest to ride, bike lane in Placer Co. The contractor made no effort to smooth it out. This causes bike riders to pull out into the traffic lane to avoid bumps, cracks, etc. Dangerous to riders and drivers...



I would like to see more rest rooms along the bike paths. This would provide bathroom facilities for not only bikers, but runners and walkers and would prevent folks from having to find a spot that might cause a bad situation. Consider a bathroom every 10 miles apart as an example or near a park area.

Ferrari Ranch Rd., bike lane is very rough and has bad transitions between concrete gutter and road surface. This forces cyclist into the vehicle lane. This is a two lane road with a shoulder only on the South side. North/East bound vehicles must move over into the South/West bound vehicle lane to avoid contact. The South/West lane does not have a shoulder.

1. The City of Lincoln ("the City") has stated that improving existing and building more pedestrian/bicycle paths is a priority to make the City more pedestrian/bicycle friendly. The following is my highest priority suggestion. I recommend that the City build a pedestrian/bicycle path under the Hwy 65 Bypass to re-connect both ends of Moore Road. It is important for the City to re-connect the residential areas on both sides of the Freeway at Moore Road that became disconnected when the freeway was built. In my opinion, this was a huge mistake and oversight.



Connect these two portions of Moore Road with a bike path under Highway 65. The bike path would be in the floodplain of Auburn Ravine and would have to be built accordingly. While it is in the floodplain, I have not seen it flood. I walk this area regularly.

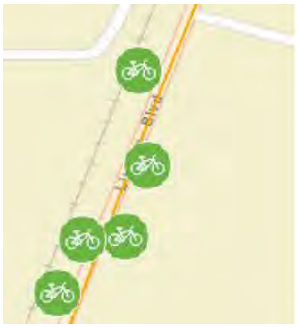
Connect the path on both side of Moore. It would add more accessibility the the other side of Lincoln Crossing with a shorter bike route for those who live in Sorrento. It could allow more families to ride bikes to Creekside Oaks and Lincoln Crossing.

If enough money is available, connecting Moore road together with a trail under Hwy 65 would be a great improvement.

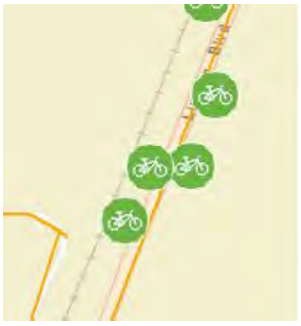
Moore Rd. at the Lincoln Bypass needs to be re-connected with a Pedestrian-Bicycle Path. When the Bypass was built, the neighborhoods on either side were cut off from each other. This is especially difficult for the residential neighborhood on the southwest side of the Bypass because people have no short way to to walk or bike ride to the northeast side and o work their way up the Auburn Ravine (e.g. the Dog Park) and to downtown Lincoln. This project needs to be of high priority in the City's planning, in my view. Bruce Castle 1-27-2018

Hwy 193 has a decent shoulder from Ferrari Ranch to Sierra College. Need to place "Share the Road" signs on both North and South sides. Vehicles travel fast and some pull over to the shoulder. This causes cyclist to move over into the vehicle lane to pass... Motorist should be aware there are cyclist on the road with them...

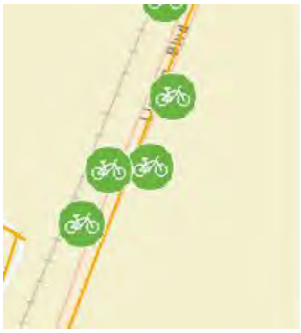
The paved trail behind homes between hwy 193 and sun city (the Ferrari Ranch Trail) was a favorite of my terminally ill husband. The access was off of Haywagon Ct. We rode our tricycles there just to get outdoors and enjoy the neighborhood. The streets in sun city are a bit narrow so it is helpful and safer to have options for slow bikers. Thank you very much.



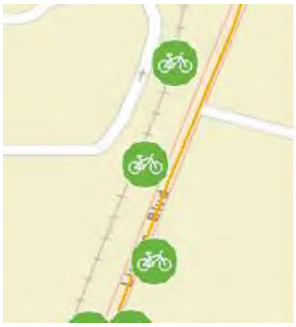
Smooth bike lanes and sidewalk need to be added and improved along Lincoln Blvd.



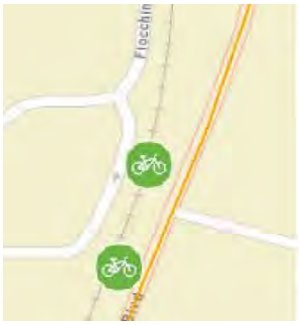
When the bridge over Auburn Ravine is improved this would be a great place for a viewing area and interpretive signage. It is a great unique feature of Lincoln and needs to be highlighted. Eventually this could be a point for a trail to also lead along Auburn Ravine.



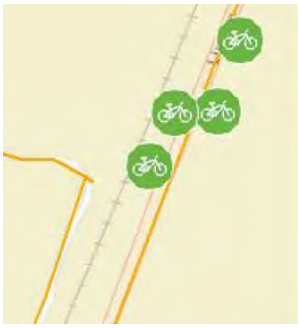
Sidewalk above the bridge is narrow and bumpy for bike riding



Bike lanes and sidewalks needed to connect LC to Gateway area.



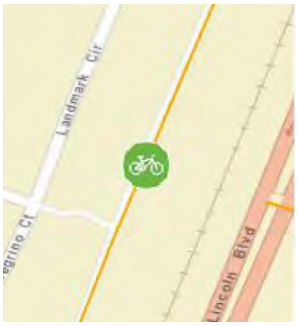
Suggest showing existing bike lanes so individuals can comment on them specifically and not just locations. Araceli



bike lane needs to be smoothed out along old hwy 65

If the riders are going to ride in town it would be nice to add bike lanes on old 65 to make it safer for driver and those riding bikes for actual transportation not recreation.

Sidewalks and safe bike lanes need to be added all along Lincoln Blvd, not just the downtown area, to connect Lincoln Crossing towards downtown area via walking and biking.



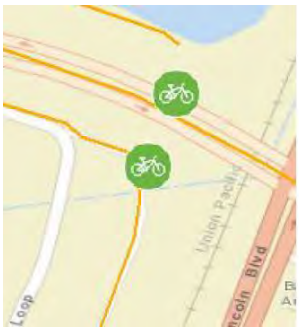
I know this would be a huge expense but a pedestrian/bike bridge connecting the path from the end of Groveland Ln to Lincoln Blvd at Sterling Pkwy area.

Right hand turns on Lincoln interfere with bicycles

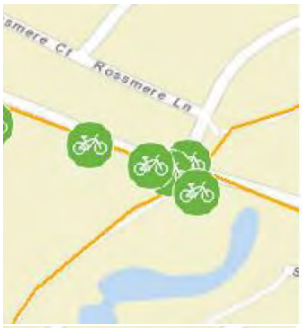
Please add bike lanes on both sides to keep cyclist out of through traffic lanes. Also smooth out the shoulder/lanes. Add method to warn drivers of cyclists on road on East Side where vehicle right turns cross with cyclist going straight into Lincoln.

Add Share the Road Signage between the Park and Ride and Ferrari Ranch

There is a wide shoulder starting at about 1st St., going south. It ends at Ferrari Ranch. This should be continued to Industrial since that is how a cyclist goes to the Casino, work, school or a daily ride. Also need signage to indicate cyclist on road.



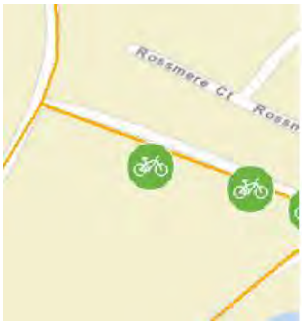
Just the other side that needs to be connected to the path next to the pond and the path behind Sheffield Lane.



Bike lanes, and a stop sign and crosswalk at this corner.

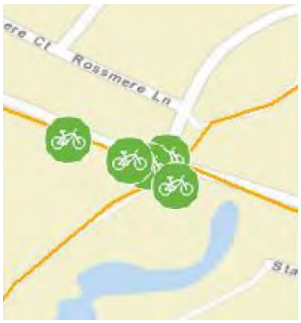
Bike lanes, sidewalks, stop sign, crosswalk

It would be nice to have an ADA accessible curb (ramp-sorry I don't know the technical term for it) here with a cross walk to connect the 2 bike paths that line up across Brentford. It would help with strollers, people who use wheelchairs, and people on bikes.

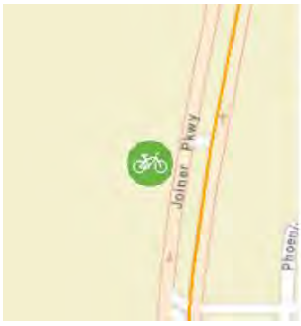


Sidewalks and bike lanes, stop sign and crosswalk at Alberton And Brentford

Sidewalk and bike lanes

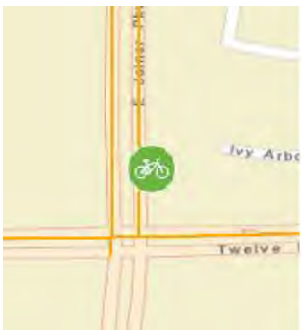


Bikes lanes, stop sign, crosswalk, sidewalks



It would be great to have a smooth, unified path down to shopping at Lincoln Crossing, from Foskett Ranch. With many comments being posted on fixing Lincoln Blvd, consideration should be given this very busy roadway.

Road, especially southbound from Chevron Station to Rocklin city limits, is very dangerous to both pedestrians and cyclists. Intersection at East Joiner and Westview is a real problem during student drop off and pickup. I have observed multiple vehicles using the dirt "shoulder" near this intersection to bypass the vehicle backup during dropoff/pickup. As cyclist use the extremely narrow shoulder and pedestrians use the dirt "shoulder" this presents a very real safety issue. Need a plan for traffic flow, vehicle parking in dirt "shoulder", Category 2 bike lane (minimum) and sidewalk on southbound side of road.



Bikes cannot activate left turn signal moving from Joiner to Twelve Bridges

Two-lane road with no bike lane. High volume traffic in morning and afternoon with a middle school and high school (Whitney) along the road. At minimum, a wider shoulder is needed for cyclist safety.

Need to add sidewalks and bike lanes with a safe corner crossing for students. Major safety issue here. Really should be a traffic light, not a stop sign.

We need a safe way to cross E. Joiner Parkway from Wilson Park to the shops and library.

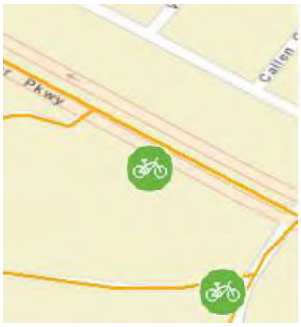
E. Joiner Pkwy. Need cycle lane on West Side. There is no shoulder. Students use this route to Whitney HS and the Middle School. Also no crossing point for students to exit to the middle school parking lot from West side...

E. JOINER PKWY... Vehicles parking on West side (mud hole) between Fire Station and Lincoln Town line create a pedestrian crossing hazard to vehicles and cyclist. They also take down the Share the Road signage...

We need a safe way to cross Joiner Parkway from the trail in front of Twelve Bridges Middle School in order to get to the Lincoln Public Library.

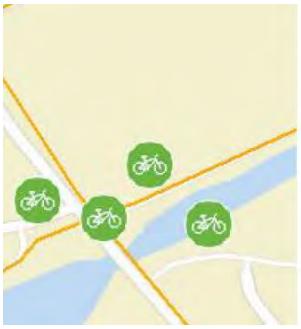
Bike lane needed on West side along with proper signage. This is major route for students biking to the middle school. SAFETY ITEM

STUDENT SAFETY - You need to provide a safe crossing path, with vehicle controls, for students riding their bikes SOUTH on E. Joiner, to access the TBMS campus. Also need proper BIKE LANE on the West side of E. Joiner between Twelve Bridges and the Lincoln City line. Student Safey...

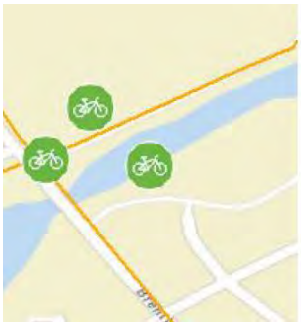


These two Class I trails need to be connected, perhaps by adding a center stripe on the sidewalk to indicate bike lanes.

Add bike lane to match bike lanes Wildcat in Rocklin. Student bike route to Whitney HS. SAFETY ITEM

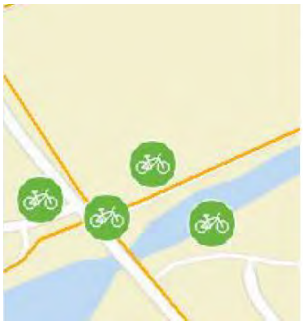


Needs a curb cut for wheelchairs

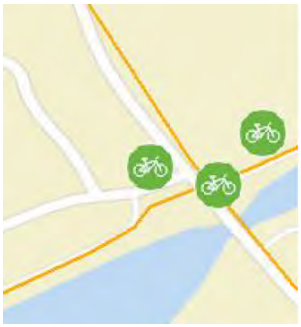


Needs a curb cut for wheelchairs.

This intersection has a curb and is unmarked as to connecting the bike path across the street. It would be great to have an ADA accessable ramp and marked crosswalk here.



Bike lanes, sidewalks

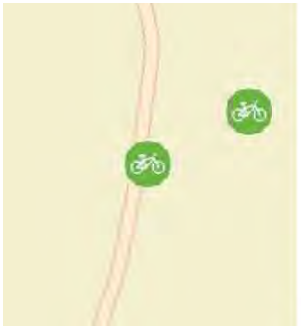


Needs bike lanes, sidewalk

Class 1 bike path ends. It would be nice to have it connect elementary schools to the regional park.

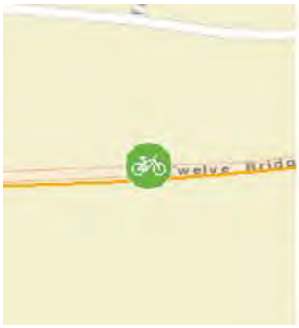
Safer way to cross the street at this intersection.

One of the worst roads in the area.

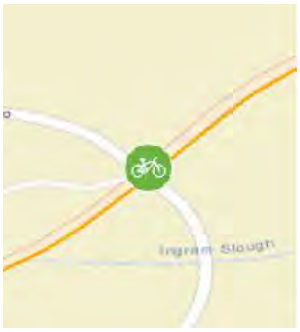


McCourtney has deteriorated much in the last few years. While I assume it is out of the area of this study, it needs to be repaved and shoulders added or at least designated.

This section over the tracks is very rough and dangerous for cyclists. I assume there are a number of school kids who ride over this everyday.

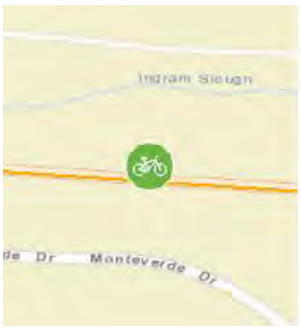


The section of Twelve Bridges Dr. between Verdera and closer to the elementary school may be adequate for experienced adult cyclists, but is a borderline death trap for kids and recreational cyclists. There really should be a separate bike path from a road where the posted speed is 50 mph and is much higher in reality. There is more then adequate space to add such a lane. I rode with my two small kids to get to the sports field by Twelve Bridges Elementary once last year. That white knuckle ride added a few more gray hairs to my head. Please consider this improvement. I hate to say it, but eventually someone will get seriously injured here. Verdera, 12 Bridges, and the new developments going in along this street all need to be safely interconnected with paths and trails. It's surprising that isn't a part of the development already.

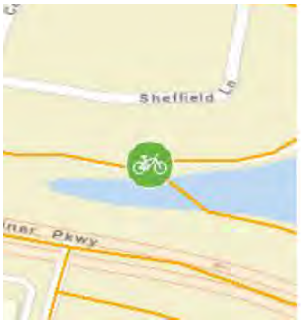


Please consider a crosswalk to connect Camino Cielo and Camino Verdera. One of the ones that has a flashing light that goes on when a button is pressed would be a needed safety feature.

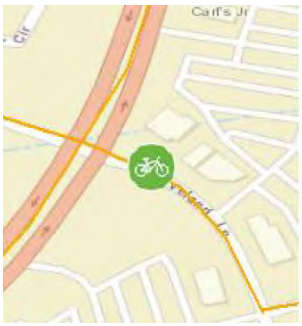
There was supposed to be a bike / walking path between Via Karina past the pond down to the next road. It even shows up on this map! But it's not there. This should have been built as a condition on this development, so why didn't the City make sure it was built? Fortunately there is still access before the first house on this street. Before development gets too far along on the street below Via Karina let's make sure this path is built. It will be a great connector and I imagine eventually lead down to Coyote Pond and the parkland adjacent to Twelve Bridges.



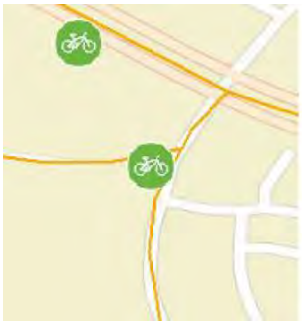
There is the perfect amount of shoulder and landscape border along Twelve Bridges to build a great Class I bike lane and adjacent trail for kids and adults. It could run all the way from the water storage pond above Verdera and all the way along all of Twelve Bridges from Sierra Collage to Twelve Bridges Elementary. It would be great!



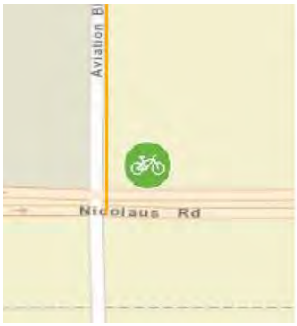
Create a bike/Walking path to backside of pond and over to the path behind Equinox Loop. Going under the overpass. This should be connected. Right now you have to go out to Ferrari Ranch, then cross over heavy traffic, turn onto Joiner, then to Stanmark then a little fire access opening and down to Equinox Loop before getting back on that path. For kids it is scary and dangerous. Connecting underneath and there would make that a really pleasant and important connection for walking/biking enthusiast to enjoy those beautiful trails.



Current bike lane markings are faded.

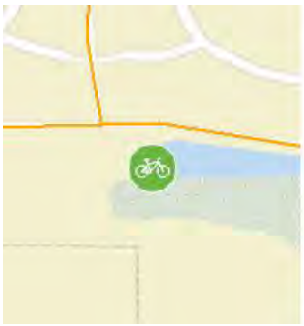


The sidewalk stops abruptly from Joiner to Ferrari Ranch on Groveland. Either extend the sidewalk that distance or add a ramp so that bicycles can leave the sidewalk area easily to join the class 2 bike path.

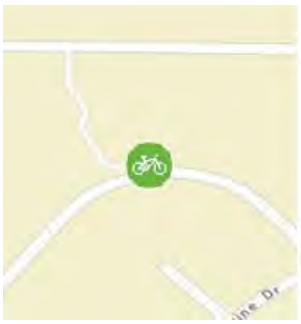


Having a wide bike path whether it be class 1 or a class 2 with buffer striping from Nelson to Teal Hollow on Nicolaus.

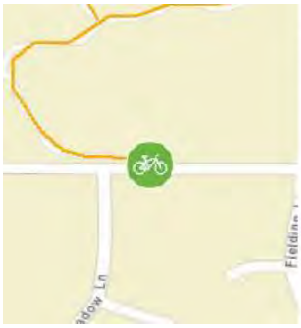
This is a powerline Road that could be easily turn into a bike path to Thunder Valley casino



It would be very cool to add a path from here to thunder Valley Casino under the powerlines. It would ultimately tie Lincoln to the bike paths of Sacramento.

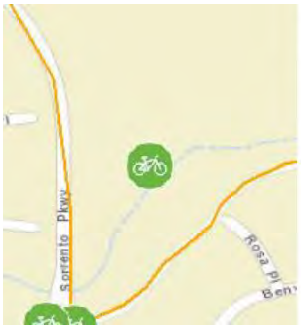


A curb cut should be added here. You can't get on or off without going to the end of the block in a wheelchair.

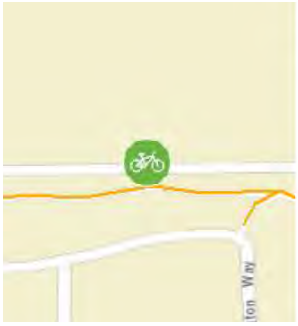


There should be a curb cut here. A wheelchair cannot get off or on without going to the end of the block.

A bike trail should start at Machado Park and down Danby lane to the entrance of the outher bike trails located at the entrance of Danby Ct. These existing bike trails run along Moore Road and down Moore road to the dog park. This is a perfect place for this bike trail for there is no sidewalks on that side of the street and already a lot of families are using it even though there is not a designated bike trail. Protect our children and put one there.



Add water fountains to the park.



Needs bike paths/signage.

Add a directional bike path sign since it just dumps into the neighborhood.

Industrial Ave. from Athens to Twelve Bridges and beyond to the park and ride needs a bike lane. I used to commute to work but this road became too dangerous on a bike.

Establish bike lane on West side. Currently there is none. The white line is not enough. This area is used as a parking lot or mud truck training area. Dangerous for students traveling South to WHS.

9th/Nicolaus Rd. Please install Share the Road signs for student safety on both sides..

Nicolaus Ave. Install Share the Road signs for student safety on both sides... Thanks

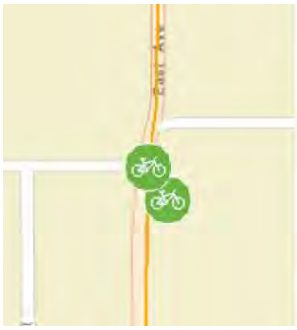
W. Wise Rd. Install Share the Road signs both sides... thanks

Sheridan/Lincoln Rd/Old Hwy 65. Please install SHARE THE ROAD signs between Lincoln and Sheridan on both sides.... Thanks

McCourtney Rd. Please install SHARE THE ROAD signs on both sides... thanks

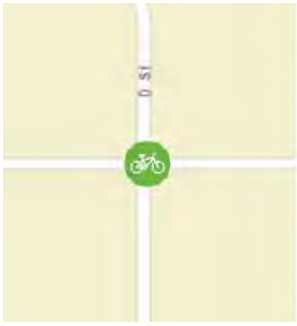
Virginiatown Rd. Install SHARE THE ROAD SIGNS both sides, please... thanks

Need SHARE THE ROAD SIGNAGE between Ferrari Ranch Rd and Sierra College both North and South sides. Vehicles are traveling at high speed and need to know cyclists are using the shoulders. Cyclist must enter the vehicle lanes to avoid wood, gravel, debris, etc that is on the shoulders



East Ave Bike Path is a joke. A cyclist must stop and cross all the Streets, 5th, 6th, 7th, 8th and 9th. The pavement also stop and starts between various streets for no reason. This does not provide a safe and sane route for children going to and from the school. Recreational riders will stay on East Ave and fight traffic rather than use the bike path... Help

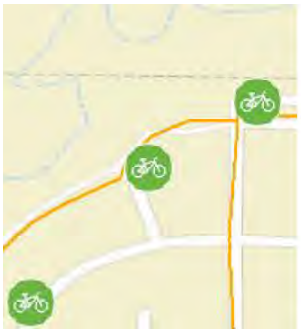
Industrial & Twelve Bridges Intersection. The road is broken up, patches on patches, cracks and pot holes. Cars & trucks trying to miss the holes! Cyclist try to stay away from vehicles and road decay. Please fix this intersection. Actually the whole of Industrial need ER work between Athens and the Park and Ride... Help



I received a phone call from a resident who lives at 6th and D and would like a safer path of travel from her house to Safeway. Lincoln Blvd is too busy and has limited bike lanes. Going to Ferrari Ranch is better but out of the way and crossing over Auburn Ravine on McBean Park Drive is dangerous. She would like to see more push for improvements that benefit those who use bicycles as transportation and not just for recreation (i.e. not just so people from Del Webb can ride out to Virginiatown Road). Would also like more focus on the downtown and bike accessibility to/from shopping districts.
-Roland Neufeld

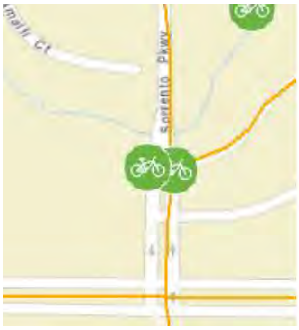
Fiddyment Road / connectors between casino and Lincoln Crossing. The roads are filled with potholes

add open up moore road to west to highway 65 thanks

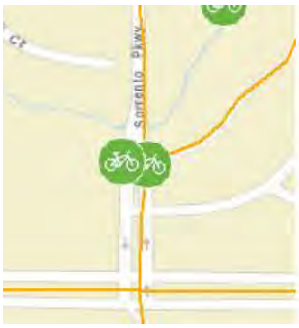


I'd love to see this trail connect with Moore Rd to the West and continue up to the airport. This would allow for a long ride off the road entirely and would connect the trail system in downtown and south to the north end Foskett area.

Joiner is the only/best place to cross the Auburn Ravine and it forces you off the trails and onto the road. Some trail crossings would be terrific.

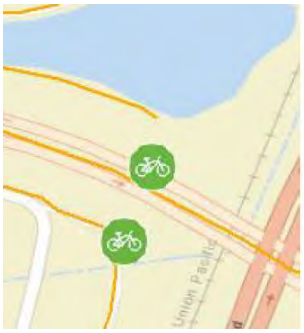


Add as many bike paths that you can. Look at what FOLSOM has. Don't put in a curb when a bike path comes to a street. A very exciting project !



The bike crossing that goes across Sorrento Parkway can be dangerous since cars do not stop there. I've seen several bicyclists, joggers, kids and adults just run across without looking or stopping. With more development coming to this end of town there's bound to be more traffic. I wish they would put in flashers that you could activate from either side of the crossing. I know it's not cost efficient, but this crossing scares me especially for kids.

Bike lane and sidewalks and a 4 way stop needed here also. Ridiculously small roadway and the stop sign is set too far back for bike riders and cars alike.

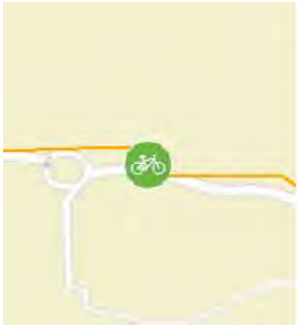


Connect the trails on both sides of joiner, they should connect beneath the overpass

Need a dedicated path here, or some other additoinal path or bridge to get from Ferrari Ranch past this bad bridge crossing and into or around McBean park

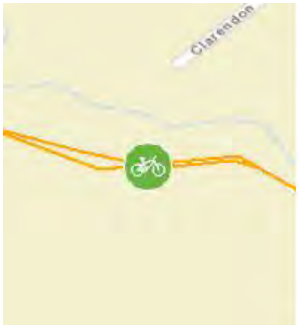
193 and sierra college should be bike friendly. This would be a perfect loop from twelve bridges (lots of bikes) to easily get to downtown.

Bad bridge crossing

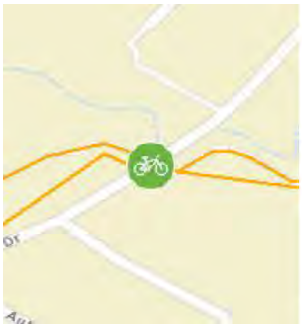


There is a gap in the bike path here. There is a patch of bare dirt/mud that we have to ride over to get from Finney Way to the start of the Foskett bike path. We would so appreciate your attention to this.

Bike path that safely crosses East Joiner from the park or TBMS

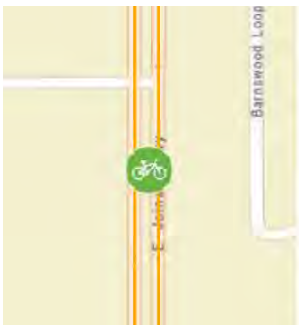


Repair cracks in trail. Many of these cracks wide enough to trap a bike wheel.

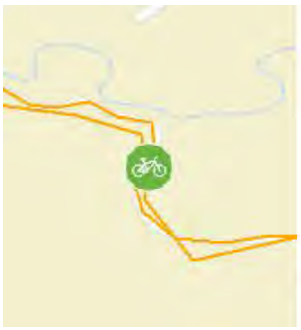


Replace entrance maze at both entrances to bike trail with single posts Like at all the other entrances. Trying to navigate through this maze with a bike has caused accidents.

Complete west side bike lane connecting Joiner from 12 Bridges to Rockland city limits. (This area dangerous due to lack of shoulder.)



EastJoiner Pkwy between Twelve Bridges and Del Webb Blvd. (North) needs re-striping.

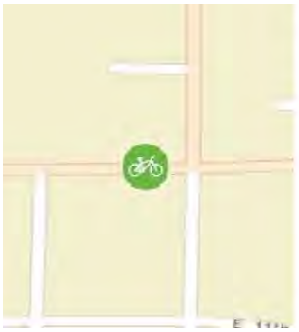


This area of trail has very wide cracks in concrete-skinny bike tires could get caught if the rider was not very vigilant, results could be veery bad.

Class I bike path needs to be extended along the Auburn Ravine throughout the City's general plan area

Need bike lanes, smooth on both East and West sides along with proper signage

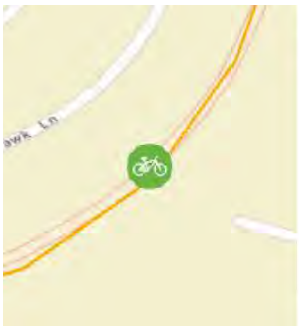
INDUSTRIAL - Full Length. Need Class I Bike Paths on West and East sides of road with proper signage



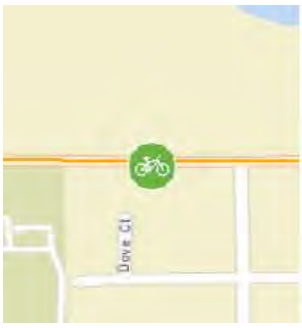
12th - Virginiatown Rd., add bike lanes both North and East side from East Ave to Lincoln town line. Dress up the road surface. This is student bike traffic to/from school. Also main exit out of Lincoln for recreational cyclist on weekends.

Hwy 193 - Share the road signage from East Ave to townline, both North and South sides....This is a major route for cyclist entering/exiting Lincoln from Rocklin area

Fix the road surface. Also add bike lanes on both sides. Add signage to warn drivers. This is a major artery for pedestrians, bikes, cars, trucks, etc., transiting to/from the Casino and Landfill...

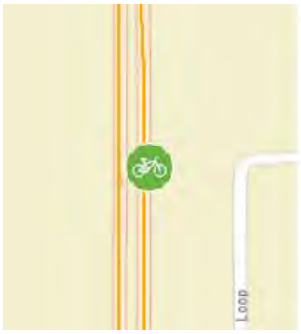


Twelve Bridges - Add Share the Road signage to both sides from Industrial to Sierra College.



Nicolaus Rd - Bike lanes both sides. Share the Road Signage. Student transit route to LHS...

2. In addition, I would like to see the City build a bicycle trail along the Auburn Ravine that is similar to the Miner's Ravine Trail in Roseville. This would extend from the Dog Park to Village 5. In the eastward direction, the "Auburn Ravine Trail" should be built from the Dog Park, past Hwy 193 out to Fowler Rd. or beyond. To make this happen would require the City to work with the Placer County Dept. of Public Works and Facilities. to do the planning and to obtain funding.



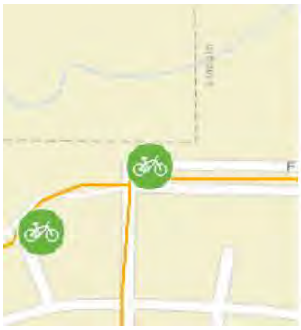
4. When some re-paving along E. Joiner Parkway near the north end of Bella Breeze Drive was completed a couple of years ago, the bicycle path overlay was not smooth. This needs to be fixed.

5. Within the "Safe Routes to Schools" program, East Avenue needs to be made more pedestrian and bicycle friendly for the children/parents that go the Carlin C. Coppin Elementary School. Some work has been done to make this area a little more user-friendly, but more improvement is needed.

The entire length of McCortney is heavily used by serious road cyclists. The condition of this road is quickly deteriorating. A new and wider Road surface is badly needed. The road surfaces applied to Virginatown, Fruitvale and Wise Roads set a road surface standard cyclists would love to see followed.

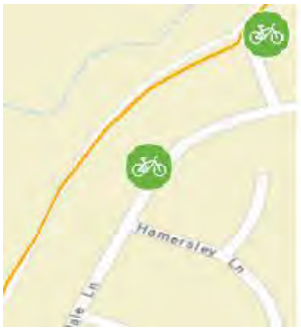
6. Recently, Placer County did an outstanding job of resurfacing West Wise Road and the eastern half of Fruitvale Road. This resurfacing needs to be done for Gladding Road out to West Wise Road. The City needs to work with Placer County on this project.

7. Recently, Placer County did an outstanding job of resurfacing West Wise Road and the eastern half of Fruitvale Road. This resurfacing needs to be done for McCourtney Road north of Wise Road. The City needs to work with the Placer County Dept. of Public Works and Facilities to make this happen.



The bike path that begins here has a couple places where tree roots are pushing up the path surface. The path is very unsafe to bikers, runners and others who do not see the danger hiding in the shadows. These roots need to be removed and the path surface made smooth.

8. I'd like to see the roads to the Manzanita Cemetery resurfaced, also.



This comment applies to this bike path and all city bike paths. Drainage is a concern on all bike ways. There are areas that are pooling water even after moderate rains. This makes portions of the bike ways unusable to all users. In addition, this pooling accumulates mud then sand, gravel and dirt making the path unpleasant at a minimum and unsafe at worst.

Would like a path to the McBean Baseball Stadium.

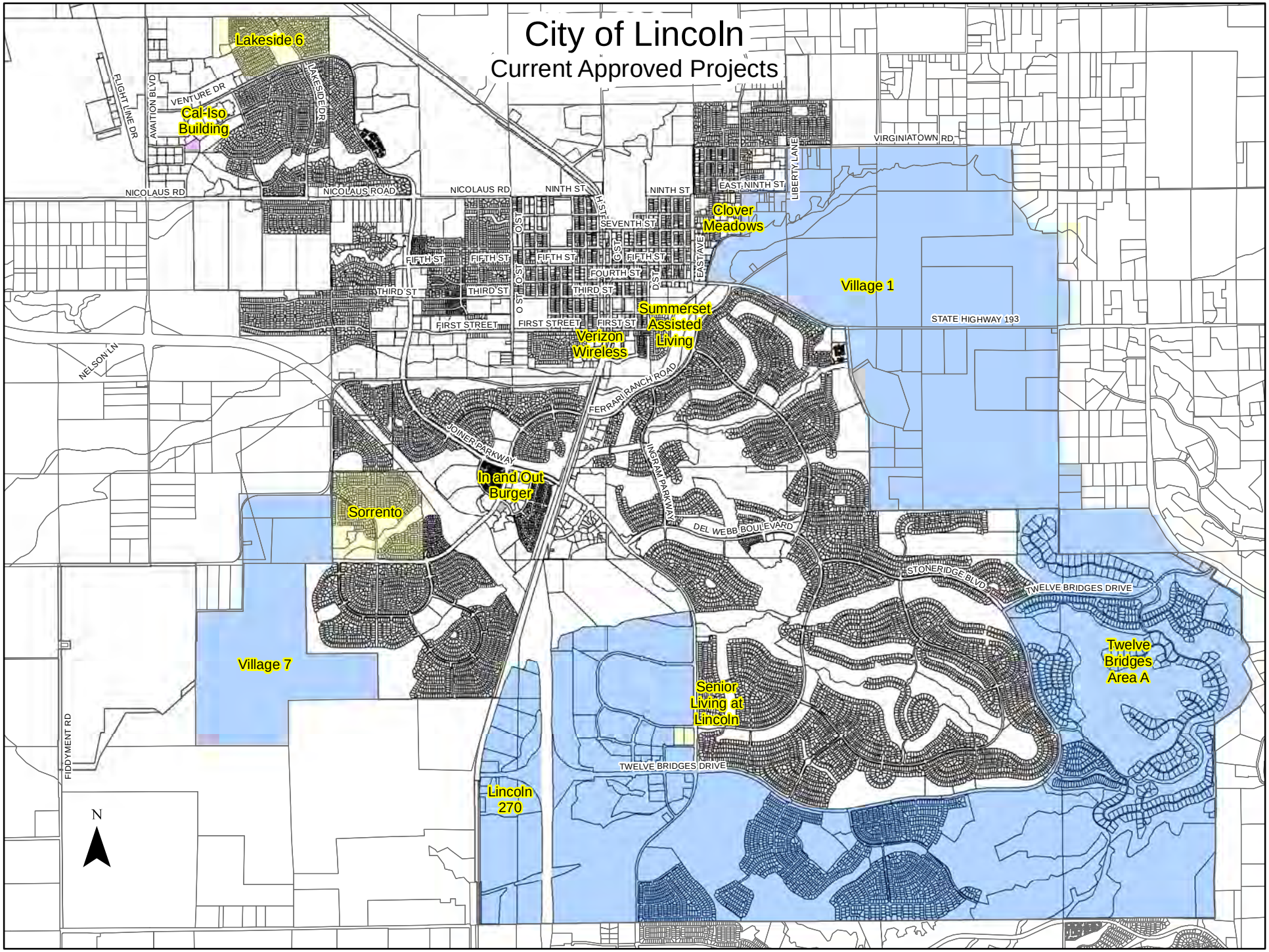
BICYCLE TRANSPORTATION PLAN UPDATE

City of Lincoln, California

APPENDIX D: Future Development

APPENDIX D: Future Development

Land Use



February 2016

City of Lincoln
Live. Life. Lincoln

**CURRENT PROJECTS UNDER CONSTRUCTION

RESIDENTIAL PROJECTS

TWELVE BRIDGES AREA A

4,335-Unit Planned Development on 2,989 Acres

Project has various entitlements including, certified EIR, Specific Plan, General Development Plan, Large and Small Lot Tentative Maps, and a Development Agreement with the City. The following home builders have homes under construction:

- Elliott Homes, Village 9 – Units 1, 3, & 4 229 Lots, *elliotthomes.com*, (916) 408-4100
- Carson Homes, Village 9 – Unit 1 area – 19 Lots, carsonhomes.us/twelve-bridges, (916) 572-6398
- Standard Pacific Homes, Village 12 - 38 Lots, *calatlantichomes.com*, (916) 543-5910
- Premier United Communities, Village 19 – 24 Lots, *premierunited.com*, (916) 543-3400
- Catta Verdera @ Twelve Bridges – Five hundred and ninety-five (595) lots for development of low-density, estate residential development. Private community with custom single-family home lots on 1019 acres includes a golf course, clubhouse, and private athletic club. Villages 13, 14, 15, 16, 17, (184 Lots, 85 building permits issued for construction).

SORRENTO

472-Unit Planned Development on 156 Acres

The project has various entitlements including, a certified EIR, General Plan Amendment, General Development Plan, Large and Small Lot Tentative Subdivision Map, and Specific Development Plan/Development Permit. The project is bordered by the Lincoln Crossing Development to the north, south and east with Moore Road to the west. One homebuilder has received Design Review approval for development of homes within Village 1, located along Ferrari Ranch Road:

- Meritage Homes, 165 lots, *meritagehomes.com*, (866) 675-9383

LAKESIDE 6

706-Unit Planned Development on 105 Acres

The project has various entitlements including a Mitigated Negative Declaration, General Plan Amendment, General Development Plan Amendment, re-zone of the land from Limited Light Industrial (LLI) to Residential (RD-5 and RD-20), and Tentative Subdivision mapping. One homebuilder has received Design Review approval for development of homes:

- JMC Homes, *jmchomes.com*, (916) 408-7170

CLOVER MEADOWS

Planned Development of 29 Residential Units on 3.1 acres

The City has approved an application for various entitlements including General Plan Amendment, Specific Development Plan/Development Permit, General Development Plan/Amendment, and a Tentative Subdivision Map for a 29-lot subdivision along East Avenue between E. Eighth Street and E. Ninth Street. The project is under construction.

SUMMERSET ASSISTED LIVING AND MEMORY CARE FACILITY

142,494 square foot Assisted Living and Memory Care facility

The project is proposed to be constructed on 2.76 acres between Second and Third Streets, along E Street. The project is proposed to have 115 assisted living units and 72 memory care units. The project is under construction.

COMMERCIAL & INDUSTRIAL PROJECTS

IN AND OUT BURGER

3,867 Square Foot Drive-Thru Restaurant on 1.34 Acres

Application for Conditional Use Permit and a Specific Development Plan. Located in the Lincoln Crossing Marketplace, at 850 Groveland Lane.

PROJECTS WITH ENTITLEMENTS – NOT CURRENTLY UNDER CONSTRUCTION

RESIDENTIAL PROJECTS

SENIOR LIVING AT LINCOLN

162,680 square foot Assisted Living and Memory Care facility

The project is proposed to be constructed on 7.13 acres at the southwest corner of East Joiner Parkway and Bella Breeze Drive. The project is proposed to have 114 assisted living units and 80 memory care units. No construction has taken place on the project.

EPICK 1 & 2

80-Unit Subdivision on 20.5 Acres

Application for a Tentative Subdivision map. The project site is located south of 9th Street, north of Auburn Ravine, and west of Liberty Lane within the Village 1 Specific Plan.

MEADOWLANDS

Planned Development on 59 Acres

Application for a General Plan Amendment, Rezoning, a Large Lot Tentative Map and Vesting Tentative Subdivision Map, General Development Plan Amendment, and Specific Development Plan/Permit Amendment; Previous approvals include Certification of EIR. The project consists of 187 single family lots, 5.47 acre multi-family lot, 6.60 acre park/detention lot, and a 4.5 acre open space lot. The project site is located on the North West corner of 9th Street and East Avenue.

MAGNOLIA VILLAGE

The Magnolia Village project is located in the western part of the City along Joiner Parkway, in the development plan area known as Laehr Estates. The project is approved for the development of 32 condominiums on 2.4 acres at the northeast corner of Joiner Parkway and Third Street on property zoned Residential Development – 18 units to the acre.

INDEPENDENCE

Master-Planned Community on 194 Acres

Application for a General Plan Amendment, Rezone, Tentative Vesting Subdivision Maps, Specific Development Plan/Permit and a General Development Plan. The project site is located on the former location of the City of Lincoln wastewater treatment facility. The treatment facility has since been deactivated. The project proposes to include the construction of 575 single-family residential lots, 45.6 acres of open space and preservation areas, 13.6 acres of active parks & community center, and a 2.7 acre mixed-use area, 3 acres of public facilities for a sewer lift station. The remainder 35 acre parcel will have not changes or development activity.

LAKSIDE 6 – PHASE 7 & 8

Rezone and 89-Unit Residential Subdivision on 11 Acres

Application for a rezone from High Density Residential/RD-15 to Medium Density Residential/RD-8.5 and a Tentative Subdivision Map. The proposed development is within the Lincoln Air Center Planned Development area. The parcel is located to the north of Lincoln Airpark Drive and west of existing development and Rickenbacker Lane. (Owner: Buzz Oates Enterprises II, Applicant: Mourier Investments LLC)

ANNEXATIONS

VILLAGE 7

Approximately 515.9 acres of land

The project has various entitlements including, a certified EIR, General Plan Amendment, General Development Plan, Large Lot Vesting Tentative Subdivision Map, Specific Plan, Pre-zoning to Planned Development District. The property is located south and east of Moore Road immediately west of the Aitken Ranch and Lincoln Crossing Specific Plan areas.

VILLAGE 1

Approximately 1,832 acres of land

The project has various entitlements including, a certified EIR, General Plan Amendment, General Development Plan, Specific Plan. The property is located east of the Auburn Ravine and includes land on both the north and south side of State Highway 193. The following properties have received approvals for a tentative subdivision map:

- Epick Three – Tentative Subdivision Map for 54.9 acres and a Parcel Map for a 68.7 acre parcel located north of McBean Park Drive/SR 193, and west of Turkey Creek Golf Course.
- La Bella Rosa - Tentative Subdivision Maps for a 56.3 acre property located north of McBean Park Drive/SR 193, west of Turkey Creek Golf Course, and south of Auburn Ravine.
- Walkup Ranch - Tentative Subdivision Maps for a 145 acre property located north of McBean Park Drive/SR 193, west of Turkey Creek Golf Course, and south of Leavell Lane.
- Turkey Creek Estates - Tentative Subdivision Maps for 248 acres of land located north of McBean Park Drive/SR 193 and east of Turkey Creek Golf Course.

PROJECTS GOING THROUGH ENTITLEMENT REVIEW – NOT CURRENTLY APPROVED

LINCOLN MEADOWS

148-Unit Planned Development on 40 Acres

Application for Annexation, Pre-zoning, General Plan Amendment, General Development Plan, Specific Development Plan/Permit and Tentative Subdivision Map. Project site is located on the north side of Virginia Town Road, west of Hungry Hollow Road.

HIDDEN HILLS

220-Unit Planned Development on 78 Acres

Application for a Small Lot and a Large Lot Tentative Subdivision Map, and a Development Permit. The project site is within the Village 1 Specific Plan and is located at 560 Oak Tree Lane, south of Oak Tree Lane.

VILLAGE 5/ SPECIAL USE DISTRICT 5

Master Planned Community, 8,100 Residential Units within 4,787 Acres

The planned development project is located in the western area of Placer County, immediately west of the City of Lincoln. The plan area is comprised of 141 parcels and many different landowners. The applicant, Richland Developers, Inc., owns and/or controls approximately 1,541 acres (approx. 32% of the total) within the Plan Area boundaries. The Plan Area for Village 5 has multiple land ownerships, which will likely result in portions of the Plan Area to develop separately and under different timelines, anticipated to be over a 15 to 25 year period. Village 5 requires approval of a Specific Plan and Annexation.

SPECIAL USE DISTRICT B – NE QUADRANT

Master Planned Community

The SUD B – NE Quadrant consists of 186.2 acres located immediately west of the City of Lincoln, within Placer County. The 186.2-acre project consists of residential and commercial development. Planned residential development is approximately 428 single-family units and 800,000 square feet of commercial area. The planned area will require approval of a General Plan Amendment, Specific Plan and Annexation.

CROCKER KNOLL SUBDIVISION MAP

100 Single-Family Residential Subdivision on 26 Acres

Application for a Tentative Subdivision Map and General Development Plan Amendment. The project is located on the southerly terminus of Oak Tree Lane, in the Twelve Bridges Specific Plan Area 'C'. The project site is bordered on the north by St. Joseph's Church; on the east by the City limit line, the Placer County Corporation Yard, and Placer County; on the south by Open Space (within the Sun City development area); and, on the west by existing single family residential (Village 41B, Sun City development area). The property is undeveloped, but at one point in the past housed the Del Webb contractor's yard. There are no existing improvements on the property.

JOINER RANCH

Rezone and 194-Unit Residential Subdivision

There are two applications for the Joiner Ranch:

Joiner Ranch West is comprised of a General Plan Amendment from BP - Business Professional and CC – Community Commercial to MDR – Medium Density Residential, and a Rezone from BP – Business Professional and C – Commercial to PD-MDR – Planned Development-Medium Density Residential. No mapping is proposed at this time.

Joiner Ranch East is comprised of a General Plan Amendment from CC – Community Commercial and MDR – Medium Density Residential to MDR – Medium Density Residential, and a Rezone from G-C – General Commercial and RD-8 – Residential Development with up to 8 units to the acre to PD – MDR – Planned Development - Medium Density Residential. The application includes Tentative Subdivision Map to create 194 medium density lots with a minimum size of 2,940 square feet. The project is located at the intersection of Nicolaus Road and Joiner Parkway – on the east and west sides of Joiner Parkway

ST. JOSEPHS CHURCH

Application for a Specific Development Plan/Development Permit for the construction of a 17,775 square foot 'Family Center' to include a gym, meeting rooms, kitchen, and storage.

FULLERTON RANCH

Application for a re-zone from RE (Residential Estates) to PD-LDR (Planned Development-Low Density Residential), a Vesting Tentative Subdivision Map to subdivide 19.98 acres into 82 single-family lots, and a General Development Plan, and a for a vacant site located south of Nicolaus Road between the Glenmoor subdivision (to the west), and Brookview Unit 5 subdivision (to the east). A Mitigated Negative Declaration will be processed in compliance with the California Environmental Quality Act (CEQA).

CRESLEIGH GROVE MODELS

Applicant is seeking a Tentative Subdivision Map to develop four model home lots south of Virginiatown Road near the Lincoln Highlands Subdivision. The site will serve as a model complex for a future Cresleigh Homes subdivision located north of the project site. The application is located within the Village 1 Specific Plan and project entitlements include approval of the Tentative Subdivision Map and Development Agreement.

LINCOLN CROSSING EXPANSION

The applicant is seeking to modify previously approved Conditional Use Permit, Design Review and Specific Development Plan/Permit to allow for the expansion of the existing Club Lincoln private HOA clubhouse and recreational center. The existing development consists of a 12,486 square foot clubhouse, an outdoor pool, and a 1280 square foot cabana. The application is currently working on budget issues and a redesign of the expansion to address access and fire department (safety) concerns.

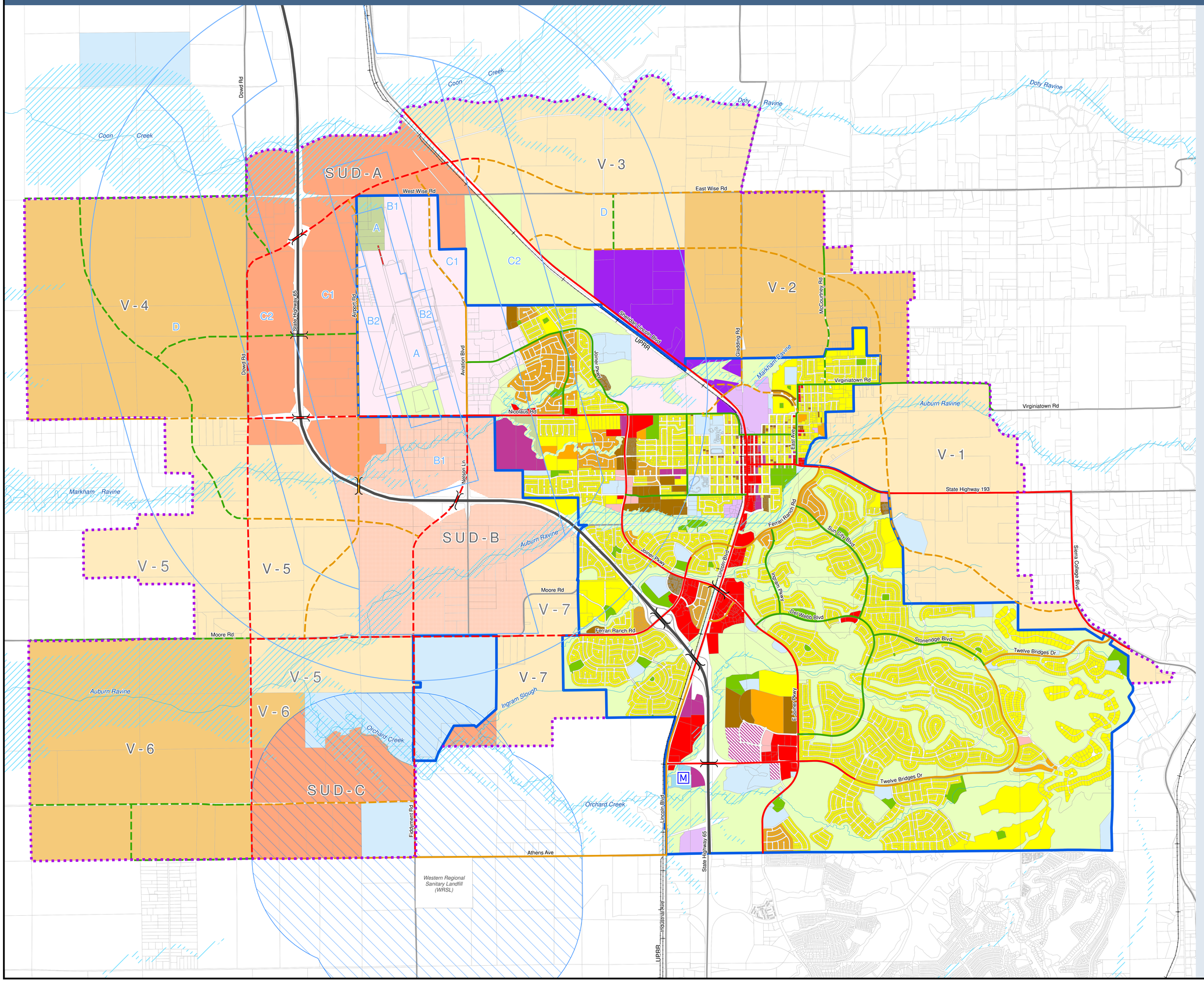
DEER CROSSING

The applicant is seeking a Conditional Use Permit and Specific Development Plan/Permit (Design Review) approval to development a currently vacant 3.6 acres parcel with a multiple tenant commercial development consisting of a 3,900 square-foot six-pump gasoline service station with a 3,400 square-foot pump island canopy and a 1,056 square-foot carwash, a speculative 2,870 square-foot commercial building with a drive-through, and two speculative multiple-tenant retail buildings totaling 14,803 square-feet. The project is on hold per the applicant pending resolution of access issues related to the future Village 1 Oak Tree Lane/Hwy 193 improvements.

City of Lincoln
General Plan

Land Use and Circulation Diagram

October 2012



Legend

LAND USE DESIGNATIONS

- Rural Residential (RR)
- Country Estates (CE)
- Low Density Residential (LDR)
- Medium Density Residential (MDR)
- High Density Residential (HDR)
- Special Use District (SUD)
- Village (V)
- Mixed Use (MU)
- Neighborhood Commercial (NC)
- Community Commercial (CC)
- Regional Commercial (RC)
- Business and Professional (BP)
- Employment Center (EC)
- Industrial Planned Development (IPD)
- Light Industrial (LI)
- Industrial (I)
- Open Space (OS)
- Agriculture (AG)
- Parks and Recreation (PR)
- Public Facilities (PF)
- Medical Center (MC)

ROADWAY CLASSIFICATIONS

Existing	Proposed
Freeway	
Major Arterial	
Minor Arterial	
Collector	

BOUNDARIES

- City Limits
- Sphere of Influence
- ALUCP Compatibility Zones

OTHER

- Airport Runway Expansion
- Railroad
- Landfill, 1-Mile Buffer
- 100 Year Flood Zone
- Waterways

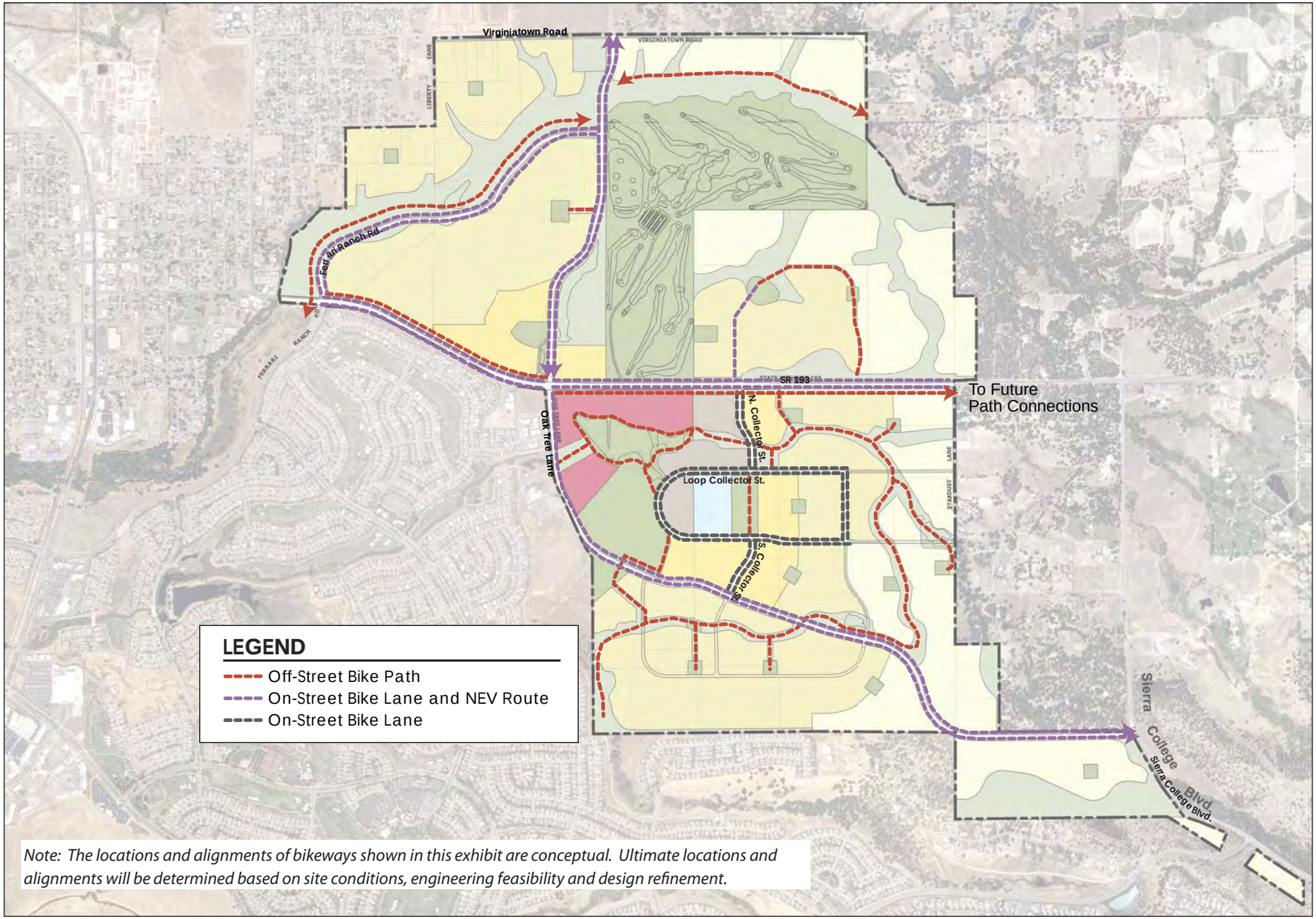
160 ac | 80 ac | 40 ac | 20 ac | 10 ac | 5 ac

N

0 1,500 3,000 4,500 6,000 7,500 Feet

FRAYJI DESIGN GROUP, INC.
2235 Douglas Blvd Ste. 320 (916) 782-3300 Phone
Roseville, CA 95661 (916) 782-3955 Fax
CIVIL ENGINEERING • PLANNING • SURVEYING

APPENDIX D: Future Development Specific Plan **Area** Bikeway Concepts



N. T. S.

Exhibit 4.9: Bikeway and NEV Route Plan

Figure 5-15: Pedestrian/Bike System

Roundabout

A roundabout provides an attractive intersection and visual terminus at the southerly end of Waverly Drive.

Roundabout Illustration

3.3.2 Pedestrian & Bikeway Network

The Independence Mobility Plan provides a comprehensive bike and pedestrian network throughout the plan with links to adjacent neighborhoods and a trail way along the Markham Ravine corridor. Figure16 illustrates the location of the trail network, and the paseos and pedestrian portals along the Markham Ravine trail.

3.3.3 Paseos

The tentative maps will establish typical pedestrian paseo at various locations throughout the residential streets. Figure 16 illustrates typical locations.

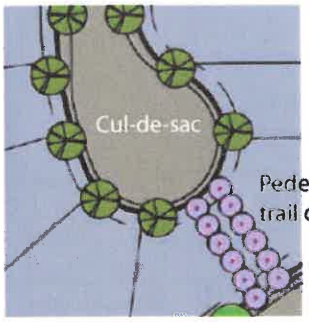


Figure 16 Master Pedestrian Trail Exhibit

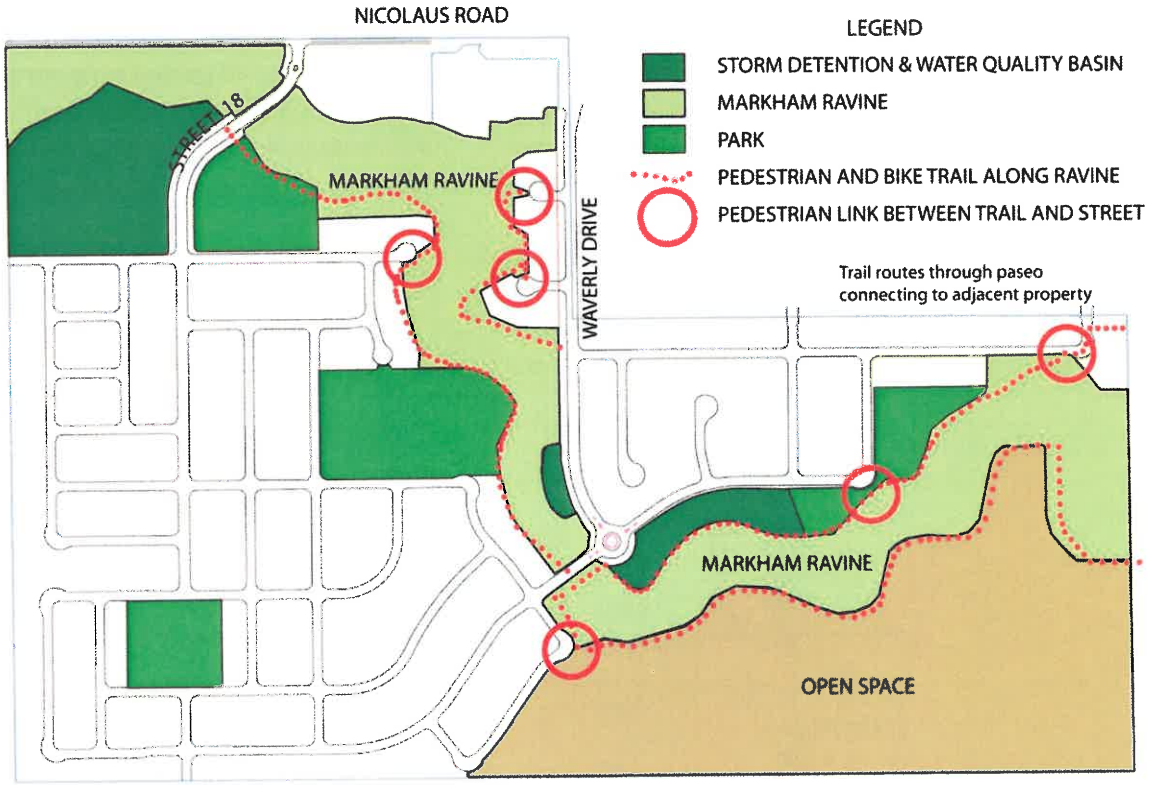
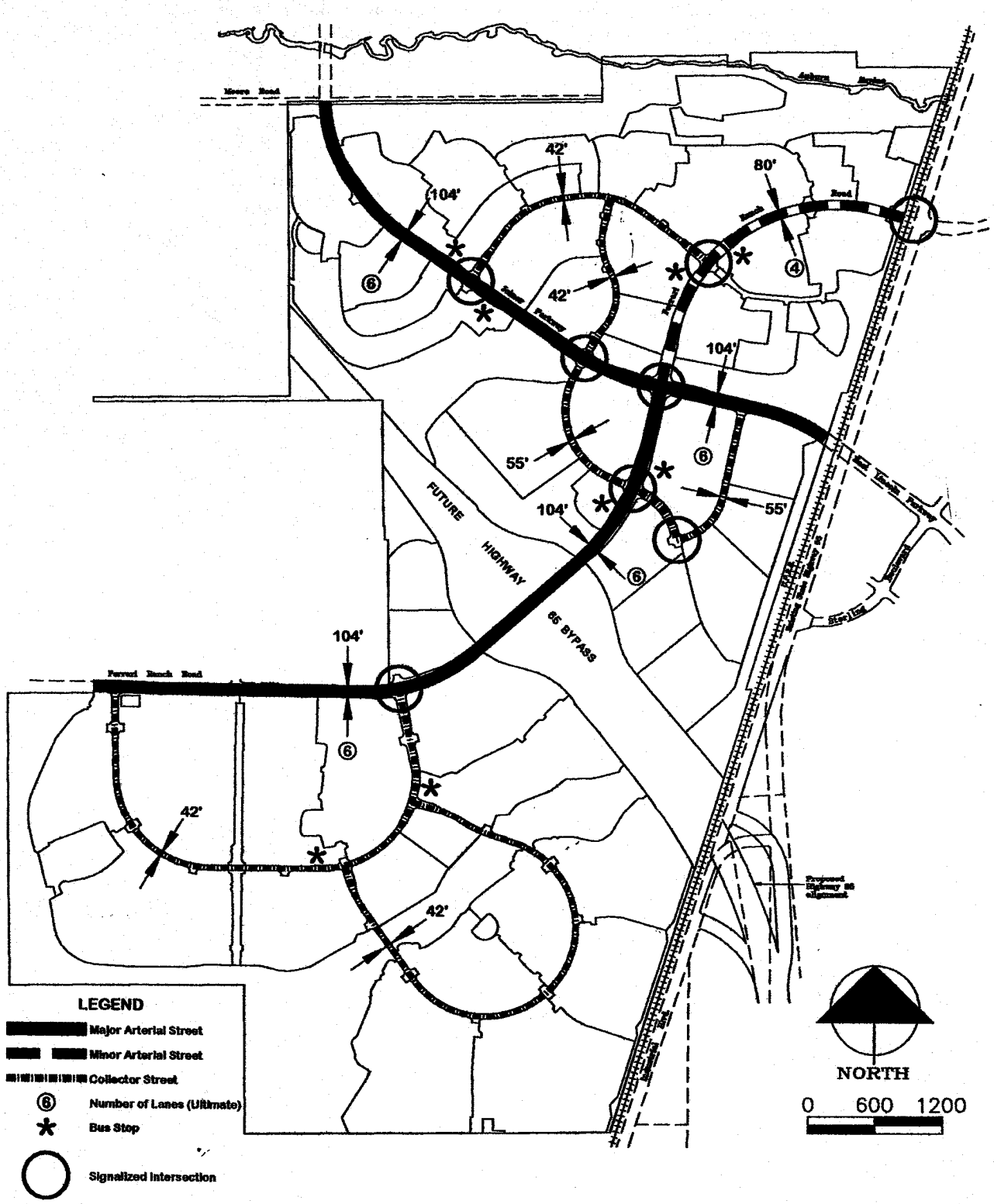
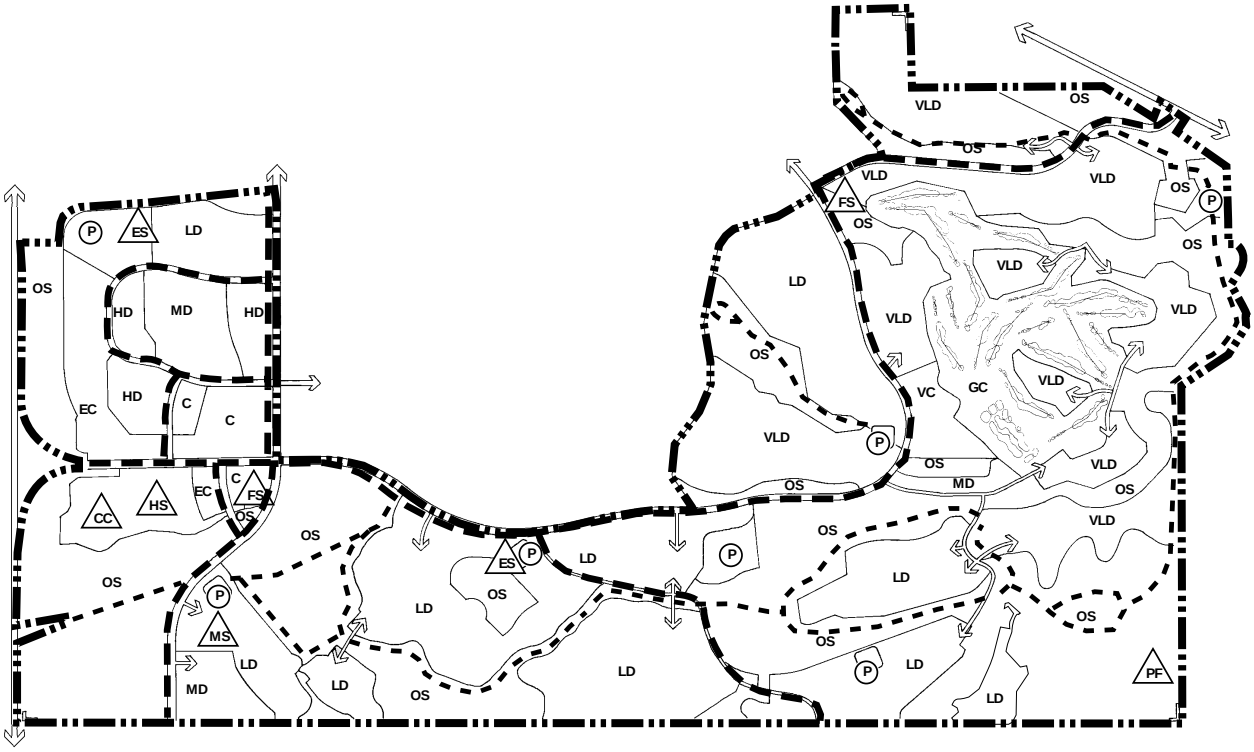


Figure 20
Circulation Plan





Legend

- Class II Bike Lane
- Trail Network
- Plan Area Boundary

NOTE All arterials and collectors have pathways incorporated into adjoining landscape corridors. Trail locations are conceptual only. Specific trail alignment will be established with Project Improvement Plans.

NORTH

TWELVE BRIDGES

Figure 3-15
GENERAL DEVELOPMENT PLAN
Non-Auto Circulation Diagram

BICYCLE TRANSPORTATION PLAN UPDATE

City of Lincoln, California

APPENDIX E: Planned Bikeway Improvements

Lincoln Boulevard Improvements Project

Former Highway 65 in Lincoln, now Lincoln Boulevard, has been relinquished to the City of Lincoln. The Lincoln Boulevard Improvements Project will focus on the segment from just south of Sterling Parkway to just north of Seventh Street. Since the opening of the SR65 Bypass, traffic patterns through downtown Lincoln have changed dramatically. The Bypass offered the City of Lincoln an opportunity to change the aesthetic and function of Lincoln Boulevard to better serve multiple forms of transportation, adjacent land uses, and the connecting street network. The overall goal of the Lincoln Boulevard project is to provide for a more pedestrian-, bicycle-, and Neighborhood Electric Vehicles (NEV)-friendly environment along the main street through the city. In order to address funding constraints, the improvements will be constructed in phases as described below. Click here for a preliminary schedule for the various construction phases.

Lincoln Blvd. Phase 1 – 7th Street to McBean Park Drive

(Project Completed October 2015)

The project provided improvements to Lincoln Boulevard from 250 feet north of Seventh Street to McBean Park Drive. Improvements included transitions onto the cross streets at 5th Street, 6th Street, and 7th Street. The Project included the following elements:

- Curb returns with bulb-outs to shorten the pedestrian path, enhanced crosswalks, and sidewalks with terra cotta bands.
- Street trees with an irrigation system that includes capacity for expansion for future shrub planting.
- Site furnishings to include bike racks, benches, and trash receptacles.
- Decorative street lights.
- Replacement of damaged and non-conforming sidewalks including ADA compliant pedestrian ramps.
- Class 2 bike/NEV access along the project corridor.

Funding Source: California Department of Transportation –Congestion Mitigation and Air Quality Grant (CMAQ), SR65 Relinquishment, Transportation Development Act (TDA)
Grant Amount: $2,742,019
Local Match: $515,526
Project Cost Estimate: $3,257,545

Lincoln Blvd. Phase 2 – 1st Street to McBean Park Drive

The project will provide improvements to a quarter-mile stretch of Lincoln Boulevard from First Street to McBean Park Drive (this stretch includes four different intersections). Improvements will be the same as those listed in Phase 1 – 7th Street to McBean Park Drive.

Funding Source: California Department of Transportation –Congestion Mitigation and Air Quality Grant (CMAQ), SR65 Relinquishment, Transportation Development Act (TDA)
Grant Amount: $1,019,639
Local Match: $0
Project Cost Estimate: $1,019,639

Lincoln Blvd. Phase 3 – Pedestrian Railroad Crossing Upgrades

This project will provide pedestrian crossing improvements of the railroad tracks to the side streets adjacent to a half mile stretch of Lincoln Boulevard. The side streets include First Street, Third Street, Fifth Street, Sixth Street, and Seventh Street. The total combined project length is approximately 0.6 miles of improved sidewalks and approximately 0.3 miles of NEV/Bike Lanes. The overall goal of this project is to provide for a more pedestrian-, bicycle-, and Neighborhood Electric Vehicles (NEV) -friendly environment along the main street through the city. This will be accomplished by implementing the use of shortened pedestrian crossings (i.e. bulbouts), ADA compliant pedestrian ramps, upgraded pedestrian crossings of the railroad tracks, and bike access along the side streets. NEV lanes will be included along several of the side streets for consistency with the City's NEV Circulation Plan.

Funding Source: California Department of Transportation - Congestion Mitigation and Air Quality Improvement Program (CMAQ)
Amount Requested: $1,469,000
Local Match: $0
Project Cost Estimate: $1,469,000

Lincoln Blvd. Monuments Project - McBean Park Drive, 7th Street

Construction of two monuments at the intersection of McBean Park Drive with Lincoln Boulevard and 7th Street with Lincoln Boulevard consistent with the Lincoln Boulevard Master Plan. Intersection Improvements include marquee sign, seatwall, benches, guardrails, and ornamental fencing.

Funding Source: Redevelopment Agency
Project Cost Estimate: $919,593

Lincoln Blvd. HSIP – Signal Modification and Upgrades

The project consists of lighting and equipment upgrades to five traffic signals and systemic traffic signal timing improvements to a total of 11 traffic signals along Lincoln Boulevard from Sterling Parkway to 7th St. including the addition of Class II NEV/Bike lanes from Sterling Parkway to 1st St.

Funding Source: California Department of Transportation – Highway Safety Improvement Program (HSIP)
Grant Amount (Preliminary Engineering): $900,000
Local Match: $180,000
Project Cost Estimate (Preliminary Engineering): $1,080,000

Lincoln Blvd. - Ferrari Ranch Road to 1st Street and Auburn Ravine Bridge

The project consists of expanding to a three-lane road with landscaped median, including NEV lanes and wider sidewalks. Grant application is currently being prepared for submittal to Caltrans.

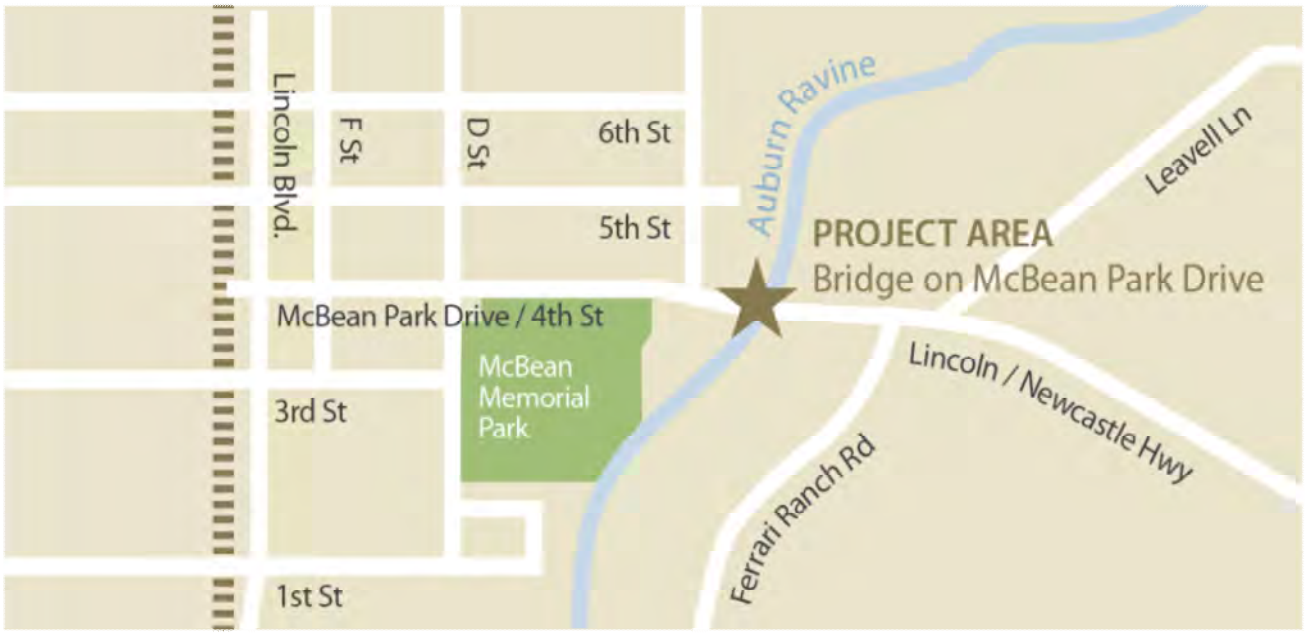
Funding Source: California Department of Transportation – Highway Bridge Replacement Program
Grant Amount: $6,737,133
Local Match: $872,867
Project Cost Estimate: $7,610,000

McBean Park Drive Bridge Replacement

The City of Lincoln will be replacing the bridge and improving the roadway approaches on McBean Park Drive at the Auburn Ravine. Currently, the roadway and bridge are overtopped in the 10 year and 50 year flooding events respectively. This project will increase flood protection and limit impacts to nearby properties by raising the roadway profile and increasing the length of the bridge. This will include adherence to the Central Valley Flood Protection Board requirements.

In addition to flood protection, the new bridge will be widened to accommodate future traffic needs. The existing two lane bridge will be replaced with a three lane bridge, which will include wide shoulders (to serve as NEV/Bicycle lanes), a parallel Class I pathway connected to the bridge for golf carts, and sidewalks for pedestrians.

Since this bridge functions as a gateway to downtown Lincoln, it will receive special aesthetic treatment to denote the entrance into the downtown area.



Project Updates

On June 21, 2016 the City hosted an informational community open house for the McBean Park Drive Bridge Replacement Project. A brief presentation outlined the preliminary design, funding, schedule,

and construction impacts of the project. Attendees were able to vote for their favorite of three aesthetic design concepts. City staff and the project team were on hand to answer questions and discuss ideas.

McBean Bridge FAQs

McBean Bridge Open House Presentation

McBean Community Open House Summary

Following the open house, members of the community were invited to vote for their favorite of the three design concepts on the city website. Voting is complete and the results are in.

The winning design concept is... (pdf)

BICYCLE TRANSPORTATION PLAN UPDATE

City of Lincoln, California

APPENDIX F: Top 10 Cost Estimates

STREET	FROM	TO	Width (ft.)	Median (x)	# of Lanes	Center Turn Lane / Median (C, M)	Parking (x)	Existing Bikeways (x)	City of Lincoln Bicycle Transportation Plan (2012)	R/W Width	C/C Width	# of Lanes	Median (x)	Bike Lane (x)	Comments	Bike Path	Bike Lanes	Bike Route	Buffered Bike Lanes	Two-way Protected Bike Lanes	Length of Proposed Bikeways (mi.)	Bikeway Intersection Crossing Improv. (each)	Under-Crossing Bike Path Moore	Under-Crossing Bike Path E. Joiner	Construction Cost	25% Contingency & 25% Design Cost	20-Year Operations & Maintenance Cost (10% of Total)	Total Project Cost
																$ 1,392,763	$ 25,838	$ 2,500	$ 78,638	$ 178,594		$ 20,000	$ 1,498,150	$ 1,908,770				
NORTH-SOUTH STREETS																												
East Avenue	**9th Street**	**McBean Park Drive**																										
East Avenue	9th Street	6th Street							Class I					x	New Class I Bikeway					x	0.27				$ 48,220.27	$ 24,110.14	$ 2,411.01	$ 74,741.42
East Avenue	9th Street	6th Street							Class II					x	Class II		x				0.27				$ 13,952.30	$ 6,976.15	$ 697.62	$ 21,626.07
East Avenue	6th Street	McBean Park Drive						x	Class I					x	Add marked crossings at side streets for continuous Class I connectivity							5			$ 100,000.00	$ 50,000.00	$ 5,000.00	$ 155,000.00
E. Joiner Parkway	**Twelve Bridges Dr.**	**Ranch View Drive**																										
E. Joiner Parkway	Twelve Bridges Drive	Ranch View Drive			2			x	Road widening currently in CIP including Class II lanes; updated to include buffered Class IV-Lite					x	Class IV-Lite. Ensure safe access to Twelve Bridges Middle School. (SRTS)				x		1.06				$ 166,711.71	$ 83,355.86	$ 8,335.59	$ 258,403.15
Lincoln Boulevard	**1st Street**	**7th Street**																										
Lincoln Boulevard	1st Street	7th Street					x								Class II/Class III markings		x				0.55				$ 28,421.36	$ 14,210.68	$ 1,421.07	$ 44,053.11
At the Intersection of	Lincoln Boulevard	1st Street													Bicycle Protection at Intersections							1			$ 20,000.00	$ 10,000.00	$ 1,000.00	$ 31,000.00
At the Intersection of	Lincoln Boulevard	2nd Street																				1			$ 20,000.00	$ 10,000.00	$ 1,000.00	$ 31,000.00
At the Intersection of	Lincoln Boulevard	3rd Street																				1			$ 20,000.00	$ 10,000.00	$ 1,000.00	$ 31,000.00
At the Intersection of	Lincoln Boulevard	McBean Park Drive																				1			$ 20,000.00	$ 10,000.00	$ 1,000.00	$ 31,000.00
At the Intersection of	Lincoln Boulevard	5th Street																				1			$ 20,000.00	$ 10,000.00	$ 1,000.00	$ 31,000.00
At the Intersection of	Lincoln Boulevard	6th Street																				1			$ 20,000.00	$ 10,000.00	$ 1,000.00	$ 31,000.00
At the Intersection of	Lincoln Boulevard	7th Street																				1			$ 20,000.00	$ 10,000.00	$ 1,000.00	$ 31,000.00
Lincoln Boulevard																												
At the Intersection of	Lincoln Boulevard	Ferrari Ranch Road													Bicycle Protection at Intersection. Add bike pocket at NB/SB approaches; Extend bike pocket markings at WB approach; Add shared/marked right-turn and bike pocket at EB approach; Add left turn bike pockets at all approaches							1			$ 20,000.00	$ 10,000.00	$ 2,000.00	$ 32,000.00
Joiner Parkway	**Nicolaus Road/9th Street**	**Groveland Lane**																										
At the Intersection of	Joiner Parkway	Nicolaus Road/9th Street																				1			$ 20,000.00	$ 10,000.00	$ 2,000.00	$ 32,000.00
At the Intersection of	Joiner Parkway	5th Street													Bicycle Protection at Intersections. All right-turn pockets > 150' threshold; extend bike pocket markings.							1			$ 20,000.00	$ 10,000.00	$ 2,000.00	$ 32,000.00
At the Intersection of	Joiner Parkway	3rd Street																				1			$ 20,000.00	$ 10,000.00	$ 2,000.00	$ 32,000.00
At the Intersection of	Joiner Parkway	1st Street																				1			$ 20,000.00	$ 10,000.00	$ 2,000.00	$ 32,000.00
At the Intersection of	Joiner Parkway	Moore Road																				1			$ 20,000.00	$ 10,000.00	$ 2,000.00	$ 32,000.00
At the Intersection of	Joiner Parkway	N. Downing Circle																				1			$ 20,000.00	$ 10,000.00	$ 2,000.00	$ 32,000.00
At the Intersection of	Joiner Parkway	S. Downing Circle																				1			$ 20,000.00	$ 10,000.00	$ 2,000.00	$ 32,000.00
At the Intersection of	Joiner Parkway	Groveland Lane																				1			$ 20,000.00	$ 10,000.00	$ 2,000.00	$ 32,000.00
At the Intersection of	Joiner Parkway	Ferrari Ranch Road																				1			$ 20,000.00	$ 10,000.00	$ 2,000.00	$ 32,000.00
Under Crossing at E. Joiner Parkway																												
Crossing at	E. Joiner Parkway	West of Lincoln Blvd						x	Class I					x	Connect Existing Class I paths under E. Joiner Pkwy						0.1			x	$ 209,814.99	$ 104,907.49	$ 20,981.50	$ 335,703.98
WEST-EAST STREETS																												
5th Street	**Joiner Parkway**	**East Avenue**																										
5th Street	Joiner Parkway	East Avenue												x	Class II		x				1.56				$ 80,613.31	$ 40,306.66	$ 8,061.33	$ 128,981.30
5th Street	I Street	D Street					x								Class III			x			0.34				$ 850.00	$ 425.00	$ 85.00	$ 1,360.00
1st Street	**Douglas Drive**	**Joiner Parkway**																										
1st Street	Douglas Drive	Joiner Parkway							Class II					x	Ensure safe mix pick-up/drop-off and bicycle activity				x		0.42				$ 66,055.58	$ 33,027.79	$ 6,605.56	$ 105,688.93
1st Street	**Joiner Parkway**	**R Street**																										
1st Street	Joiner Parkway	R Street					x	x							Restripe Class II bike lanes		x				0.31				$ 16,019.31	$ 8,009.66	$ 1,601.93	$ 25,630.90
SR-65 Crossing																												
Moore Road	West of SR-65	East of SR-65						x	Class I					x	Under-Crossing						0.2		x		$ 359,629.97	$ 179,814.99	$ 35,963.00	$ 575,407.96

BICYCLE TRANSPORTATION PLAN UPDATE

City of Lincoln, California

APPENDIX G: Top 10 Ridership Estimates

PROJECT	BASE			FUTURE (20 Year)		
	Total New Recreation Cyclists	Total New Commuters	Total New Cyclists	Total New Recreation Cyclists	Total New Commuters	Total New Cyclists
B-001	417	90	507	634	138	772
B-011	157	34	191	321	70	391
B-015	128	43	171	208	69	277
B-016	137	46	183	209	70	279
B-020	77	26	103	103	35	138
B-022	190	64	254	278	93	371
B-028	164	36	200	252	55	307
I-013	112	47	159	145	60	205
I-015	104	43	147	140	58	198
I-017	162	68	230	271	112	383

Note: Class I improvements yield High estimates; Class II and Class IV-Lite improvements yield Moderate estimates; Intersection improvements yield Low estimates

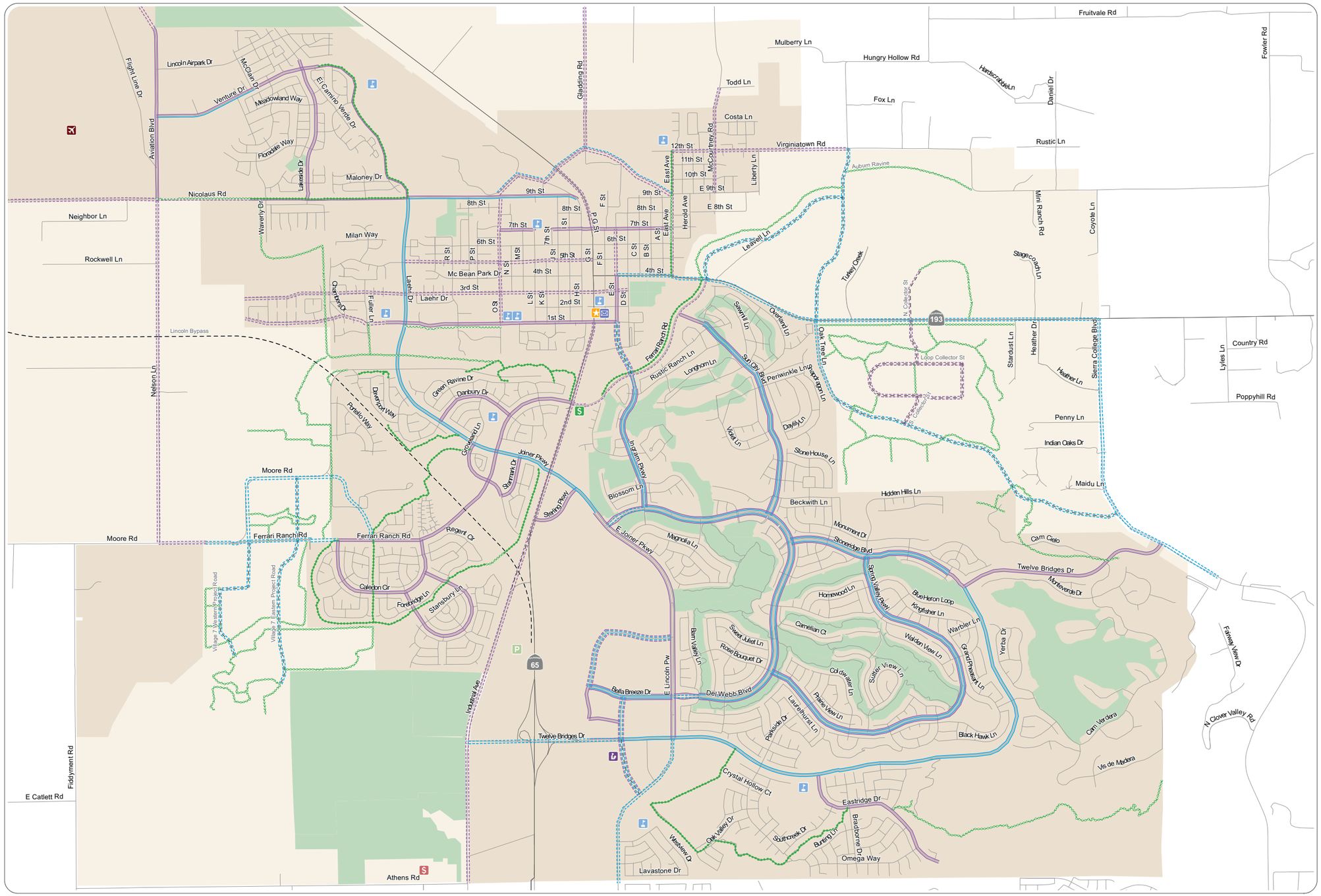
PROJECT	BASE - Daily New Cyclists							FUTURE (2035) - Daily New Cyclists						
	Total New Cyclists, High	Total New Cyclists, Moderate	Total New Cyclists, Low	Total New Commuters, 2400m	Total New Recreation Cyclists, High	Total New Recreation Cyclists, Moderate	Total New Recreation Cyclists, Low	Total New Cyclists, High	Total New Cyclists, Moderate	Total New Cyclists, Low	Total New Commuters, 2400m	Total New Recreation Cyclists, High	Total New Recreation Cyclists, Moderate	Total New Recreation Cyclists, Low
B-001	507	362	308	90	417	272	218	772	551	469	138	634	413	331
B-011	191	136	116	34	157	102	82	391	279	237	70	321	209	167
B-015	240	171	146	43	197	128	103	389	277	236	69	320	208	167
B-016	257	183	156	46	211	137	110	391	279	237	70	321	209	167
B-020	144	103	88	26	118	77	62	194	138	118	35	159	103	83
B-022	356	254	216	64	292	190	152	520	371	316	93	427	278	223
B-028	200	143	122	36	164	107	86	307	219	186	55	252	164	131
I-013	263	187	159	47	216	140	112	337	240	205	60	277	180	145
I-015	242	173	147	43	199	130	104	326	233	198	58	268	175	140
I-017	379	271	230	68	311	203	162	630	449	383	112	518	337	271

	BASE							FUTURE						
		Mobility			Rec				Mobility			Rec		
PROJECT	Annual Mobility Benefit, Off-Street Trail	Annual Health Benefit, High	Annual Health Benefit, Moderate	Annual Health Benefit, Low	Annual Recreation Benefit, High	Annual Recreation Benefit, Moderate	Annual Recreation Benefit, Low	Annual Decreased Auto Use Benefit	Annual Mobility Benefit, Off-Street Trail	Annual Health Benefit, High	Annual Health Benefit, Moderate	Annual Health Benefit, Low	Annual Recreation Benefit, High	Annual Recreation Benefit, Moderate	Annual Recreation Benefit, Low	Annual Decreased Auto Use Benefit
B-001	$ 196,122	$ 64,896	$ 46,336	$ 39,424	$ 1,522,050	$ 992,800	$ 795,700	$ 24,839	$ 300,720	$ 98,816	$ 70,528	$ 60,032	$ 2,314,100	$ 1,507,450	$ 1,208,150	$ 24,839
B-011	$ 74,090	$ 24,448	$ 17,408	$ 14,848	$ 573,050	$ 372,300	$ 299,300	$ 9,383	$ 152,539	$ 50,048	$ 35,712	$ 30,336	$ 1,171,650	$ 762,850	$ 609,550	$ 9,383
B-015	$ 93,703	$ 30,720	$ 21,888	$ 18,688	$ 719,050	$ 467,200	$ 375,950	$ 11,867	$ 150,360	$ 49,792	$ 35,456	$ 30,208	$ 1,168,000	$ 759,200	$ 609,550	$ 11,867
B-016	$ 100,240	$ 32,896	$ 23,424	$ 19,968	$ 770,150	$ 500,050	$ 401,500	$ 12,695	$ 152,539	$ 50,048	$ 35,712	$ 30,336	$ 1,171,650	$ 762,850	$ 609,550	$ 12,695
B-020	$ 56,657	$ 18,432	$ 13,184	$ 11,264	$ 430,700	$ 281,050	$ 226,300	$ 7,176	$ 76,270	$ 24,832	$ 17,664	$ 15,104	$ 580,350	$ 375,950	$ 302,950	$ 7,176
B-022	$ 139,464	$ 45,568	$ 32,512	$ 27,648	$ 1,065,800	$ 693,500	$ 554,800	$ 17,663	$ 202,659	$ 66,560	$ 47,488	$ 40,448	$ 1,558,550	$ 1,014,700	$ 813,950	$ 17,663
B-028	$ 78,449	$ 25,600	$ 18,304	$ 15,616	$ 598,600	$ 390,550	$ 313,900	$ 9,935	$ 119,852	$ 39,296	$ 28,032	$ 23,808	$ 919,800	$ 598,600	$ 478,150	$ 9,935
I-013	$ 102,419	$ 33,664	$ 23,936	$ 20,352	$ 788,400	$ 511,000	$ 408,800	$ 12,971	$ 130,748	$ 43,136	$ 30,720	$ 26,240	$ 1,011,050	$ 657,000	$ 529,250	$ 12,971
I-015	$ 93,703	$ 30,976	$ 22,144	$ 18,816	$ 726,350	$ 474,500	$ 379,600	$ 11,867	$ 126,390	$ 41,728	$ 29,824	$ 25,344	$ 978,200	$ 638,750	$ 511,000	$ 11,867
I-017	$ 148,181	$ 48,512	$ 34,688	$ 29,440	$ 1,135,150	$ 740,950	$ 591,300	$ 18,767	$ 244,063	$ 80,640	$ 57,472	$ 49,024	$ 1,890,700	$ 1,230,050	$ 989,150	$ 18,767

BICYCLE TRANSPORTATION PLAN UPDATE

City of Lincoln, California

APPENDIX H: 2012 BTP CIP Projects



LEGEND

- School
- Library Public Library
- Park-n-Ride
- Thunder Valley
- Downtown Core
- Lincoln Air Center
- Lincoln Hills Town Center
- Post Office
- PlannedRoads

Bicycle Facilities

- Dirt Path
- Class 1 Path
- Class 2 Lane
- Class 2 / Golf Cart Lane (Shared)
- Class 2 / Golf Cart Lane (Separated)

Future Bike Facilities

- Class 1 Path
- Class 2 Lane
- Class 2 / Golf Cart Lane (Shared)
- Lincoln City Limits
- Lincoln Sphere of Influence
- RegionalParksOpenSpace

Not to Scale

Note: Golf carts are allowed only in the Del Web development.

FEHR PEERS

Path: \\Fpse03\fpse2\Data2\2012\Projects\RS_Projects\RS12_2999\Graphics\GIS\MXD\fig04_planned_bikeways_V10.mxd

CITY OF LINCOLN BICYCLE TRANSPORTATION PLAN
EXISTING AND PLANNED BICYCLE FACILITIES
FIGURE 4