



Walk & Wheel Report



Prepared by

FEHR & PEERS

621 17th Street, #2301
Denver, CO 80293

January 2015



CONTENTS

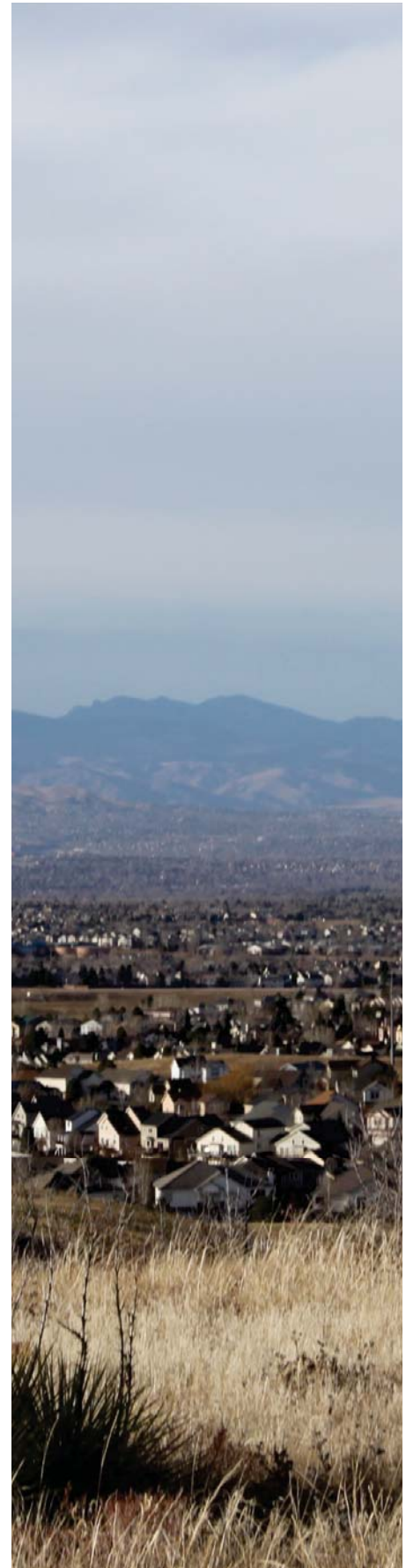
- Vision 1
- Proposed Network 2
 - Citywide Network 3
 - Major Corridors 10
 - RidgeGate East. 24
 - Other Projects 36
- Goals and Policies 38
- Implementation 40
 - Cost Estimates 41
 - Prioritization 42

APPENDICES

- Appendix A Existing Conditions Report
- Appendix B Issues and Opportunities Memorandum
- Appendix C Survey Data
- Appendix D Cost Estimates
- Appendix E Project Scoring Sheet

LIST OF FIGURES

Figure 1	Existing and Proposed Shared Use Paths and Trails	4
Figure 2	Existing and Proposed Bicycle Facilities	7
Figure 3	Bikeability Gap and Barrier Analysis	9
Figure 4	Park Meadows Drive Proposed Cross Sections	12
Figure 5	Yosemite Street Proposed Cross Sections	15
Figure 6	Lincoln Avenue Proposed Cross Sections	18
Figure 7	RidgeGate Parkway Proposed Cross Sections	21
Figure 8	RidgeGate Parkway One lane Roundabout Conceptual Design	23
Figure 9	RidgeGate East Roadway Design Standards - Parkway	27
Figure 10	RidgeGate East Roadway Design Standards - Boulevard	28
Figure 11	RidgeGate East Roadway Design Standards - Avenue	29
Figure 12	RidgeGate East Roadway Design Standards - Street	30
Figure 13	RidgeGate East Existing Corridors	33
Figure 14	Lincoln Avenue East Proposed Cross Section	34
Figure 15	RidgeGate Parkway East Proposed Cross Section	35
Figure 16	Peoria Street Proposed Cross Section	35
Figure 17	Proposed Off-Street Projects	43
Figure 18	Proposed On-Street Projects	44
Figure 19	Proposed Enhanced Pedestrian Crossings	45



EXECUTIVE SUMMARY

The Lone Tree Walk & Wheel Plan sets forth a [Vision](#) (page 1) and [Goals and Policies](#) (page 38) for walking and bicycling in Lone Tree:

A complete, connected and comprehensive network of trails, bikeways and walkways that provides safe, comfortable and convenient connections to everyday destinations such as workplaces, schools, stores and parks for people of any age or ability. The network will allow walking and biking to be viable modes of transportation, be attractive forms of recreation, promote a sustainable natural environment, promote public health and contribute to a high quality of life for area residents.

The Plan serves as a guide for elected officials, City staff and Lone Tree residents to implement infrastructure necessary to achieve the Plan's vision. As a guide, the Plan includes several elements.

The Walk & Wheel [Proposed Network](#) (page 2) identifies the locations of proposed shared use paths, cycle tracks, bike lanes, unpaved trails, and grade separations. These facilities provide access to destinations throughout the City and connectivity to recreational assets. Key outcomes of the proposed Walk & Wheel Network include a continuous shared use path network between the Centennial (C-470) Trail and RidgeGate, cycle tracks or bike lanes on Lone Tree arterial and parkway streets, and grade separated crossings of busy roadways such as Yosemite Street, Lincoln Avenue and I-25.

Implementation of the proposed Walk & Wheel Network will require retrofitting several of Lone Tree's [Major Corridors](#) (page 10): Park Meadows Drive, Yosemite Street, Lincoln Avenue and RidgeGate Parkway. This Plan includes proposed cross sections for each of these streets in the area west of I-25. These retrofits aim to improve conditions for pedestrians and bicyclists of all ages and abilities. As much as possible the cross sections were developed to minimize cost.

As [RidgeGate East](#) (page 24) builds out, a new set of roadway design guidelines will ensure that roadways built in this planned development contribute to a complete, connected and comprehensive network of trails, bikeways and walkways without a need for future retrofit.

The Plan also identifies several [Other Projects](#) (page 36), including improvements to uncontrolled crosswalks, traffic signal modifications, and future planning efforts necessary to implement the Walk & Wheel Plan's vision.

Finally, the Plan includes a [Prioritization](#) (page 42) of proposed projects with cost estimates.





VISION

The Lone Tree Walk & Wheel Plan is guided by the following vision

A complete, connected and comprehensive network of trails, bikeways and walkways that provides safe, comfortable and convenient connections to everyday destinations such as a workplaces, schools, stores and parks for people of any age or ability. The network will allow walking and biking to be viable modes of transportation, be attractive forms of recreation, promote a sustainable natural environment, promote public health and contribute to a high quality of life for area residents.



PROPOSED NETWORK

The proposed Walk & Wheel Network is designed to fulfill the vision for walking and bicycling in Lone Tree. The network includes earthen trails, paved shared-use paths, on-street bike lanes and cycletracks, pedestrian- and bicycle-only bridges and crosswalk improvements. These facilities provide access to destinations throughout the City and connectivity to recreational assets.



CITYWIDE NETWORK

Lone Tree has several existing shared-use paths, bike lanes and unpaved trails that comprise the City's bikeway system. Two regional trails provide east-west connectivity: the Centennial (C-470) Trail and the East/West Trail. Two regional trails provide north-south connectivity: the Willow Creek Trail and the Wildcat Trail. Four streets in Lone Tree have dedicated bike lanes. However, many of these existing facilities lack connectivity to other bikeways in the system or do not provide connections to key destinations. Refer to the Existing Conditions Report ([Appendix A](#)) for further detail on the existing bikeway network.

Proposed Shared Use Path and Trail Network

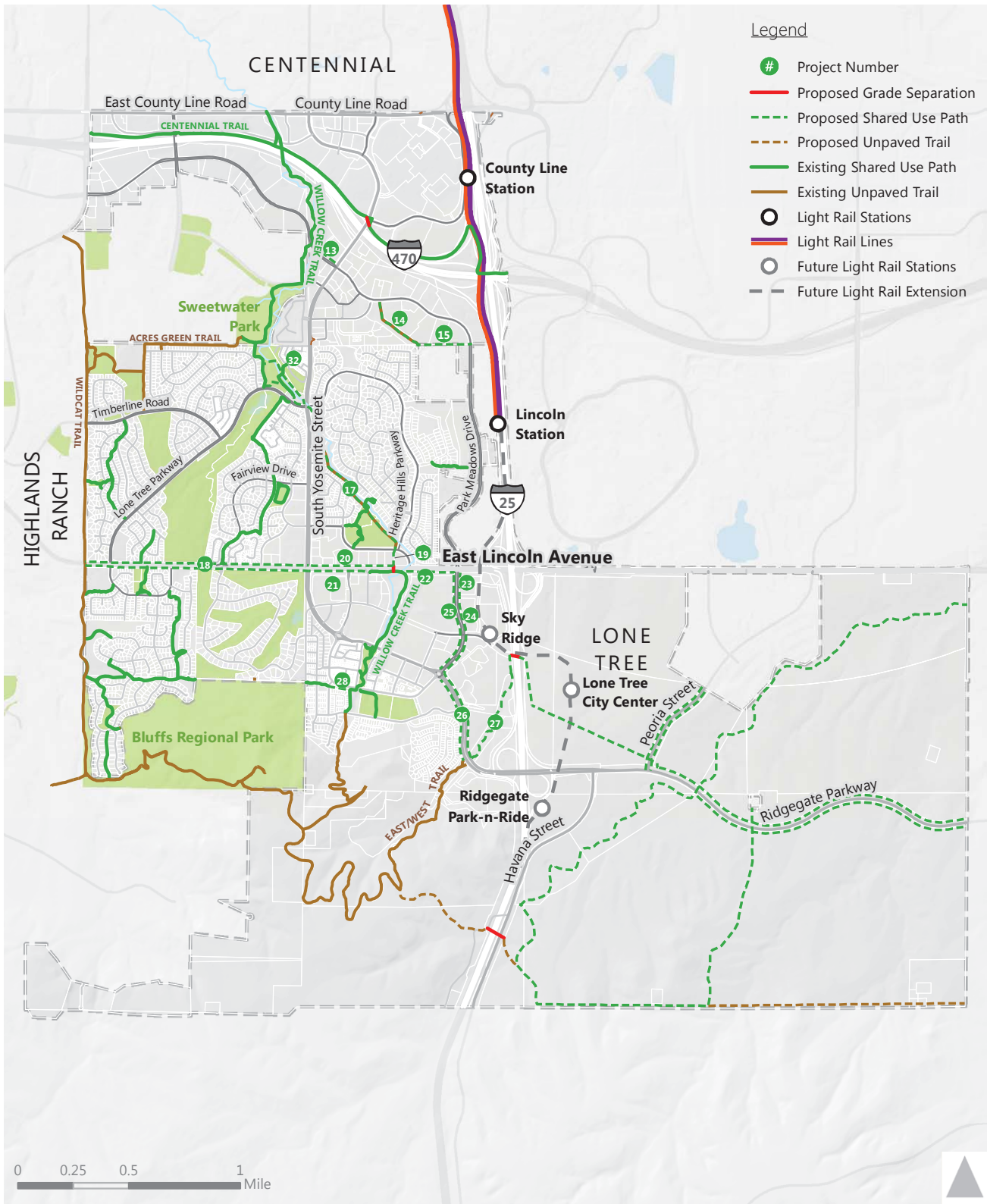
Figure 1 shows proposed projects to expand the shared-use path and earthen trail network in Lone Tree. The proposed shared-use path and trail network is designed to build upon existing shared-use paths and trails, to connect to more of Lone Tree's neighborhoods, to provide access to key destinations and to connect to recreational assets. A shared use path is a paved facility that has a consistent width of ten feet and is accompanied by pavement markings and signs. The shared-use path and earthen trail network described above is intended to accommodate the "Interested but Concerned" bicyclist types including children, families and less-confident bicyclists. Proposed projects include: upgrading select earthen trails to shared-use paths, filling missing links between existing shared-use paths and constructing new facilities, particularly in RidgeGate East.

Upgrading Earthen Trails and Filling Missing Links

The following proposed projects upgrade existing earthen trails or fill key gaps in the existing network. These projects will complete the shared-use path and earthen trails network by connecting the network to more of Lone Tree's neighborhoods, accessing key destinations and connecting to recreational assets. Proposed projects include:

- Upgrade the Willow Creek Trail between Heritage Hills Circle and Yosemite Street from an earthen trail a shared-use path. Additionally, extend the trail to the north to Sweetwater Park from its existing terminus at Yosemite Street. These projects will provide a seamless north-south route for pedestrians and bicyclists between RidgeGate East and the Centennial (C-470) Trail. (Project 17 in [Figure 1](#)).
- Within Sweetwater Park, provide two east-west shared-use paths between the existing north-south shared-use paths to connect to the Willow Creek Trail and the unnamed north-

Figure 1. Existing and Proposed Shared Use Paths and Trails



Existing and Proposed Shared-Use Paths and Trails
Lone Tree Walk & Wheel

south shared-use path from the Lone Tree Golf Club. (Project 32 in [Figure 1](#)).

- Upgrade the existing earthen trail that runs along a utility easement in the northern portion of Heritage Hills to connect the residential neighborhood to retail and civic uses along Park Meadows Boulevard and to Lincoln Station. (Project 14 in [Figure 1](#)).
- In RidgeGate West, complete the shared-use path between Hillston Street and the Willow Creek Trail to provide a continuous path from Bluffs Regional Park to the Willow Creek Trail. (Project 28 in [Figure 1](#)).
- Provide a shared-use path on the north side of Park Meadows Drive between the Park Meadows Drive/Yosemite Street intersection and the Willow Creek Trail to facilitate a connection to the Centennial (C-470) Trail without crossing the C-470/Yosemite Street interchange. Project 13 in [Figure 1](#)).

New Shared Use Paths or Earthen Trails

Constructing strategic new shared-use paths and earthen trails will improve connectivity to other neighborhoods, destinations and recreational assets. Proposed projects include:

- Upgrade existing sidewalks on both sides of Lincoln Avenue from the western City limits to the proposed Willow Creek Trail to a 10 foot wide shared-use path. Continue the shared-use path on the south side of Lincoln Avenue to Park Meadows Boulevard to provide a more comfortable and direct east-west connection through the City. (Projects: 18, 20, 21, and 22 [Figure 1](#)).
- Construct shared-use paths on both sides of Park Meadows Boulevard south of Lincoln Avenue to RidgeGate Parkway. Projects: 23, 24, and 25 [Figure 1](#)).
- Provide shared-use paths on both sides of RidgeGate Parkway between Park Meadows Boulevard and the connection to the East/West Trail just west of I-25. (Project 26 in [Figure 1](#)).
- Extend the East/West Trail to the north across RidgeGate Parkway to connect to the Sky

Ridge Medical Center and proposed I-25 overpass. (Project 27 in [Figure 1](#)).

Proposals for a shared-use path and earthen trail system in RidgeGate East were developed by connecting open space identified in the RidgeGate Fourth Amendment Planned Development District (PDD) with consideration of existing and planned facilities in traditional Lone Tree, RidgeGate East and RidgeGate West. Where possible, shared-use paths and earthen trails were routed along existing utility easements or waterways.

Grade Separations

Lone Tree is bisected by I-25 causing a significant barrier to pedestrian and bicyclist travel between the existing western and future eastern portions of the City. In addition, C-470 runs east-west through the northern portion of the City and busy arterials like Lincoln Avenue create barriers to north-south pedestrian and bicyclist connectivity.

Grade-separated crossings, such as bridges or underpasses, accommodate pedestrian or bicyclist crossings at locations where at-grade crossings are not possible (such as I-25), where at-grade crossings will significantly interrupt flow or where at-grade crossings will not achieve an acceptable level of user comfort. Existing pedestrian- and bicyclist-only grade separations in Lone Tree include the I-25 bridges at County Line Station and Lincoln Station.

Several requests to improve comfort and safety for pedestrians and bicyclists submitted through public comment for this project can be addressed by providing additional grade separations. Specific comments are summarized in the Issues and Opportunities Memo ([Appendix D](#)). Recommendations for additional grade-separated crossings are depicted in [Figure 1](#) and include:

- Construct a bridge at the C-470/Yosemite Street interchange to improve access to and along the Centennial (C-470) Trail and improve pedestrian and bicyclist safety at the C-470/Yosemite Street interchange. (Project 33 in [Figure 19](#)).
- Construct a bridge for the Willow Creek Trail at Lincoln Avenue to provide a comfortable crossing and to facilitate north-south pedestrian and bicycle travel. Two collisions



between automobiles and bicyclists occurred at this location within the past five years. (Project 34 in [Figure 19](#)).

- Construct a grade separation at I-25 between Sky Ridge Medical Center and RidgeGate East to facilitate pedestrian and bicyclist travel between RidgeGate East and RidgeGate West. Further feasibility study is necessary to identify whether a bridge or undercrossing is more feasible. (Project 40 in [Figure 19](#)).
- Construct a grade separation at I-25 and East West Trail extension. (Project 44 in [Figure 19](#)).

Proposed grade separations were identified to address significant barriers in the City, such as Lincoln Avenue and I-25, or by anticipating future pedestrian and bicyclist needs as RidgeGate East develops. These proposed grade separations will provide safe crossings off the three most significant barriers to walking and bicycling in the City: I-25, C-470 and Lincoln Avenue.

Proposed Bike Lane and Cycletrack Network

The shared-use path and earthen trail network described above is intended to accommodate pedestrians and “Interested but Concerned” bicyclists. Public input revealed a desire for shared-use paths and trails as well as more on-street bicycle facilities in Lone Tree to accommodate the “Enthusiastic and Confident” bicyclists.

At present, streets with marked bike lanes include: Timberline Road, Ptarmigan Trail, Fairview Drive and Lone Tree Parkway from Lincoln Avenue to Yosemite Street. These roadways are located in residential neighborhoods. Timberline Road and Lone Tree Parkway are two lane collectors with raised medians and Ptarmigan Trail and Fairview Drive are local roads.

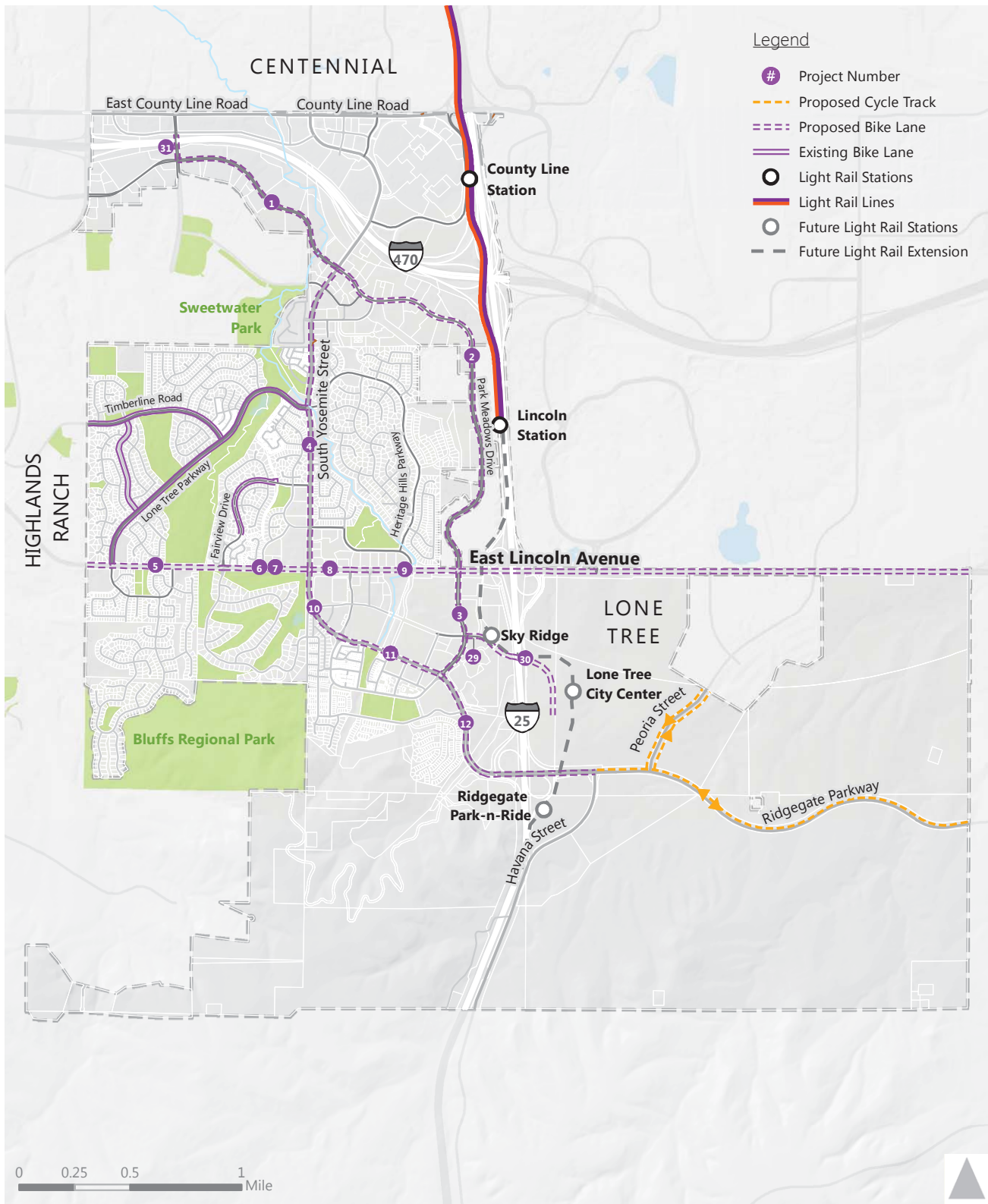
All of the existing on-street bike lanes in Lone Tree are concentrated in the northwest quadrant of the City west of Yosemite Street and north of Lincoln Avenue. The following facilities are proposed to augment the existing on-street bike lanes in Lone Tree to provide more direct travel routes for confident bicyclists who are comfortable sharing the roadway with vehicles. Bike lanes are defined

portions of the roadway that are designated by striping, signage and pavement markings for the preferential or exclusive use of bicyclists. Whereas bike lanes are a defined portion of the roadway, cycletracks are physically separated from motor traffic and distinct from the sidewalk. Cycletracks can be either one-way or two-way.

Proposed on-street bike lanes include:

- Yosemite Street between Park Meadows Drive and Lincoln Avenue to facilitate direct north-south connectivity. (Project 4 in [Figure 2](#)).
- Park Meadows Drive between Acres Green Drive and Yosemite Street to provide parallel north-south connectivity to Yosemite Street and to access destinations on Park Meadows Drive, including Lincoln Station. (Project 1 in [Figure 2](#)).
- Park Meadows Drive from Yosemite Street to Lincoln Avenue (Project 2 in [Figure 2](#)) and Park Meadows Boulevard from Yosemite Street to RidgeGate Parkway (Project 3 in [Figure 2](#)).
- Acres Green Drive between Park Meadows Drive and the Centennial Trail to provide trail access. (Project 31 in [Figure 2](#)).
- Lincoln Avenue between the western and eastern City limits to provide direct east-west bicycle connectivity for commuters to the Sky Ridge Medical Center, Charles Schwab or other employment centers or retail destinations. (Projects: 5, 6, 7, 8 and 9 in [Figure 2](#)).
- RidgeGate Parkway between Lincoln Avenue and I-25 to provide east-west connectivity and access to destinations within RidgeGate West. (Projects: 10, 11 and 12 in [Figure 2](#)).
- Sky Ridge Avenue from Park Meadows Boulevard to RidgeGate East to connect Sky Ridge Medical Center and surrounding neighborhoods to the future Sky Ridge and Lone Tree City Center Stations and to RidgeGate East via a planned grade separation. The design process for Sky Ridge Station should ensure bicycle (and pedestrian) connections to and from Park Meadows Boulevard and Sky Ridge Avenue. (Projects: 29

Figure 2. Existing and Proposed Bicycle Facilities



Existing and Proposed Bicycle Facilities
Lone Tree Walk & Wheel

and 30 in [Figure 2](#)).

It is important to maintain on-street bicycle lanes with regular street sweeping to ensure debris is cleared from the roadway.

Proposed cycletracks are represented in orange in [Figure 2](#) and include:

- RidgeGate Parkway (two-way cycletrack) east of I-25 to provide a connection between traditional Lone Tree and RidgeGate West to civic, retail and cultural destinations within RidgeGate East.
- Peoria Street (one-way cycletrack) from RidgeGate Parkway to the northern City limits.
- Future boulevards, parkways and arterials (one-way cycletracks).

[Figure 2](#) shows proposed bike lanes and cycletracks.

Gap and Barrier Analysis

The Existing Conditions Report, [Appendix A](#), contains a gap and barrier analyses for biking and walking in Lone Tree. The analyses identified locations that presented significant problems or challenges to the development of a well-connected pedestrian and bicycle system.

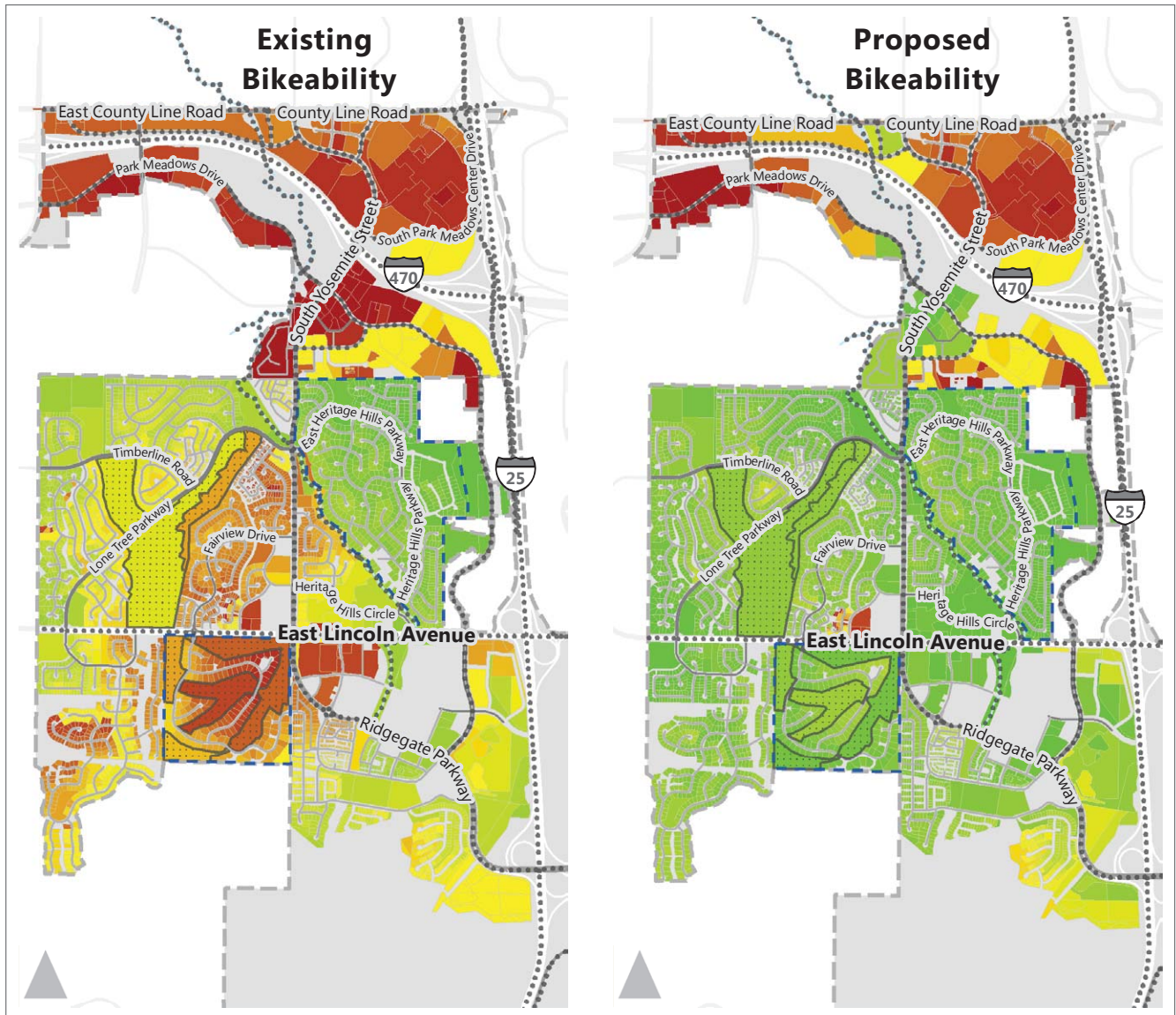
Taking the proposed Bicycle Facility network in [Figure 2](#) into account, a second gap and barrier analysis was performed. The bikeability analysis had by far the most marked improvement in connectivity. While the walkability analysis had some improvement, the existing network already contains a robust network of sidewalks. For this reason, only the bikeability analysis is presented.

The bikeability gap and barrier analysis shows the distance most people would bike within 15 minutes. The bikeability analysis was limited to roadways with a Level of Traffic Stress score of 1 or 2 to account for the majority of the population which would avoid high-stress bikeways. Most of Lone Tree's proposed on-street bike lanes do not qualify as low-stress because of their large number of travel lanes or roadway speed.

This analysis results in a bikeability score that demonstrates neighborhoods and areas that have high, medium, or low connectivity. The resulting map shown in [Figure 3](#) compares the existing bikeability analysis to the proposed bikeability analysis. The proposed bikeability analysis shows improvements due to the addition of low-stress facilities, in the form of shared use paths on the major corridors in the City.

The commercial properties in the northern area of the city are still shown as having low connectivity because of limited access to bike-friendly routes and the C-470 barrier. The bikeability scores for the residential areas north and south of Lincoln Avenue, west of Yosemite Street have greatly increased. A major source of improvement was that low-stress facilities, in the form of shared-use paths, were added to all the major corridors in the City, such as Lincoln Avenue. Since major corridors connect activity centers, adding low-stress facilities greatly improved access.

Figure 3. Bikeability Gap and Barrier Analysis



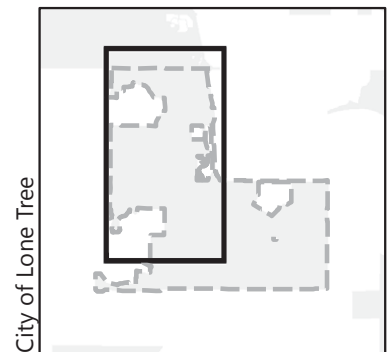
0 0.25 0.5 1 Mile

Legend

Bikeability Score

- Very Low
- Low
- Medium
- High
- Very High

- Linear Barriers
- Area Barriers
- Gated Community
- Vacant Land or Right-of-Way



Gap and Barrier Analysis
Lone Tree Walk & Wheel



MAJOR CORRIDORS

Lone Tree has four major corridors. These include: Park Meadows Drive, Yosemite Street, Lincoln Avenue and RidgeGate Parkway. This section focuses on retrofits for the existing portions of Lone Tree north and south of Lincoln Avenue and West of I-25. Major corridors east of I-25 will be discussed in the next section: RidgeGate East (page 24).

Park Meadows Drive

Existing Conditions

Carrying up to 15,000 vehicles per day in some segments, Park Meadows Drive is an arterial that facilitates north-south and east-west movement within the city. Park Meadows Drive runs parallel to I-25 until just south of the I-25/C-470 interchange when it veers westward south of C-470. Traffic volumes range from just 950 vehicles per day at Acres Green Drive to 10,000 vehicles per day north of Sky Ridge Avenue, to approximately 15,000 vehicles per day at Yosemite Street.

Park Meadows Drive north of Lincoln Avenue contains the most constrained right-of-way for an arterial in the City, ranging from 69 to 94 feet. Between Lincoln Avenue and RidgeGate Parkway, the roadway becomes Park Meadows Boulevard and contains four travel lanes that are 12 to 14 feet wide; two northbound and two southbound. Sidewalks are primarily detached in this segment and no more than six feet wide. The landscaping buffer between the sidewalk and roadway does provide a slightly more comfortable pedestrian experience than an attached sidewalk. Park Meadows Drive/Boulevard does not currently provide an on-street bikeway or shared-use path.

Park Meadows Drive/Boulevard, like other arterials in Lone Tree is classified as a high-stress facility for bicycle travel. Several comments collected during public outreach for this Plan requested improved conditions for bicyclists on Park Meadows Drive/Boulevard as well as improved crossings to access key destinations such as Lincoln Station.

Numerous pedestrian accidents occurred at intersections on Park Meadows Drive. Public comment included requests to improve crossings at the Lone Tree Entertainment District, fill sidewalk gaps along Park Meadows Drive, provide a sidewalk on the north bound side of Park Meadows Drive along the Lincoln Station area and to slow speeds on Park Meadows Drive east and west of Yosemite Street.



Proposed Improvements

The proposed cross section on Park Meadows Drive represented by PM1 and PM2 in [Figure 4](#) reduces travel lanes to 11 feet to provide five foot on-street bike lanes on both sides of the street. Reducing the width of travel lanes can also have the added effect of reducing travel speeds. Adding on-street bike lanes accommodates the public request for direct north-south (and east-west) bikeways throughout the City for bicyclists and provides the opportunity for a connected on-street bicycle network. Because the City's right-of-way is so constrained, additional width for on-street bike lanes or shared-use paths is not available. As such, recommended facilities would be included through restriping within the existing right-of-way. Sidewalks are being constructed as individual parcels develop, which will address public comment pertaining to a complete sidewalk network.

The right-of-way on Park Meadows Boulevard, south of Lincoln Avenue, represented by PM3 in [Figure 4](#) widens to accommodate six foot bike lanes. This stretch of roadway is a five lane cross section.

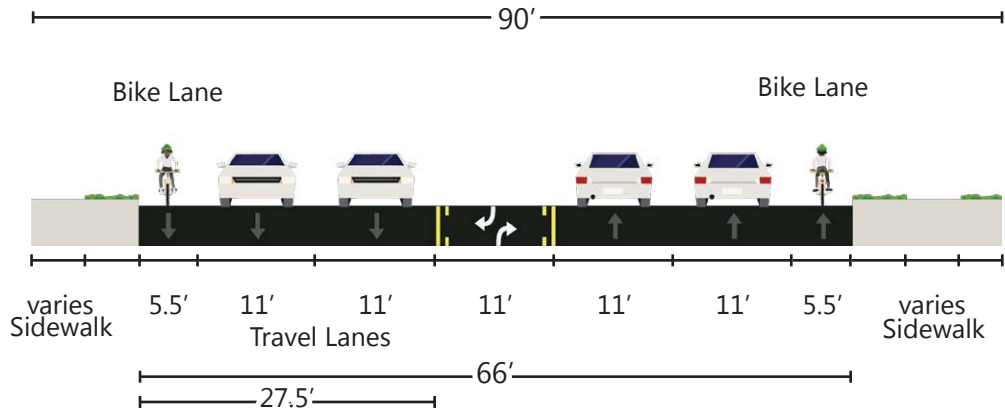


Park Meadows Drive between Acres Green Drive and Yosemite Street.

Figure 4. Park Meadows Drive Proposed Cross Sections

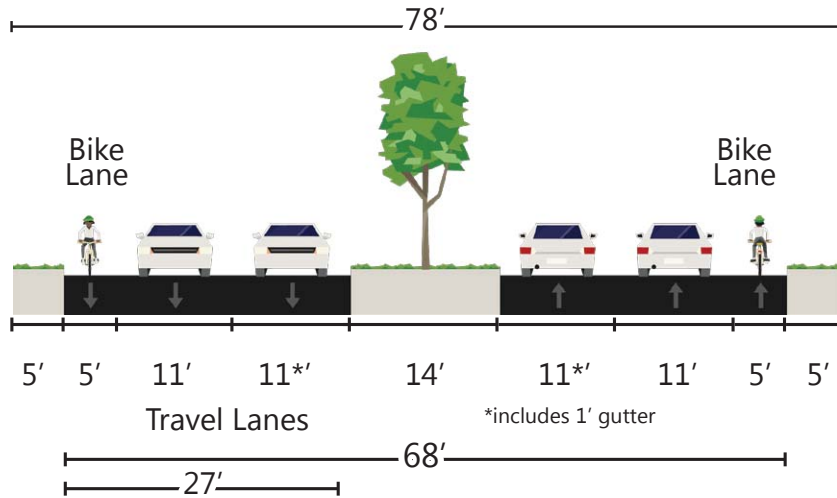


PM1



Note: Where two-way left-turn lane is present.

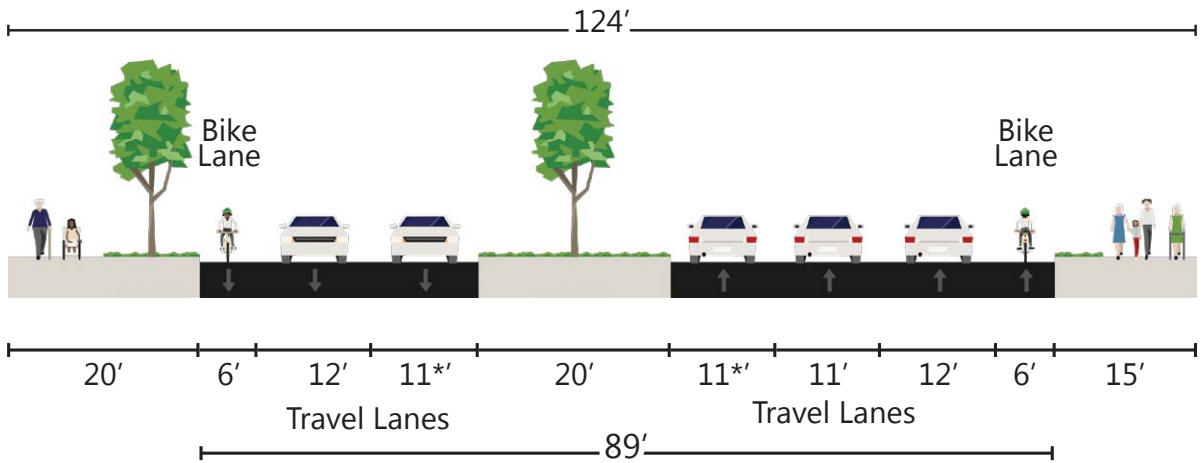
PM2



Note: Sidewalks are located in easement outside of City right-of-way

Note: Where raised median is present.

PM3



*includes 1' gutter

Note: Sidewalks are located in easement outside of City right-of-way. Expand to 10' shared-use path.

Yosemite Street

Existing Conditions

Yosemite Street provides a north-south connection through the City extending from the northern City limits to its southern terminus at Lincoln Avenue. Yosemite Street carries approximately 30,000 vehicles per day at its busiest stretch just south of Park Meadows Drive, 19,000 vehicles per day north of Lone Tree Parkway and 15,000 vehicles per day south of Lone Tree Parkway.

North of Fairview Drive, Yosemite Street is a four lane arterial with two 12 foot northbound lanes and two 12 foot southbound lanes. South of Fairview Drive, the roadway widens to six lanes. Sidewalks are continuously provided along all of Yosemite Street but vary in width and design. Sidewalk width varies between six and eight feet; some sidewalks are detached but others are attached.

Yosemite Street does not provide on-street bicycle facilities or shared-use paths. Right-of-way on Yosemite Street varies significantly from 99 feet at the Yosemite Street/Park Meadows Drive intersection to 161 feet just north of Lincoln Avenue.

Collisions between bicyclists and automobiles on Yosemite Street in the past five years occurred primarily at major intersections. Accidents occurred at the Yosemite Street/C-470 interchange and at Yosemite Street's intersections with Park Meadows Drive, Maximus Drive, Lone Tree Parkway and Lincoln Avenue. Like the other arterials in the City, Yosemite Street is associated with a high Level of Traffic Stress that likely discourages many people from bicycling or walking along this roadway.

Members of the public expressed many concerns and suggestions for improving bicyclist and pedestrian comfort and enhancing connections during public outreach for this Plan. Ways to improve safety included improving the crossings for bicyclists and pedestrians at the Yosemite Street/C-470 interchange and at the Yosemite Street/Park Meadows Drive intersection. There were also requests to provide bicycle lanes on



Yosemite Street approaching C-470.

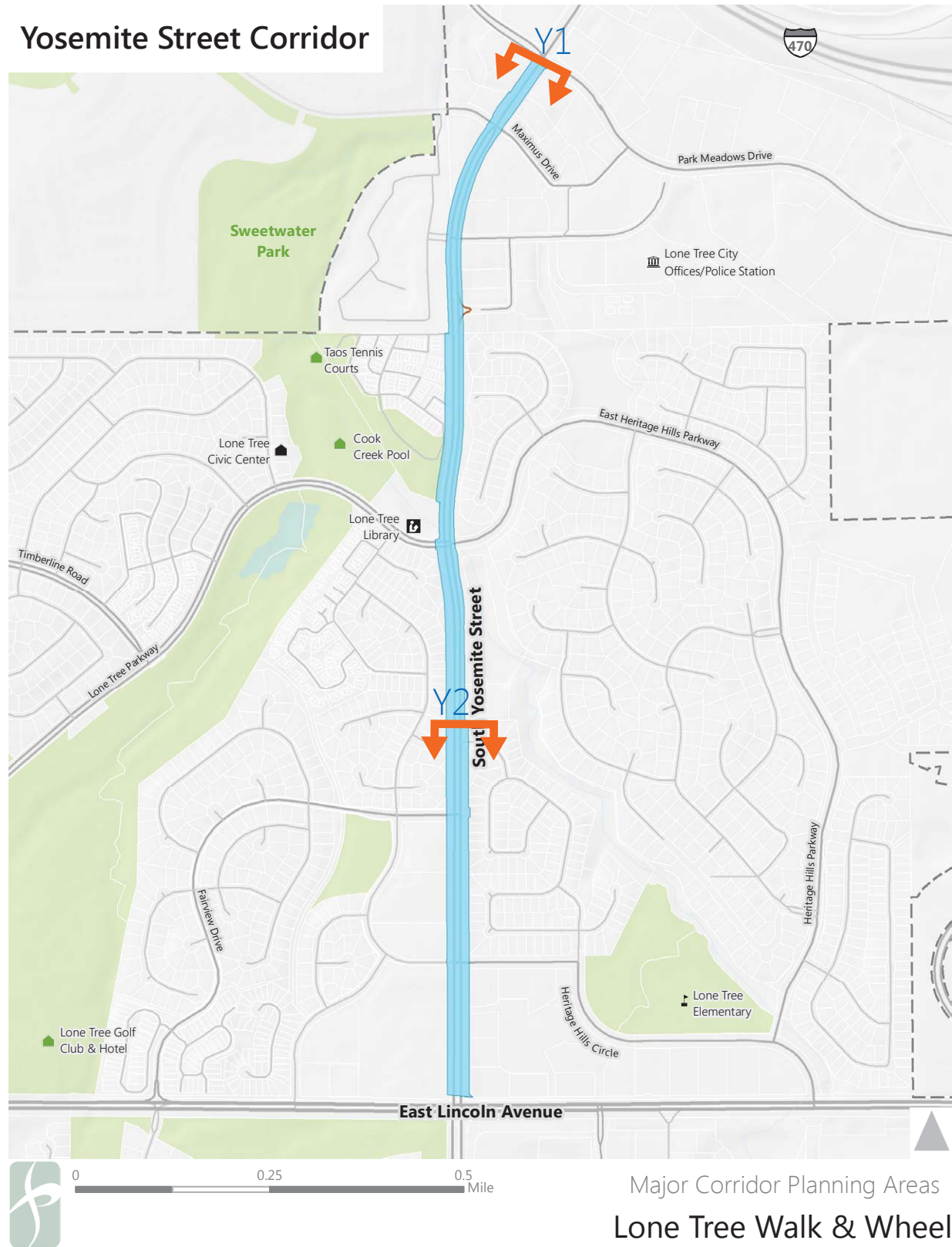
Yosemite Street that connect to the existing bike lanes to the west.

Proposed Improvements

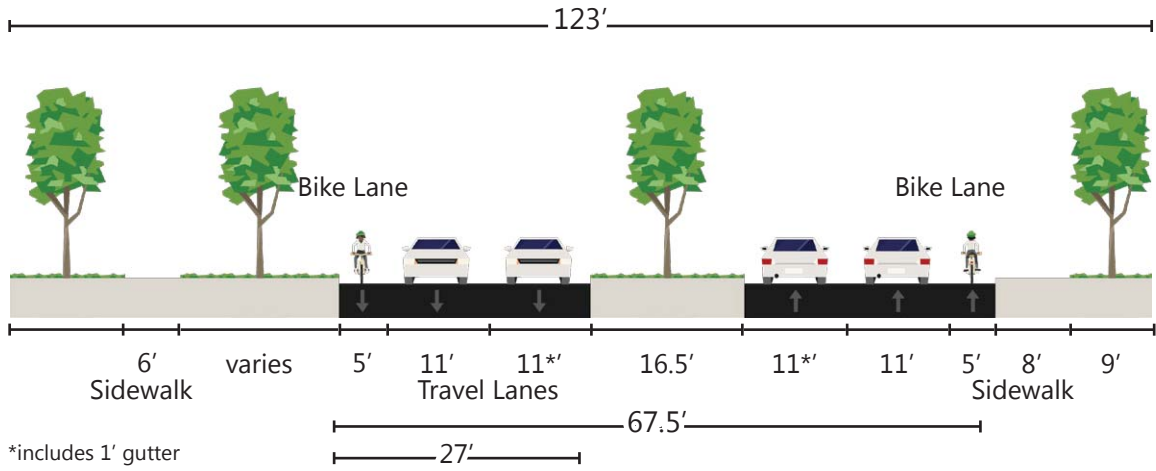
Along significant portions of Yosemite Street, five foot on-street bike lanes can be striped on Yosemite Street within the existing curb-to-curb width by reducing the 12 foot travel lanes to 11 feet and repurposing the three foot striped shoulder on both sides of the street. This would provide for an expanded on-street bicycle network and allow direct north-south travel for "Enthusiased and Confident" bicyclists; the Willow Creek Trail is a nearby north-south facility that offers a higher level of comfort for "Interested but Concerned" bicyclists.

In addition to the on-street bike lanes, the grade separation of Yosemite Street at the C-470 interchange will improve conditions for bicyclists on the Centennial (C-470) Trail. Additionally, the proposed shared-use path connection between the Willow Creek Trail and the Yosemite Street/Park Meadows Drive intersection (project number 13 in [Figure 18](#)) will improve access to the trail for bicyclists and pedestrians approaching from Park Meadows Drive.

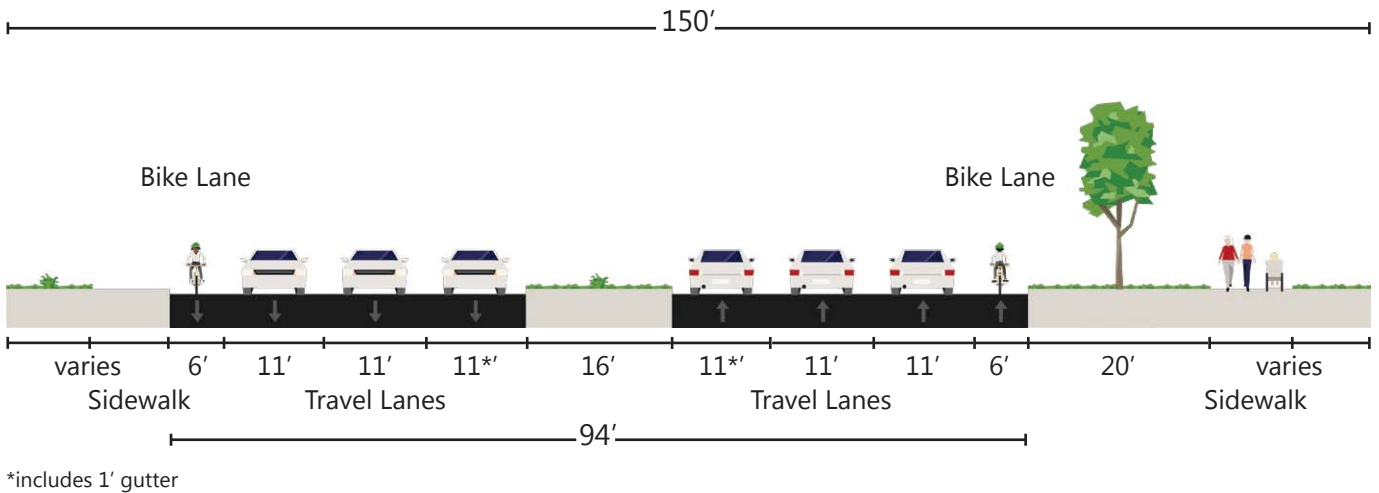
Figure 5. Yosemite Street Proposed Cross Sections



Y1



Y2



Lincoln Avenue

Existing Conditions

Lincoln Avenue is a major arterial that bisects the City east-west. It provides between four and seven travel lanes; four travel lanes west of Yosemite Street and six to seven travel lanes east of Yosemite Street. Lincoln Avenue is the most heavily traveled roadway in City carrying approximately 70,000 vehicles per day between I-25 and Havana Street.

The right-of-way on Lincoln Avenue is wide, ranging from 137 feet to 161 feet. Lincoln Avenue provides an eight foot meandering sidewalk on both sides of the street between the western City limits and Park Meadows Drive/Boulevard. Although the sidewalk is generally detached in this stretch by a wide landscaped buffer, some segments of sidewalk are adjacent to the curb. Sidewalk has not been constructed on the south side of Lincoln Avenue between Park Meadows Drive/Boulevard and I-25; the sidewalk on this segment's north side is attached. Sidewalk also has not been constructed on several segments of Lincoln Avenue east of I-25. This roadway does not provided dedicated bicycle facilities.

Seven collisions between bicyclists and automobiles occurred on Lincoln Avenue west of I-25 over the last five years and two collisions between pedestrians and vehicles occurred east of I-25. This relatively high number of collisions between bicyclists and automobiles reveals a demand for bicycle facilities on Lincoln Avenue. Lincoln Avenue is also identified as having a high Level of Traffic Stress.

The project team received numerous requests from the public to increase safety crossing Lincoln Avenue at various intersections and to provide facilities for bicycle travel. A common request was to build a grade separation for the Willow Creek Trail at Lincoln Avenue. The City of Lone Tree is planning to construct a pedestrian and bicycle bridge to provide above-grade crossing at Lincoln Avenue approximately 500 feet west of the intersection of Lincoln Avenue and Heritage Hills Circle.

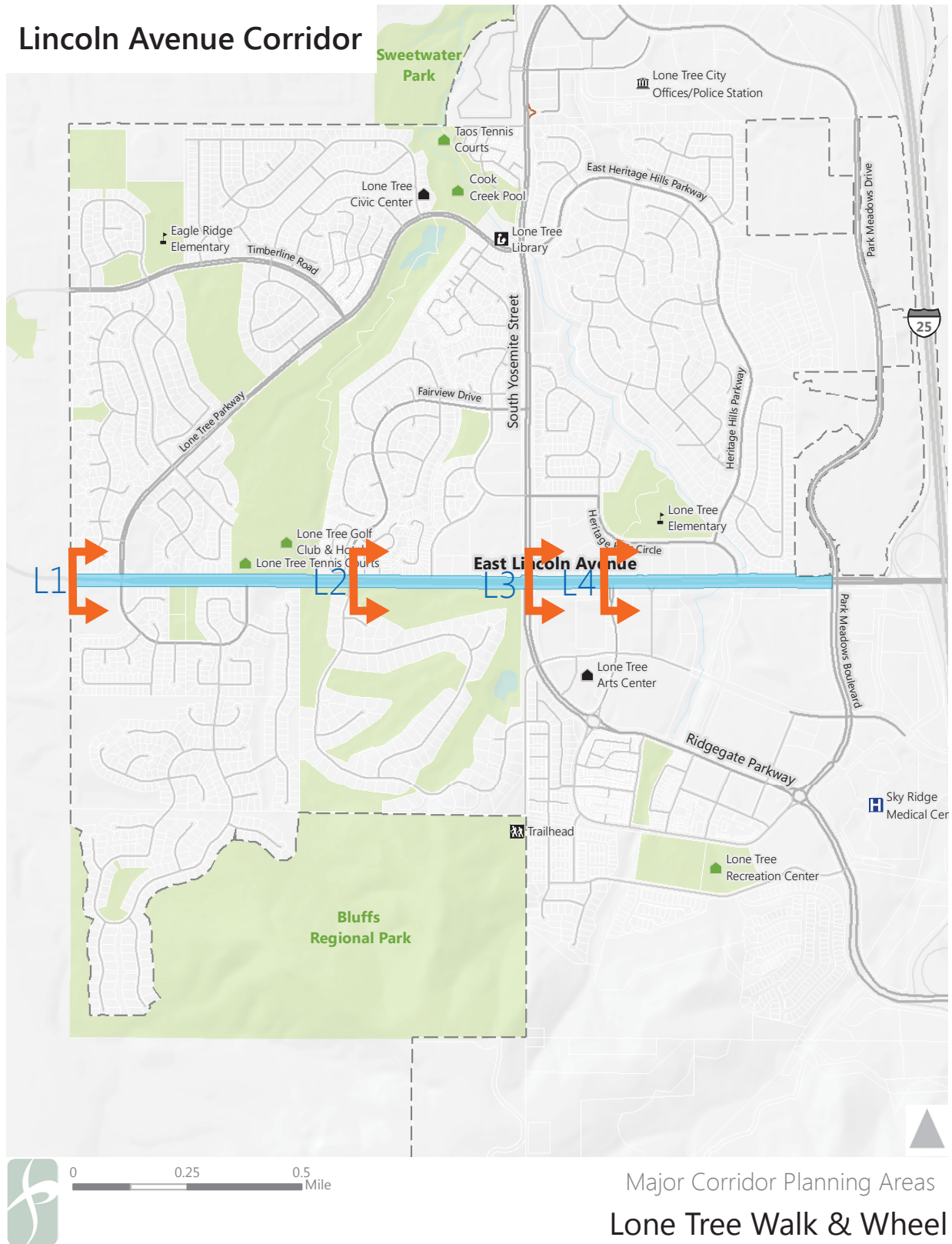


Lincoln Avenue west of Lincoln Avenue.

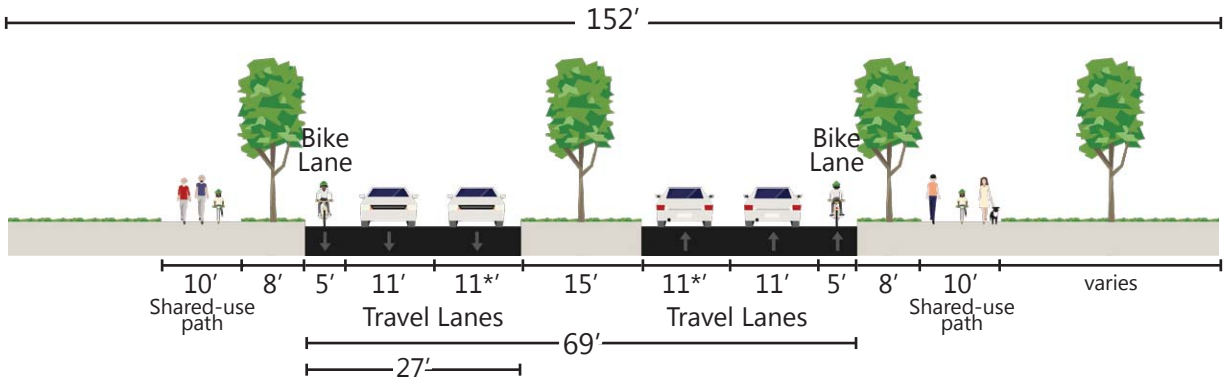
Proposed Improvements

Proposed on-street bike lanes can be striped on many portions of Lincoln Avenue by reducing the 12 foot travel lanes to 11 feet and, in some cases, repurposing the three foot striped shoulder on both sides of the street. The proposed cross section also upgrades the eight foot sidewalk on each side of Lincoln Avenue to a shared-use path; the shared-use paths will connect neighborhoods along Lincoln Avenue to the Willow Creek Trail. These improvements will accommodate the public requests for east-west and regional connectivity for pedestrians and bicyclists.

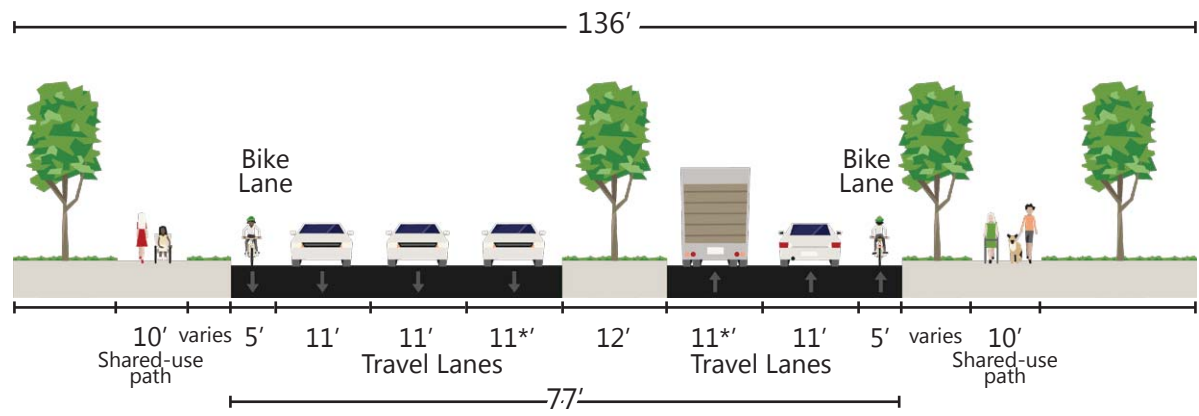
Figure 6. Lincoln Avenue Proposed Cross Sections



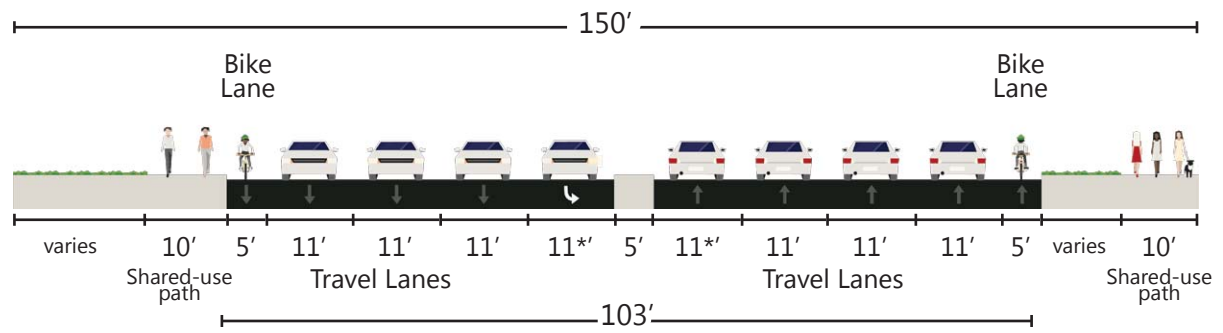
L1



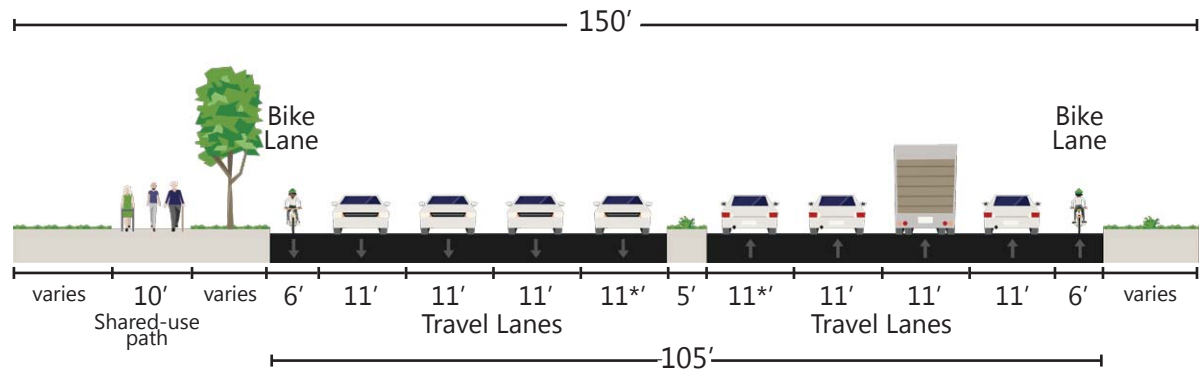
L2



L3



L4



Note: Shared-use path located in easement outside of City right-of-way

*includes 1' gutter

RidgeGate Parkway

Existing Conditions

RidgeGate Parkway is a four lane arterial from Lincoln Avenue to Crossington Way where it transitions to a six lane roadway. East of I-25, RidgeGate Parkway will eventually be constructed as a six lane arterial. Between Lincoln Avenue and Sky Ridge Medical Center, RidgeGate Parkway carries approximately 4,600 vehicles per day.

RidgeGate Parkway features two, two-lane roundabouts: one at Commons Street and another at Park Meadows Boulevard. Two blocks between the roundabouts provide on-street parking lanes. Sidewalks are provided with exception of the undeveloped parcel on the south side of the street between Bellwether Lane and Commonwealth Street where sidewalk has not been constructed. Sidewalks are generally detached except for a few locations such as on the north side of RidgeGate Parkway between Bellwether Lane and Bismark Drive. East of I-25, RidgeGate Parkway will be built as RidgeGate East develops.

Several members of the public indicated that they felt unsafe riding a bicycle on RidgeGate Parkway and crossing the two lane roundabouts as a pedestrian.

Proposed Improvements

The proposed cross section for RidgeGate Parkway will add on-street bike lanes between Lincoln Avenue and I-25. East of I-25, a two-way cycletrack is proposed on the north side of RidgeGate Parkway. Shared use paths are also proposed on RidgeGate Parkway between the East/West Trail and Park Meadows Boulevard to provide continuity between RidgeGate East and the Willow Creek Trail.

The following proposed improvements will retrofit the existing roadway between Lincoln Avenue just west of I-25. The corridor east of I-25 will be discussed in the RidgeGate East section. Between Park Meadows Boulevard and I-25, RG3 in [Figure 7](#), on-street bike lanes will be constructed without reducing the number of travel lanes. However, between the roundabouts at Commons Street and Park Meadows Boulevard, RG2, travel lanes will be temporarily reduced to accommodate



RidgeGate Parkway south of Lincoln Avenue.

on-street bike lanes. Between Lincoln Avenue and the first roundabout, RG1 in [Figure 7](#) RidgeGate Parkway was constructed as a four lane roadway to accommodate future traffic as RidgeGate East builds out; however, its existing traffic volumes (approximately 4,600 vehicles per day) do not warrant four travel lanes. A three lane roadway (one travel lane in each direction and a two-way left-turn lane) can typically accommodate between 15,000 and 18,000 vehicles per day. The proposed cross section, illustrated by RG2 in [Figure 7](#) will provide two 11 foot travel lanes, an 11 foot two-way center-turn lane, an eight foot parking lane on one side of the street, eight foot sidewalks on both sides of the street and seven foot on-street bike lanes on both sides of the street. Note that only one sidewalk is shown, a second eight foot sidewalk will be constructed with the adjacent parcel.

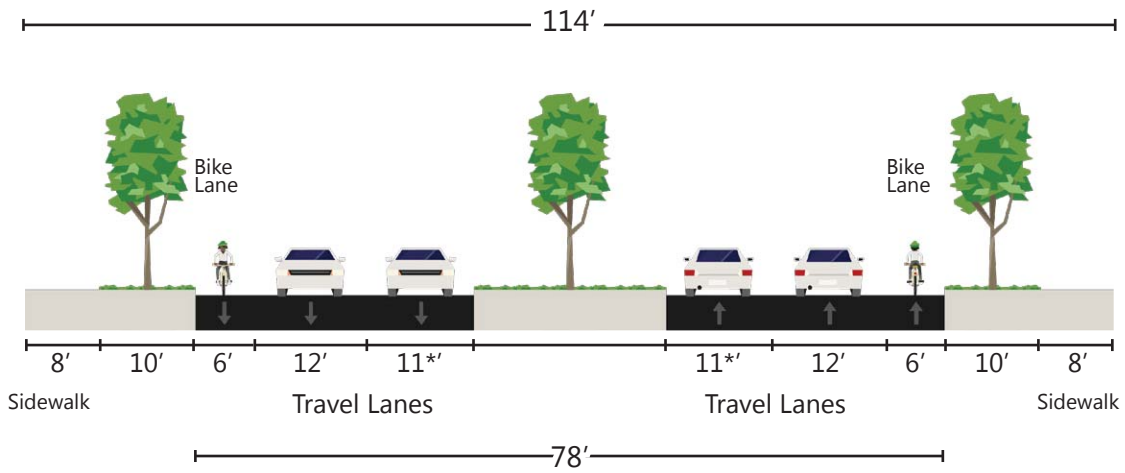
With the lane reduction on RidgeGate Parkway, the two lane roundabouts will be reduced to one lane to improve safety for pedestrians and bicyclists. One lane roundabouts are preferable to two lane roundabouts for pedestrians as one lane roundabouts do not have the possibility of a multiple-threat collision, where a driver in one approaching lane yields to a pedestrian and a driver in an adjacent lane does not. A plan view illustration of the proposed one lane roundabout is shown in [Figure 8](#). This design is conceptual only.

As traffic volumes on RidgeGate Parkway increase with the development of RidgeGate East, the City will have the option to reinstate the four travel lanes on RidgeGate Parkway and the two lane roundabouts.

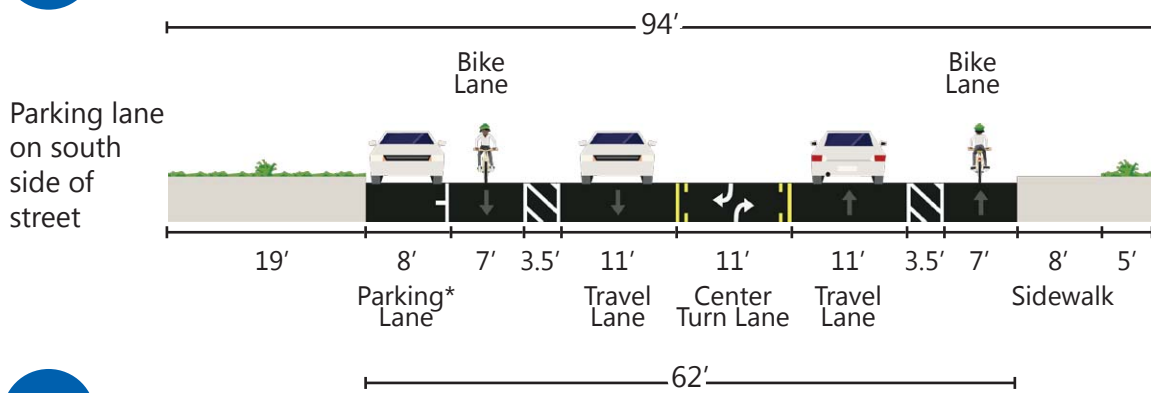
Figure 7. RidgeGate Parkway Proposed Cross Sections



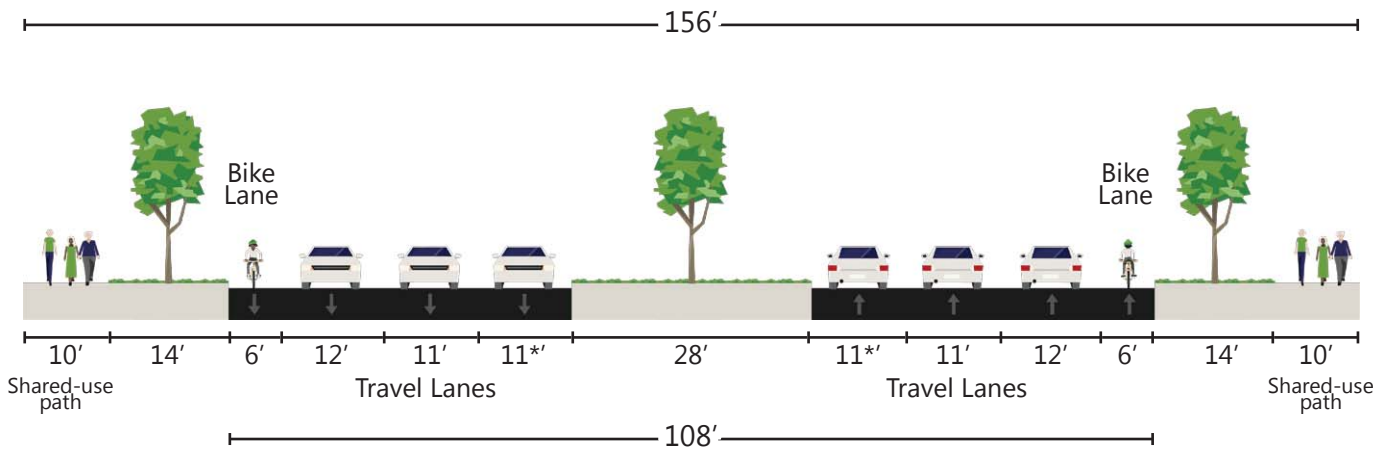
RG1



RG2

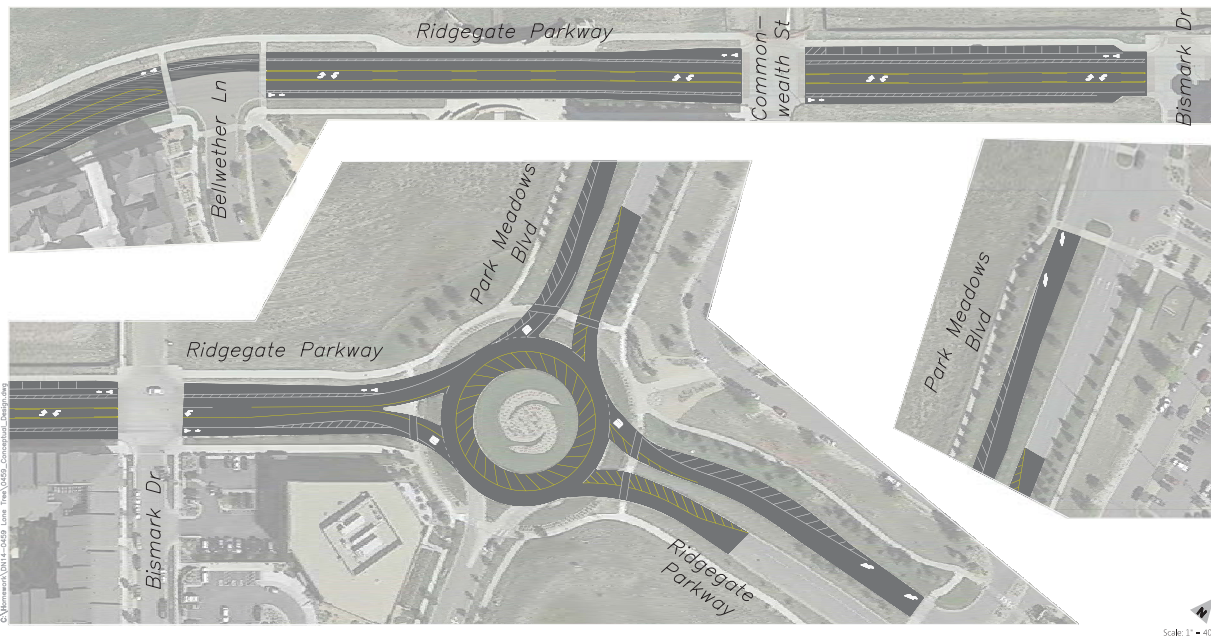


RG3



*includes 1' gutter

Figure 8. RidgeGate Parkway One lane Roundabout Conceptual Design





RIDGEGATE EAST

RidgeGate East is largely undeveloped presenting the opportunity to design roadways that accommodate all modes of transportation. The intent of this section is to provide roadway standards and guidelines for RidgeGate East. These standards will guide the construction of new roadways or expansion of existing roadways within RidgeGate East.

Recommendations were developed for pedestrian and bicycle facilities for each street type or functional classification in RidgeGate East in consideration of RidgeGate East's long term commitment to walkability, livability and multimodal access. Recommendations for existing roadways within RidgeGate East are discussed in Existing Roadways (page 32).

Proposed Roadway Design Guidelines

The functional classification of a roadway broadly defines its design and operational characteristics as they relate primarily to the movement of motor vehicles. RidgeGate East has defined roadway standards and guidelines. Arranged from highest traffic flow to lowest, RidgeGate East uses the following roadways: arterials, parkways, boulevards, avenues, streets, roads, drives and alleys.

Arterial

The primary purpose of an arterial roadway is efficient and continuous movement of through traffic. Lincoln Avenue is an example of an arterial roadway in Lone Tree that moves automobile traffic between activity centers. Arterial streets in Lone Tree have between four and eight through travel lanes and a posted speed limit of at least 35 miles per hour (mph). Typical traffic volumes on arterial roadways are greater than 12,000 vehicles per day (vpd). Parking is not permitted on arterial roadways.

Parkway

Parkways bring people into the town or pass through natural areas. These roads serve as high-capacity routes that connect arterials or interchanges to local roadways. RidgeGate Parkway is an example of a parkway in Lone Tree. Parkways permit relatively unimpeded traffic movement and are intended for use on those routes where four to eight travel lanes are required. Typical traffic volumes on parkways in Lone Tree are greater than 12,000 vpd. The posted speed limit is typically 35 mph.

Boulevard

As parkways enter urban areas, they become boulevards. Boulevards provide regional, multi-lane access to commercial and

mixed-use developments in high-density urban areas. Boulevards permit relatively unimpeded traffic movement and are intended for use on those routes where four travel lanes are required to serve greater than 12,000 vpd. The posted speed limit is 30 mph and on-street parking is permitted.

Avenue

Avenues are the connectors between mixed-use core areas and neighborhoods. Since they connect the two, they can be used in either commercial or residential areas. Avenues provide direct access to local streets with a particular emphasis on commercially oriented pedestrian traffic and pedestrian and bicycle traffic between neighborhoods. Traffic carried by avenues should have an origin or a destination within the neighborhood. Avenues in Lone Tree are two lane roadways that carry less than 7,000 vehicles per day and have a posted speed limit of 25 mph. On-street parking is permitted.

Street

Streets serve as the neighborhood roadway where density and land use warrant a roadway with on-street parking. Streets may have some kind of commercial aspect at their corners such as a corner store, post office, day care center, or any use that can be advantageous for neighborhood users. Local streets provide direct access to adjacent property. Traffic carried by local streets should have an origin or a destination within the neighborhood. Streets contain two travel lanes, carry less than 1,500 vpd and have a posted speed limit of 25 mph. On-street parking is permitted.

Road, Drive and Alley

Roads and drives are very low volume local streets that provide access to adjacent properties. Lone Tree has a large number of local streets that provide movement through Lone Tree's neighborhoods. Roads and drives are two lane roadways with less than 1,500 and 500 vpd respectively. Alleys carry less than 150 vpd.

Bicycle and Pedestrian Facility Recommendations

RidgeGate East aspires to adhere to a Traditional Neighborhood Development (TND) set of principles. TND's, when compared to typical suburban developments, have a greater potential to decrease vehicle travel by encouraging walking, biking or using public transportation. More routes are available to pedestrians and bicyclists because of the interconnected grid system thus creating a wealth of choice. Considering this goal, roadway design standards were developed that consider walking and bicycling viable modes of transportation for both work and recreational trips.

Bicycle Facilities

While all of the functional classifications in Lone Tree's current roadway design guidelines contain sidewalks, there is generally not a provision for bicycle facilities. The previous section of this Plan focused on retrofitting existing roadways to include bicycle facilities. Developing roadway design guidelines for RidgeGate East presents the opportunity to ensure bicycle facilities are constructed with the roadway, rather than retrofitting the street at a later time.

Bicycle facility solutions were developed for each functional class by considering the number of lanes, traffic volume and vehicle speed. Recommended practice is to provide a dedicated bicycle facility on roadways with volumes that exceed 3,000 vpd. On roadways with posted speed limits that exceed 35 mph, a separated dedicated bicycle facility is recommended.

Cycletracks

A cycletrack is an exclusive bike facility that combines the user experience of a separated path with the on-street infrastructure of a conventional bike lane. A cycletrack is physically separated from motor traffic and distinct from the sidewalk. Cycletracks may be one-way or two-way and may be at street level, at sidewalk level, or at an intermediate level. By separating cyclists from motor traffic, cycletracks can offer a higher level



of security than bike lanes and are attractive to a wider spectrum of the public.

Cycletracks can provide a higher level of security than bike lane and are more attractive for bicyclists of all levels and ages. For these reasons, cycletracks are recommended for the higher speed and volume roadways in RidgeGate East: parkways and boulevards. Though arterials are also high volume, this roadway classification is not proposed for RidgeGate East. [Figure 10](#), illustrates the boulevard proposed cross section featuring one-way cycletracks.

In most instances, a one-way cycletrack is recommended. A one-way cycletrack contains a cycletrack on both sides of the street and bicyclists travel with the direction of traffic. One-way cycletracks are preferred to minimize conflicts at intersections. In some instances, such as the two bridges that cross creeks over RidgeGate Parkway, there is not enough room to accommodate cycletracks on both sides of the street. In these cases with limited right-of-way, a two-way cycletrack with appropriate intersection treatments is recommended. Two-way cycletracks are physically separated cycletracks that allow bicycle movement in both directions on one side of the road. The two-way cycletrack is illustrated in the parkway cross section, [Figure 9](#).

Bike Lanes

The volumes and speeds on avenues and streets are high enough that bike lanes are warranted. A bike lane is defined as a portion of the roadway that has been designated by striping, signage and pavement markings for the preferential or exclusive use of bicyclists. Bike lanes enable bicyclists to ride at their preferred speed without interference from prevailing traffic conditions and facilitate predictable behavior and movements between bicyclists and motorists. A bike lane is distinguished from a cycletrack in that it has no physical barrier (bollards, medians, raised curbs, etc.) that restricts the encroachment of motorized traffic.

[Figure 11](#) and [Figure 12](#) depict proposed cross sections for avenues and streets in RidgeGate

East that feature 5.5 foot to six foot bicycle lanes. The bike lane is next to parking in the avenue and street cross sections with parking. When placed adjacent to a parking lane, the recommended bike lane width is at least 5 feet wide. Desired width adjacent to the face of curb is 6 feet.

Shared Roadway

Roads, drives and alleys have low volumes and speeds and can accommodate bicycles in addition to vehicles. It is recommended that bicycles share the road on these classifications. Sharrow symbols (on-pavement) are commonly used to signify a shared facility

Pedestrian Facilities

All of the functional classifications in RidgeGate East's current roadway design guidelines contain sidewalks that range from six to eight feet wide. Recommendations for enhanced pedestrian facilities are provided for each functional classification.

Parkways have higher volumes and speeds, therefore a detached, 10 foot shared-use path is recommended to accommodate both pedestrians and bicyclists that may not feel comfortable navigating the two-way cycletrack.

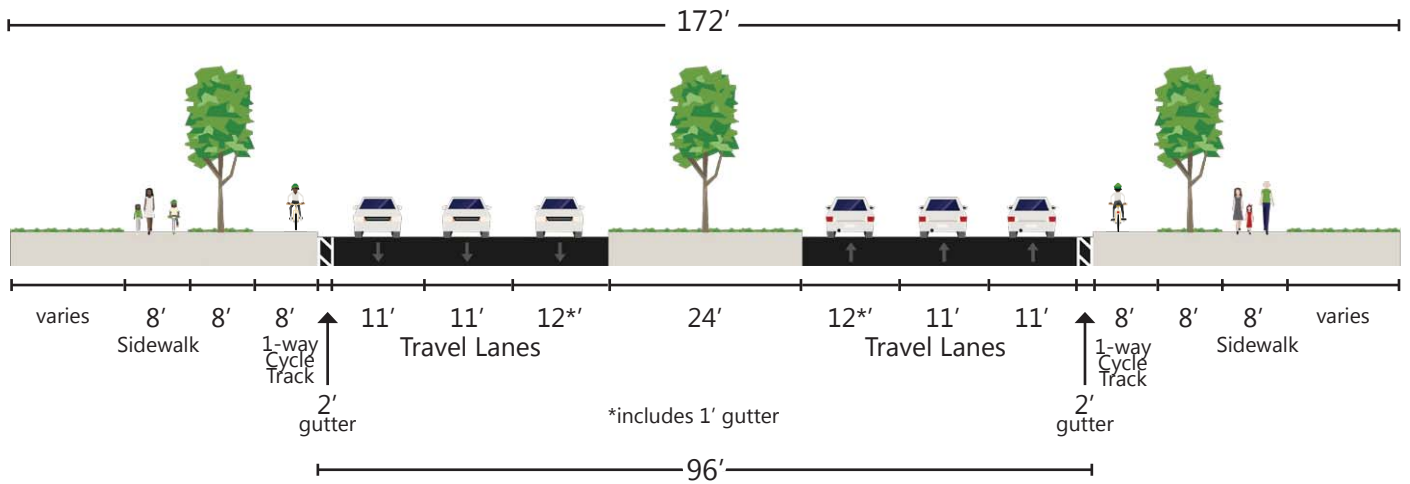
The boulevard and avenue cross sections feature an eight foot, detached sidewalk. Recommended practice is that sidewalks have a desired minimum through zone of six feet and an absolute minimum of five feet.

Pedestrian facilities for the street depend on if the street is located inside or outside of the Town Center. In the Town Center, 12 foot sidewalks with tree grates are recommended. Tree grates are typically four feet wide leaving an effective eight foot sidewalk. Six foot sidewalks are recommended in the Non-Town Center cross section in [Figure 12](#). The National Association of City Transportation Officials (NACTO) Urban Street Design Guide recommends sidewalks between five and seven feet wide in residential settings and eight to twelve feet wide sidewalks for downtown or commercial areas.

Figure 9. RidgeGate East Roadway Design Standards - Parkway

Parkway

One-way Cycle Track

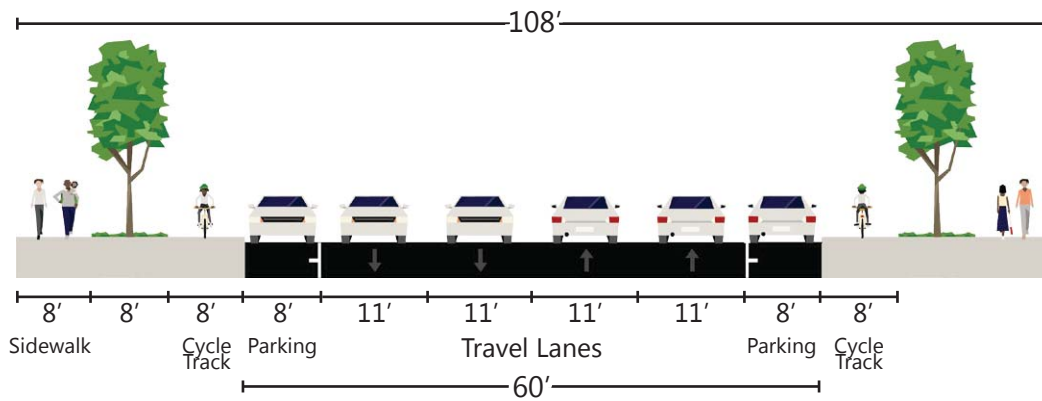


Where possible, a one-way cycle track on both sides of the street are preferred to minimize intersection treatments needed. In some instances such as RidgeGate Parkway, a two-way cycle track will be implemented to avoid building additional bridge structures.

Figure 10. RidgeGate East Roadway Design Standards - Boulevard

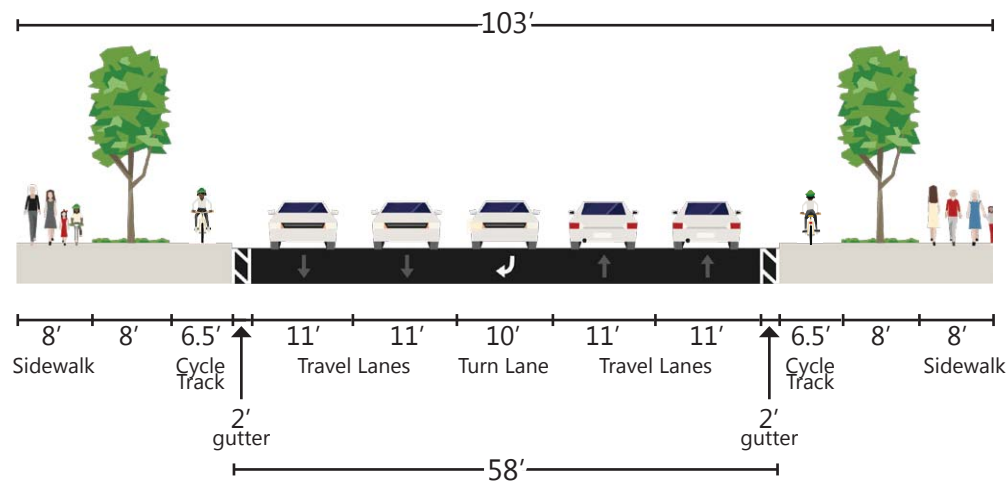
Boulevard

With On-Street Parking



- Note: 1. Town center contains 16 foot sidewalk with tree grates.
 2. Non-Town Center areas contain 8 foot tree lawn and 8 foot sidewalk.

No Parking



- Note: 1. Town center contains 16 foot sidewalk with tree grates.
 2. Non-Town Center areas contain 8 foot tree lawn and 8 foot sidewalk.

Figure 11. RidgeGate East Roadway Design Standards - Avenue

Avenue

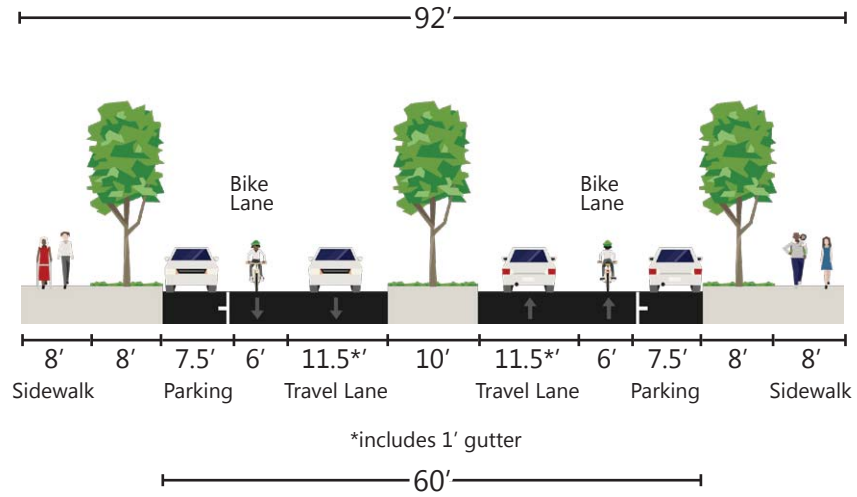
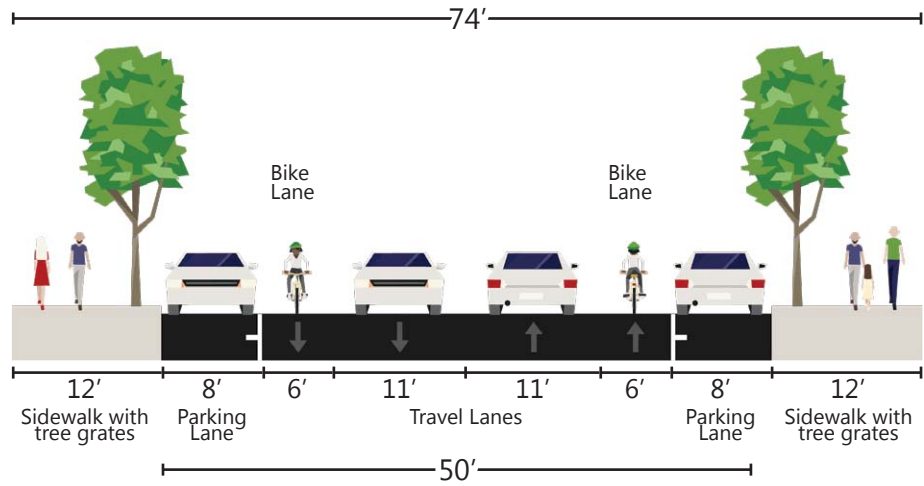


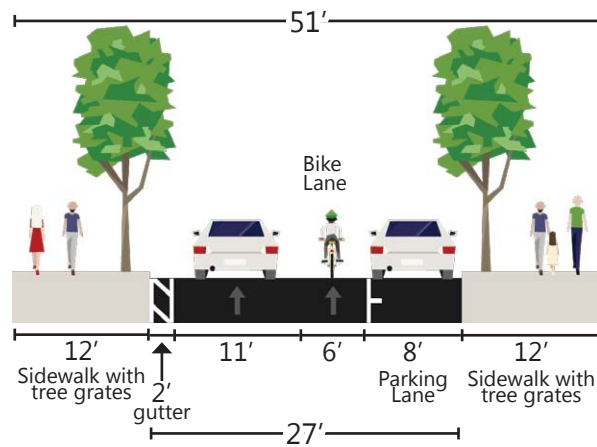
Figure 12. RidgeGate East Roadway Design Standards - Street

Street

Town Center

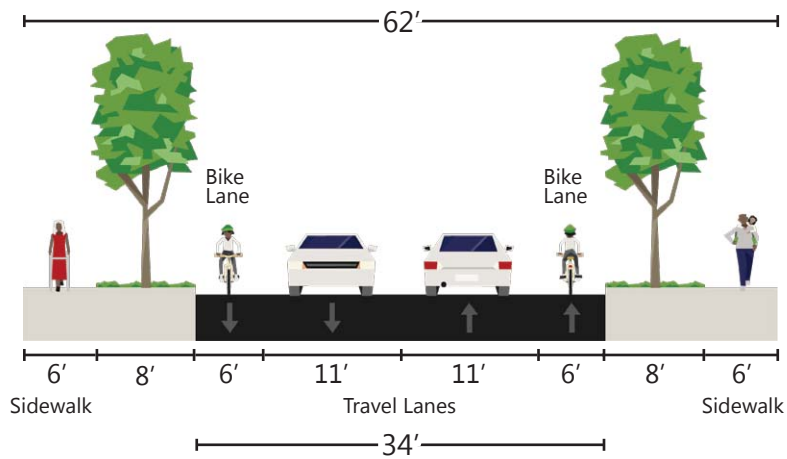


Town Center One-Way

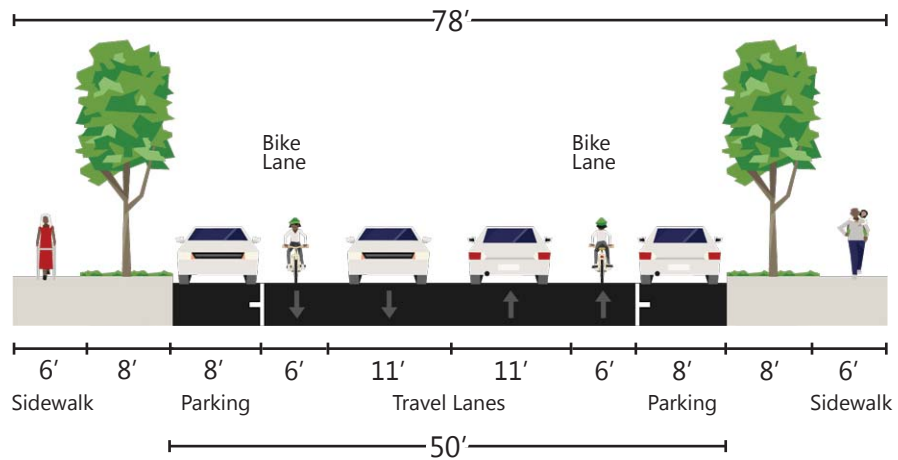


Street

Non-Town Center No Parking



Non-Town Center With On-Street Parking



Existing Roadways

There are currently two major corridors east of I-25 in RidgeGate East. Future characteristics of these roadways will largely be determined by surrounding future development. The cross sections provided are only intended to guide future development and are contingent upon the City acquiring adequate right-of-way. The extents of these roadways are represented by projects: 41, 42, and 43 in [Figure 13](#).

Lincoln Avenue

The land south of Lincoln Avenue east of I-25 in Lone Tree is largely undeveloped. The 4th Amendment of the RidgeGate Planned Development District shows Commercial Mixed Use for the areas south of Lincoln Avenue. With the construction of these commercial parcels, there may be opportunities to consider upgraded facilities for pedestrians and bicyclists. [Figure 14](#) illustrates a proposed cross section with a 10 foot shared used path and 5 foot bike lane on both sides of the street.

RidgeGate Parkway

East of the I-25 interchange RidgeGate Parkway becomes a two lane roadway. As RidgeGate East develops, RidgeGate Parkway will be widened to accommodate increased traffic volumes. [Figure 15](#) illustrates the proposed cross section. A two-way cycle track, rather than the one-way cycle track depicted in [Figure 9](#), is proposed to avoid building additional bridge structures. It is recommended that the City consult with Douglas County on possible bicycle connections east of Lone Tree City limits.

Peoria Street

Peoria Street is currently a two lane roadway. As RidgeGate East develops it is recommended that this roadway includes a one-way cycle track and eight foot sidewalk on both sides of the street as shown in [Figure 16](#). The City should consult with Douglas County on the possibility of continuing the cycle track and sidewalk through Meridian to Lincoln Avenue.

Figure 13. RidgeGate East Existing Corridors

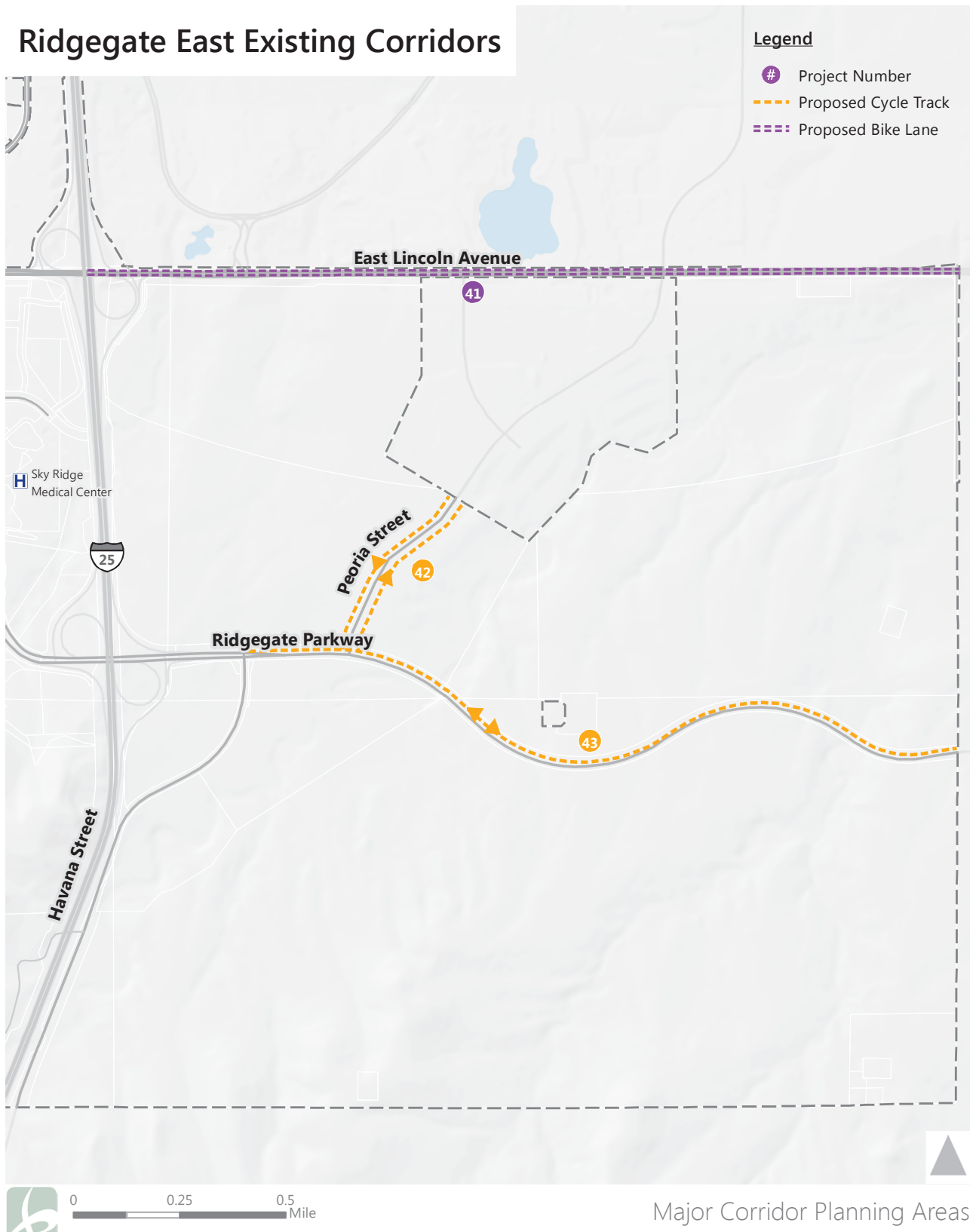
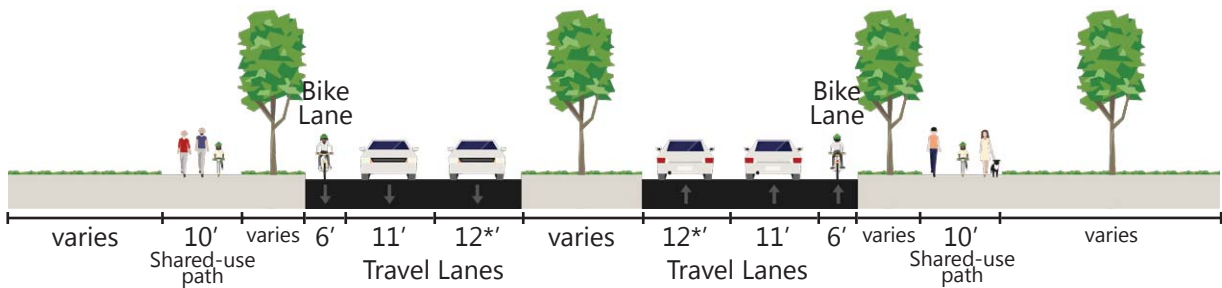


Figure 14. Lincoln Avenue East Proposed Cross Section

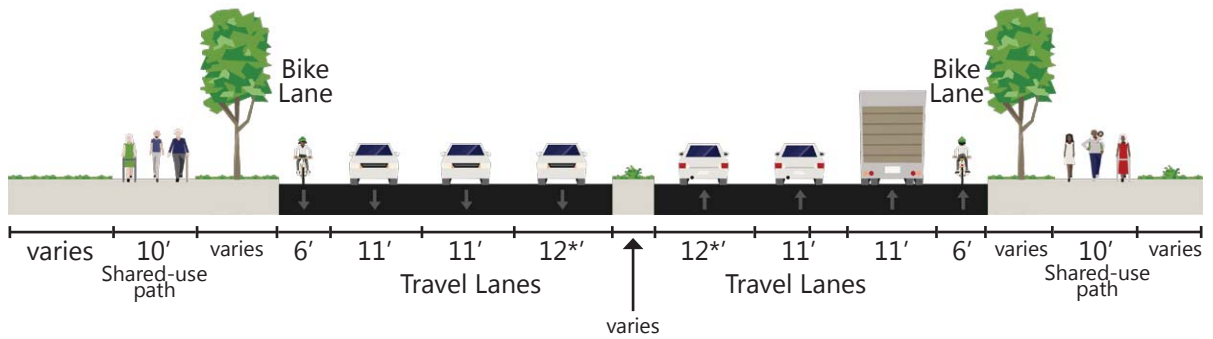
Four Lane Cross Section



*includes 1' gutter

Example only. Additional through or turn lanes may be added to intersection approaches.

Six Lane Cross Section



*includes 1' gutter

Example only. Additional through or turn lanes may be added to intersection approaches.

Figure 15. RidgeGate Parkway East Proposed Cross Section

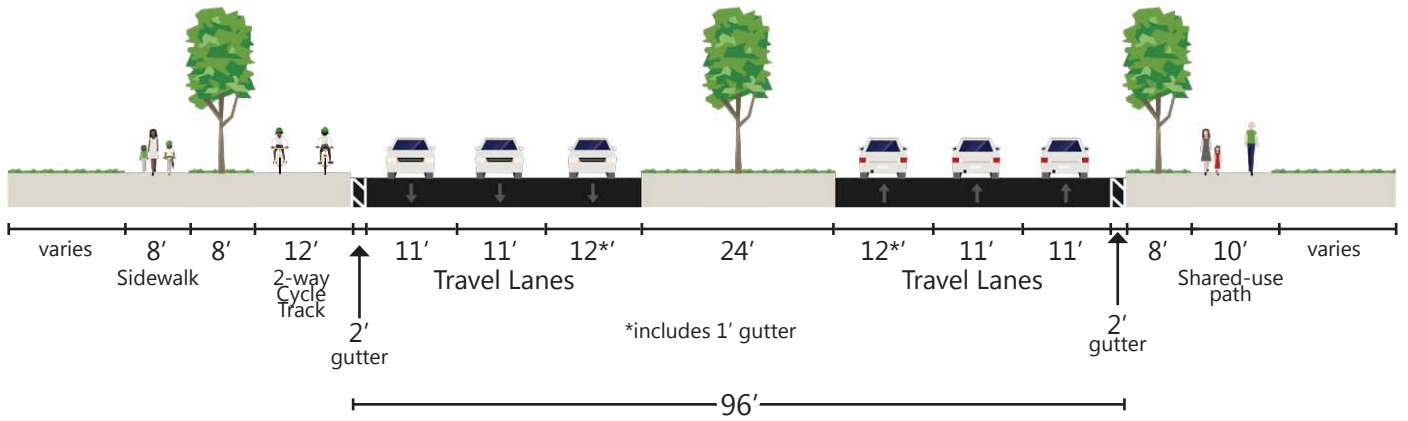
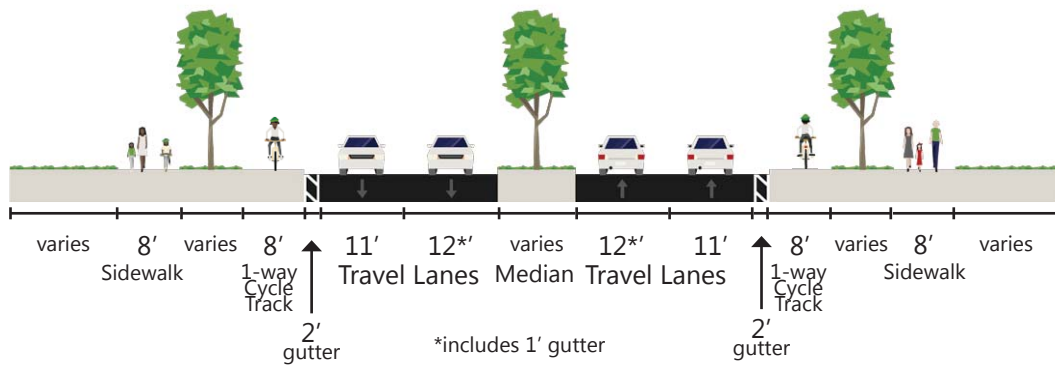


Figure 16. Peoria Street Proposed Cross Section



*Example only. Actual number of travel lanes may vary.

OTHER PROJECTS

Crosswalk Enhancements

Public comment received through the Walk & Wheel Plan indicated a desire for improved pedestrian crossings at several locations.

Uncontrolled Crosswalks

To address these comments grade separations are proposed at two locations, Yosemite Street at the C-470 Interchange and the Willow Creek Trail at Lincoln Avenue. At other locations, a combination of Rectangular Rapid Flashing Beacons (RRFBs) or median refuge islands are proposed to improve driver yield compliance and pedestrian safety. These devices were selected based on best-practice research and design guidance considering each roadway's unique characteristics, including traffic volume, traffic speed, number of travel lanes and device effectiveness.

RRFBs are user-actuated, yellow LED lights that supplement warning signs at uncontrolled crosswalks. They can be mounted at the side of the roadway, in the median or overhead. They can be activated by pedestrians manually with a push button or passively by a pedestrian detection system. RRFBs use a rapid flash pattern that is similar to the emergency flasher on police vehicles.

The Federal Highway Administration approved RRFBs for use in 2008 based on successful experimentation in St. Petersburg, Florida. That research showed an increase in motorist yield compliance from less than 16 percent to over 82 percent. The only devices to induce greater motorist yield compliance are traffic signal or red beacon devices, which are significant more expensive than an RRFB.



Rectangular Rapid Flashing Beacons (RRFBs)

Median refuge islands are raised islands placed at uncontrolled crosswalks to separate crossing pedestrians from motor vehicles. They allow pedestrians to cross roadways one approach at a time.

Safety research has shown that median refuge islands can reduce



pedestrian crashes by up to 46 percent.

RRFBs or median refuge islands are proposed at the following locations:



Median Refuge Island

- Centennial (C-470) Trail at Acres Green Drive – This is a busy trail crossing with relatively high volumes of bicyclists. Because of the trail’s approach grades, bicyclists can be moving quickly when they reach Acres Green Drive. This location already has a median refuge island so side- and median-mounted RRFBs are proposed. (Project 33 in [Figure 19](#)).
- Willow Creek Trail at Park Meadows Drive – This is also a busy trail crossing with relatively high volumes of bicyclists. This location already has a median refuge island so side- and median-mounted RRFBs are proposed. (Project 34 in [Figure 19](#)).
- Heritage Hills Circle at Commons Street (west side of Lone Tree Elementary School) – This crossing serves pedestrians bound for Lone Tree Elementary School. Because of its location on the intersection’s west leg, a median refuge island can be added at this location with high-visibility markings and signage. RRFBs would further enhance the crossing. (Project 38 in [Figure 19](#)).
- Heritage Hills Circle (east side of Lone Tree Elementary School) – This crossing also serves pedestrians bound for Lone Tree Elementary School. It will also be influenced by the new Willow Creek Trail bridge over Lincoln Avenue. High-visibility markings, signage and RRFBs are proposed. Relocating the crosswalk to the intersection’s west leg would allow for a pedestrian refuge island; however, this relocation may not be possible with the Willow Creek Trail bridge’s design. (Project 39 in [Figure 19](#)).

Traffic Signals

Lone Tree has marked crosswalks and pedestrian signals at most signalized intersections and recently updated pedestrian signals to feature a “countdown”, which research has shown to reduce vehicle-pedestrian conflicts. Additionally, new requirements from the Federal Highway Administration (FHA) require that signals provide more “Flash-Don’t-Walk” time to accommodate slower pedestrians. As the City adjusts signal timings throughout Lone Tree, the signal timings will be adjusted to provide more “Flash-Don’t-Walk” time per the new FHA requirements. Additionally, accessible pedestrian signals should be considered to adhere to Americans with Disabilities Act (ADA) standards as traffic signals are modified.

Entertainment District Streetscape Plan

The Lone Tree Entertainment District is located on both sides of Park Meadows Drive between Yosemite Street and approximately 800 feet east of Kimmer Drive. Currently, this segment of Park Meadows Drive has four travel lanes (two in each direction) and a two-way left-turn lane. Public comment received through the Walk & Wheel Plan and through previous planning efforts indicated a desire for improved bikeways and pedestrian crossings on this segment of Park Meadows Drive.

In the Major Corridors section, bike lanes are proposed on Park Meadows Drive that can be constructed by restriping the roadway using narrower travel lanes. These bike lanes will connect to bike lanes on Park Meadows Drive west of Yosemite Street and south towards Lincoln Station. Additionally, the City has previously proposed a traffic signal at the Park Meadows Drive/Kimmer Drive intersection to improve vehicle circulation and pedestrian crossings of Park Meadows Drive.

To further create a street that connects the Lone Tree Entertainment District on both sides of Park Meadows Drive and enhances safety, circulation, identity and access for all modes of transportation, the City should develop a streetscape plan for this segment of Park Meadows Drive. Key areas for the streetscape plan to address include bicyclist and pedestrian access to major destinations, safe crossings of Park Meadows Drive to key trip generators and improving the streetscape aesthetic and amenities that add identity to the corridor.





GOALS AND POLICIES

The following goals and policies were developed by collecting and synthesizing ideas and priorities provided by the Citizens' Recreation Advisory Committee (CRAC), Citizen Advisory Board to the Lone Tree Walk & Wheel Plan and residents through the Plan's on-line survey. Additionally, the transportation chapter of the City Comprehensive Plan was consulted to ensure consistency.

Goal 1: A well-connected trail, bikeway and walkway system to provide a high quality of life for residents and a high quality visitor experience.

- Provide recreational opportunities by connecting the trail, bikeway and walkway system to parks and regional trails.
- Promote the natural beauty of surrounding parks and open space.
- Promote the health benefits of an active lifestyle.
- Promote the environmental benefits of reduced traffic congestion, air pollution and noise pollution.

Goal 2: A transportation system that is safe for walking and bicycling.

- Increase education and training opportunities for bicyclists, pedestrians, motorists and law enforcement personnel.
- Increase enforcement of traffic laws for all roadway users to reduce bicycle and pedestrian related accidents.
- Provide safe facilities; maintain and reconstruct existing trails, bikeways and walkways in a manner that promotes safety, increases convenience and minimizes lifetime costs.

Goal 3: An expanding and well-maintained system of trails, bikeways and walkways that facilitates transportation and recreation.

- Identify an integrated system of trails and bikeways along with support facilities such as bicycle lockers and racks to serve local and regional commuting and recreational bicyclists.
- Develop a safe, convenient and continuous network of trails, bikeways and walkways that serves the needs of users. Identify opportunities to provide connections to schools, major destination areas and regional bikeways and trails.

Goal 4: An integrated multimodal transportation system that allows people of any age or ability to be comfortable driving, walking, biking or using transit.

- Balance modal performance of the transportation network to ensure adaptability to changing conditions, behaviors and expectations.
- Integrate and coordinate the connections between multiple modes such as providing bicycle and pedestrian connections to existing and future light rail stops.

Goal 5: A system of trails, bikeways and walkways that is implemented using a variety of funding sources.

This goal was not suggested by the public or planning boards, however it should be considered.

Goal 6: The integration of consideration for walking and bicycling into City planning activities and capital improvement projects and coordination with other relevant agencies to improve walking and bicycling facilities and access within and connecting to Lone Tree.

- Ensure the integration of trails, bikeways and walkways into the development of design standards for roadways in RidgeGate East and other new developments.





IMPLEMENTATION

This section illustrates how the proposed network can be implemented. The proposed network was broken up into separate projects. These projects were assigned a cost estimate and community benefit score and prioritized based on community values.



COST ESTIMATES

Cost estimates were established for each type of improvement. The following unit costs were assumed. Refer to [Appendix D](#) for detailed cost estimates.

Facility Type	Cost per Mile
Bike Lanes - Striping Only	\$173,000
Bike Lanes - Relocate Curb & Gutter	\$2,490,000
Bike Lanes - Reduce Median Width	\$1,180,000
Shared-Use Path - Widen Existing	\$2,550,000
Shared-Use Path - Pave Existing	\$462,000
Shared-Use Path - New	\$1,600,000



PRIORITIZATION

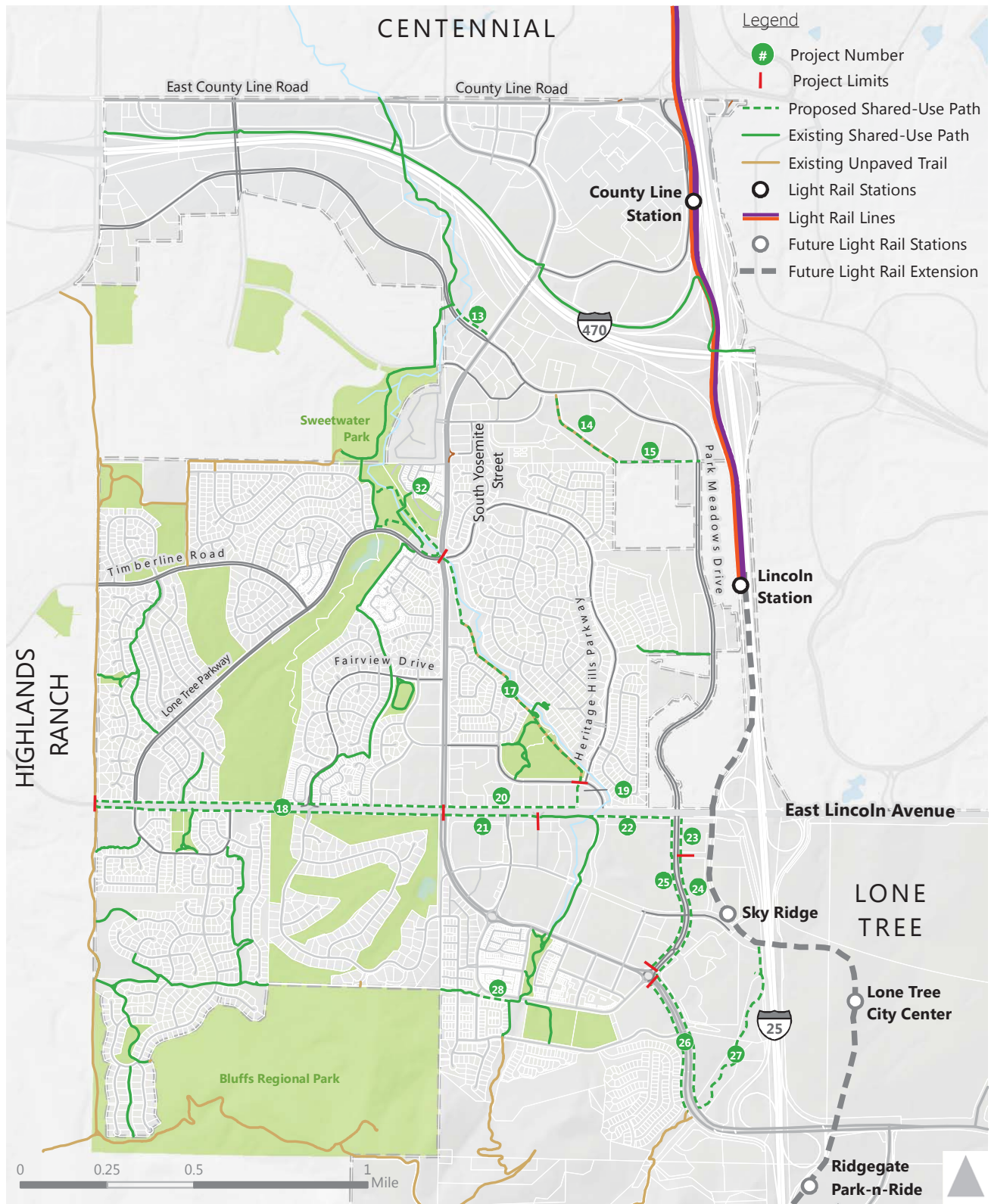
The proposed roadway network was broken into separate projects so that projects could be prioritized and completed incrementally as funds are made available. The map in [Figure 17](#) shows the proposed shared-use paths and trails and [Figure 18](#) shows proposed on-street bike lanes and cycletracks.

Prioritization criteria were developed based upon the goals of this Plan, which were derived from public outreach. Each criteria was assigned a weight based on the respective rating from the on-line community survey administered during this Plan. Results of this survey can be found in [Appendix C](#). The table below lists the criteria, weight assigned and a description of how the criteria was measured.

Projects within RidgeGate East (40-44) are to be constructed by the developer and were not included in the prioritization

Criteria	Weight	Measure
Closes critical network gap	3	Connects gaps in existing sidewalk, trail or bikeway network.
Connects to a key destination	3	Improvement to or addition of bike lane, shared-use path, trail or sidewalk that will directly access/front on a park, school, library, recreation center, shopping center, light rail station, or employment center.
Serves safety need	3	One or more vehicular collisions with pedestrian or bicyclists in the past 5 years.
Serves perceived safety issue	3	More than one public comment identifying safety concern.
Increases regional network connectivity	2	Bikeway or sidewalk will directly access a regional facility. There are four regional facilities in Lone Tree: Centennial Trail, Willow Creek Trail, Wildcat Trail and East/West Trail.
Improves recreational and/or commuting opportunity for users of most abilities	2	Improvement results in a Level of Traffic Stress score of 2 or lower or an improved off-street facility

Figure 17. Proposed Off-Street Projects



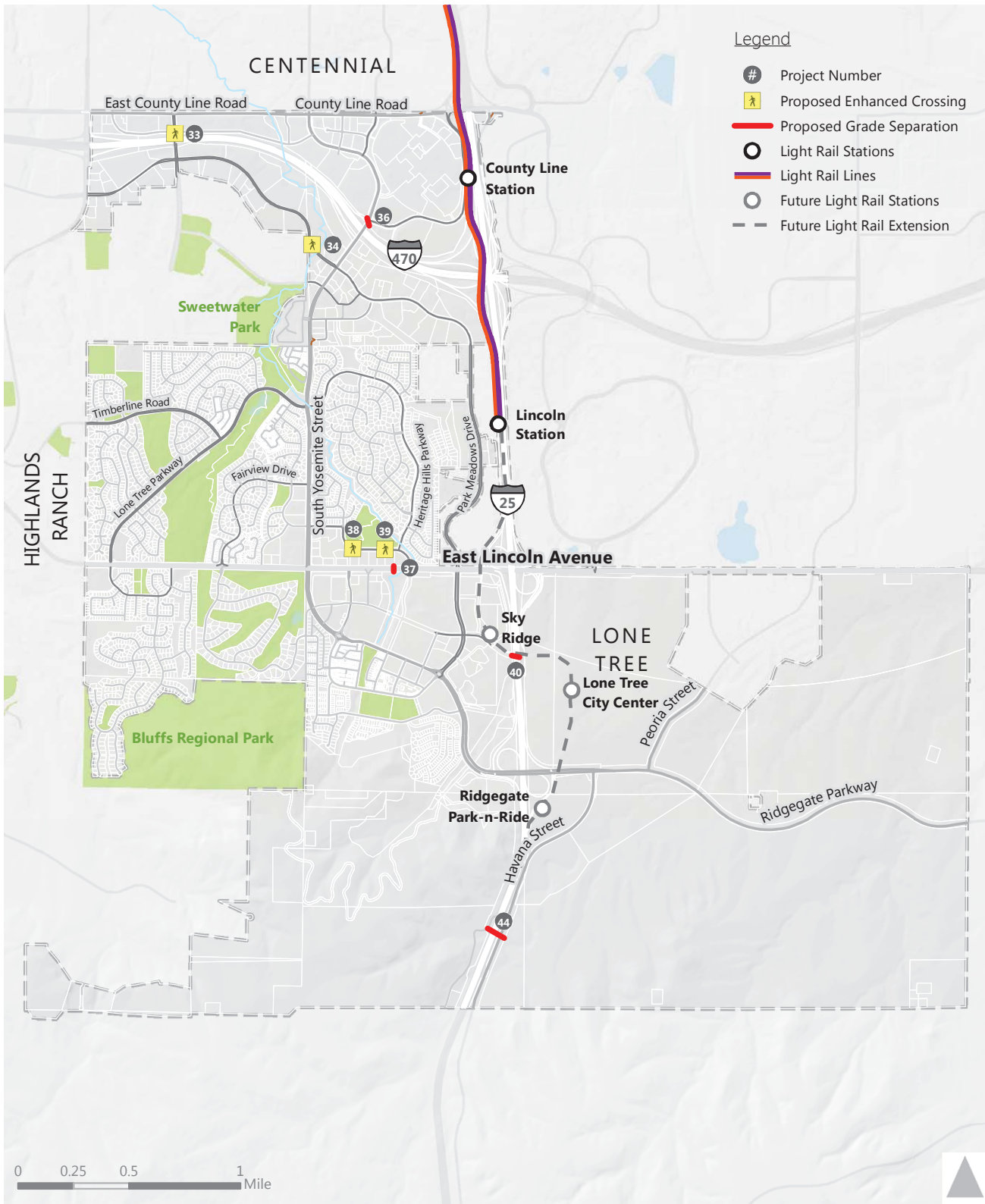
Proposed Shared-Use Paths
Lone Tree Walk & Wheel

Figure 18. Proposed On-Street Projects



Proposed Bikeways
Lone Tree Walk & Wheel

Figure 19. Proposed Enhanced Pedestrian Crossings



Proposed Enhanced Pedestrian Crossings
Lone Tree Walk & Wheel



Project Ranking

The criteria were weighted based upon level of importance as indicated in the project survey. Priority was assigned by the natural breaks in the community benefit values. Scores ranging from 8 to 12 were assigned a high priority level, 4 to 7 – medium and 0 to 3 were assigned to the low priority category. [Appendix E](#) contains the detailed project scoring.

The tables below are organized into: high, medium and low priority project lists. Projects are listed in descending order with the highest scoring project appearing at the top of the list and the lowest scoring project on the bottom, however this list is non-binding and projects may be implemented out of order. Implementation is expected to occur on an incremental basis as funds become available.

High Priority Projects

Project #	Type	Roadway/Trail	Project Limits	Distance (mi. or quantity)	Community Benefit Score	Project Cost
36	Crossing	C-470 Trail at Yosemite Street	N/A	N/A	12	4,857,000
13	Trail	Willow Creek Trail Connection (North)	Park Meadows Drive/ Yosemite Street to Willow Creek Trail north of Park Meadows Drive	0.13	10	\$215,240
19	Trail	Willow Creek Trail Connection (South)	North of Lincoln Avenue to north of Heritage Hills Circle	0.07	10	\$117,361
33	Crossing	C-470 Trail at Acres Green Drive	N/A	N/A	10	49,500
2	Bike Lane	Park Meadows Drive	Yosemite Street to Lincoln Avenue	1.86	9	\$644,648
8-9	Bike Lane	Lincoln Avenue	Yosemite Street to Park Meadows Drive	1.34	9	\$1,079,834
28	Trail	Bluffs Regional Park Connection	Bluffs Regional Park Trailhead (northeast corner of park) to Willow Creek Trail	0.10	9	\$161,149
37	Crossing	Willow Creek Trail at Lincoln Avenue	N/A	N/A	9	4,857,000
4	Bike Lane	Yosemite Street	Park Meadows Drive to Lincoln Avenue	1.39	8	\$480,162
38	Crossing	Heritage Hills Circle at Commons Street (west side of Lone Tree Elementary School)	N/A	N/A	8	33,000
39	Crossing	Heritage Hills Circle at Lone Tree Elementary School (east side)	N/A	N/A	8	33,000

Medium Priority Projects

Project #	Type	Roadway/Trail	Project Limits	Distance (mi. or quantity)	Community Benefit Score	Project Cost
17	Trail	Willow Creek Trail	North of Heritage Hills Circle to Yosemite Street	0.82	7	\$377,394
31	Bike Lane	Acres Green Drive	Park Meadows Drive to Centennial Trail	0.12	7	\$40,405
5-7	Bike Lane	Lincoln Avenue	Western City Limits to Yosemite Street	2.00	6	\$1,250,238
22	Shared-Use Path	Lincoln Avenue	South side of Lincoln Avenue from paved portion of Willow Creek Trail to Park Meadows Drive	0.24	6	\$389,341
32	Trail	Willow Creek Trail Extension south of Sweetwater Park	Loop south of Sweetwater Park	0.49	6	\$790,205
34	Crossing	Willow Creek Trail at Park Meadows Drive	N/A	N/A	6	49,500
11	Bike Lane	Ridgegate Parkway	Between roundabouts	0.48	5	\$167,630
12	Bike Lane	Ridgegate Parkway	2nd Roundabout to I-25 Interchange	0.50	5	\$2,501,613
15	Shared-Use Path	Apartment Trail to Park Meadows Drive	Retreat at Park Meadows Apartments to Park Meadows Drive	0.31	5	\$490,230
10	Bike Lane	Ridgegate Parkway	Lincoln Avenue to 1st Roundabout	0.36	4	\$1,788,125
24	Shared-Use Path	Park Meadows Boulevard	Eastside of roadway from Chatham Drive (Charles Schwab Campus) to Ridgegate Parkway	0.38	4	\$979,983



Low Priority Projects

Project #	Type	Roadway/Trail	Project Limits	Distance (mi. or quantity)	Community Benefit Score	Project Cost
25	Shared-Use Path	Park Meadows Boulevard	Westside of roadway from Lincoln Avenue to Ridgeway Parkway	0.47	4	\$1,198,910
1	Bike Lane	Park Meadows Drive	Acres Green to Yosemite Street	0.95	3	\$329,800
3	Bike Lane	Park Meadows Drive	Lincoln Avenue to Ridgeway Parkway	0.50	3	\$2,487,994
14	Trail	Apartment Trail to Entertainment District	Park Meadows Drive to behind Retreat at Park Meadows Apartments	0.28	3	\$127,911
20	Shared-Use Path	Lincoln Avenue	North side of Lincoln Avenue from Yosemite Street to project #19	0.38	3	\$968,093
21	Shared-Use Path	Lincoln Avenue	South side of Lincoln Avenue from Yosemite Street to paved portion of Willow Creek Trail	0.28	3	\$709,581
29	Bike Lane	Sky Ridge Avenue	Park Meadows Drive to Trainstation Circle	0.06	3	\$21,977
18	Shared-Use Path	Lincoln Avenue	Western City Limits to Yosemite Street	2.01	1	\$5,135,073
26	Shared-Use Path	Ridgeway Parkway	2nd Roundabout at Park Meadows Boulevard to project #27	0.81	1	\$2,055,304
27	Trail	Sky Ridge Trail	East of Sky Ridge Medical Center from the future Sky Ridge Avenue extension to project #26 and connection to grade separated crossing	0.63	1	\$1,006,233

APPENDIX A. EXISTING CONDITIONS REPORT

APPENDIX B. ISSUES AND OPPORTUNITIES MEMORANDUM

APPENDIX C. SURVEY DATA

APPENDIX D. COST ESTIMATES

APPENDIX E. PROJECT SCORING SHEET





APPENDICES

APPENDIX A. EXISTING CONDITIONS REPORT

APPENDIX B. ISSUES AND OPPORTUNITIES MEMORANDUM

APPENDIX C. SURVEY DATA

APPENDIX D. COST ESTIMATES

APPENDIX E. PROJECT SCORING SHEET



APPENDIX A. EXISTING CONDITIONS REPORT





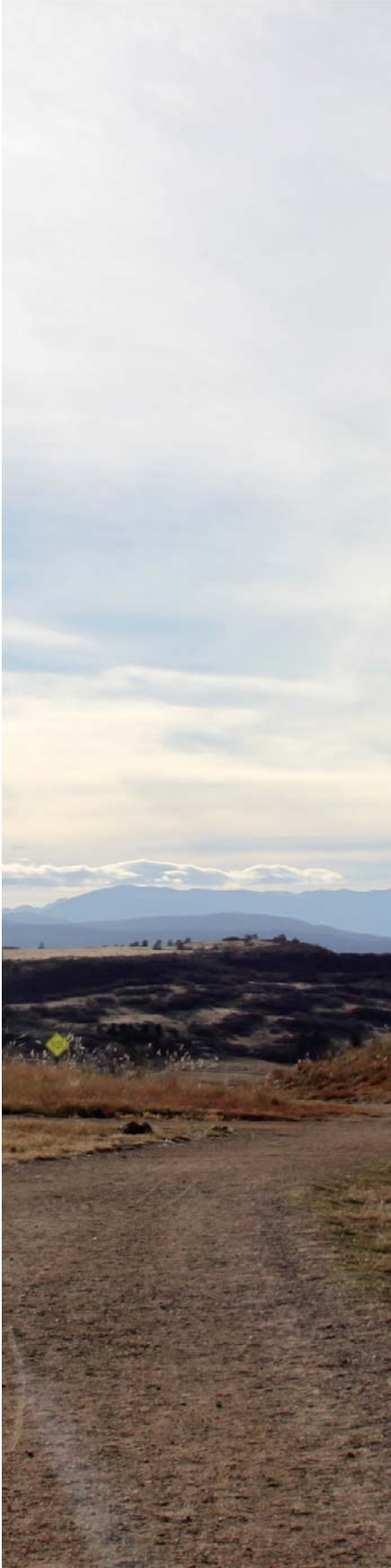
Existing Conditions DRAFT

Prepared by

FEHR & PEERS

621 17th Street, #2301
Denver, CO 80293

September 2014



CONTENTS

Existing Bikeways and Trails	1
Existing Conditions for Bicyclists	3
Existing Pedestrian Facilities	6
Existing Pedestrian Conditions	7
Gap and Barrier Analysis	12
Collision Analysis	15
Facilities Proposed in Previous Plans	17

LIST OF FIGURES

Figure 1 Existing Bicycle Facilities	2
Figure 2 Level of Traffic Stress	5
Figure 3 Sidewalk Facilities on Arterials	6
Figure 4 Uncontrolled Crosswalks	9
Figure 5 Signalized Intersections & Pedestrian Signal Equipment	10
Figure 6 Existing Grade-Separated Crossings	11
Figure 7 Gap and Barrier Analysis	14
Figure 8 Bicycle and Pedestrian Collisions	16
Figure 9 Bicycle and Pedestrian Facilities Proposed in Previous Plans	19
Figure 10 Capital Improvement Projects	20



EXISTING BIKEWAYS AND TRAILS

Lone Tree has several shared use paths, bike lanes, and unpaved trails; however, many of these existing bikeways lack connectivity to other bikeways in the system. There are four primary shared use paths or unpaved trails in Lone Tree that provide regional connectivity. These regional shared use paths and trails include:

1. Centennial Trail – The Centennial Trail is a shared use path that passes through Lone Tree in an east-west direction along Colorado State Highway 470. The Centennial Trail provides connections to the Cherry Creek Trail to the east and the Platte River Trail, the Highline Canal trail, Chatfield State Park, and Deer Creek Canyon Park to the west.
2. Willow Creek Trail – The Willow Creek Trail runs north-south through the center of Lone Tree. Within Lone Tree, portions of the Willow Creek Trail are built to a shared use path standard and other portions consist of unpaved trail. The Willow Creek Trail provides a connection to the High Line Canal Trail to the north and Prairie Sky Park, the Lone Tree Recreation Center and the East/West Trail to the south.
3. Wildcat Trail – The Wildcat Trail is an unpaved trail that runs north-south along Lone Tree’s western boundary. This trail begins at Quebec Street to the north and intersects with the East/West Trail to the south.
4. East/West Trail – As its name suggests, the East/West Trail is an unpaved trail that provides an east-west connection through the southern portion of the City. The trail starts at Redstone Park in Highlands Ranch and extends through Bluffs Regional Park winding eastward towards RidgeGate Parkway. Plans to extend this trail to the east under Interstate 25 are currently being developed.

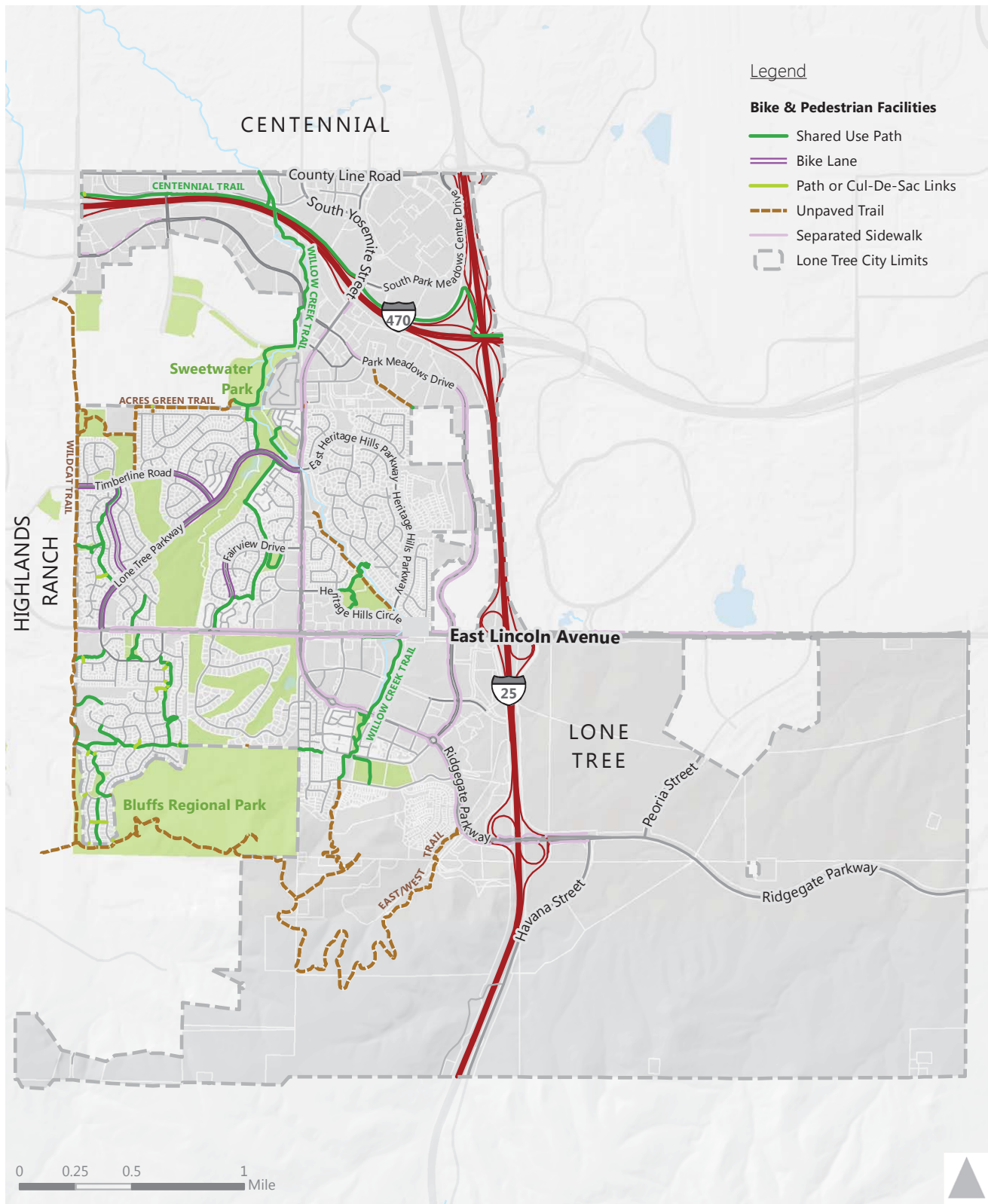
There are also a number of community and local shared use paths or trails that provide connections to the four regional trails, neighborhoods and commercial districts.

Four streets in Lone Tree have dedicated bike lanes. Streets with marked bike lanes include Timberline Road, Ptarmigan Trail, Fairview Drive, and Lone Tree Parkway from Lincoln Avenue to Yosemite Street. Timberline Road and Lone Tree Parkway are two lane collectors with raised medians and Ptarmigan Trail and Fairview Drive are local roads. The bike lanes are separated from the adjacent travel lane by a white stripe.

Figure 1 shows the locations of existing shared use paths, bike lanes, and unpaved trails in Lone Tree.



Figure 1. Existing Bicycle Facilities



Existing and Proposed Bikeways
Lone Tree Walk & Wheel



EXISTING CONDITIONS FOR BICYCLISTS

Several analyses were conducted to evaluate the comfort and safety of existing bikeways in Lone Tree including a Level of Traffic Stress (LTS) analysis, accident analysis, and facility use analysis.

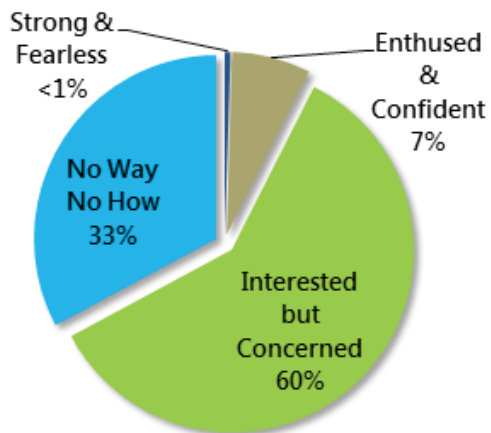
Level of Traffic Stress (LTS)

Level of Traffic Stress (LTS) is a methodology summarized in *Low-Stress Bicycling and Network Connectivity* (Mekuria, Furth, and Nixon, 2012) for classifying bikeways into four categories by the amount of stress that they impose on bicyclists, with LTS 1 being the lowest-stress bicycling environment and LTS 4 being the highest-stress bicycling environment. The LTS corresponds directly to the bicyclist types originally defined by Portland, Oregon’s Bicycle Coordinator, Roger Geller:

- “Strong and Fearless” bicyclists represent less than 0.5 percent of the population; bicycling is a strong part of their identity and they are generally undeterred by poor roadway conditions. This group will tolerate LTS 4.
- “Enthusied and Confident” bicyclists (about 7 percent of the population) are comfortable sharing the roadway with automobile traffic, but prefer to do so operating on their own facilities; they appreciate bike lanes and bike boulevards and will tolerate LTS 3.
- The “Interested but Concerned” group represents the vast majority of the population (60 percent), who are curious about bicycling and enjoy riding a bicycle, but are afraid to ride in the presence of motor vehicles. Mekuria et al. further divide the “Interested but Concerned” group into two subgroups:
 - Most adults, who will tolerate LTS 2
 - Children trained to safely cross intersections, who will tolerate LTS 1
- The “No Way, No How” group is currently not interested in bicycling at all due to inability or lack of interest, regardless of the facilities provided. They represent approximately 33 percent of the population.

The chart below represents the percentage of the United States population that falls into each LTS group. The “Interested but Concerned” group is the largest. Significantly increasing bicycle mode share and recreational bicycling opportunities requires considering the needs and characteristics of this group.

The LTS analysis consists of evaluating various roadway characteristics including: street classification, number of lanes, prevailing speed



or speed limit, presence of adjacent parking, and presence of median or center line, along with characteristics about bikeways when they are present. The comfort level for a bicyclist can be estimated based on the combination of street characteristics. By default, all separated bikeways are assigned LTS 1.

Level of Traffic Stress is a “weakest link” metric where the LTS value for an entire segment is considered to be the worst score of any portion of that segment. For example, if a segment is ten blocks long and eight of the ten blocks are LTS 2, one block is LTS 1, and one block is LTS 3, the entire segment is considered to be LTS 3. This is because a bicyclist wishing to travel the length of the segment who can only tolerate LTS 2 could not travel the entire segment; the block that is LTS 3 would present a barrier to this bicyclist, and only bicyclists who tolerate LTS 3 could ride the entire segment.

The LTS analysis is useful to identify key barriers in the network and determine what type of facility is most appropriate to achieve a LTS 1 or 2 and thereby attract the “Interested but Concerned” bicyclists.

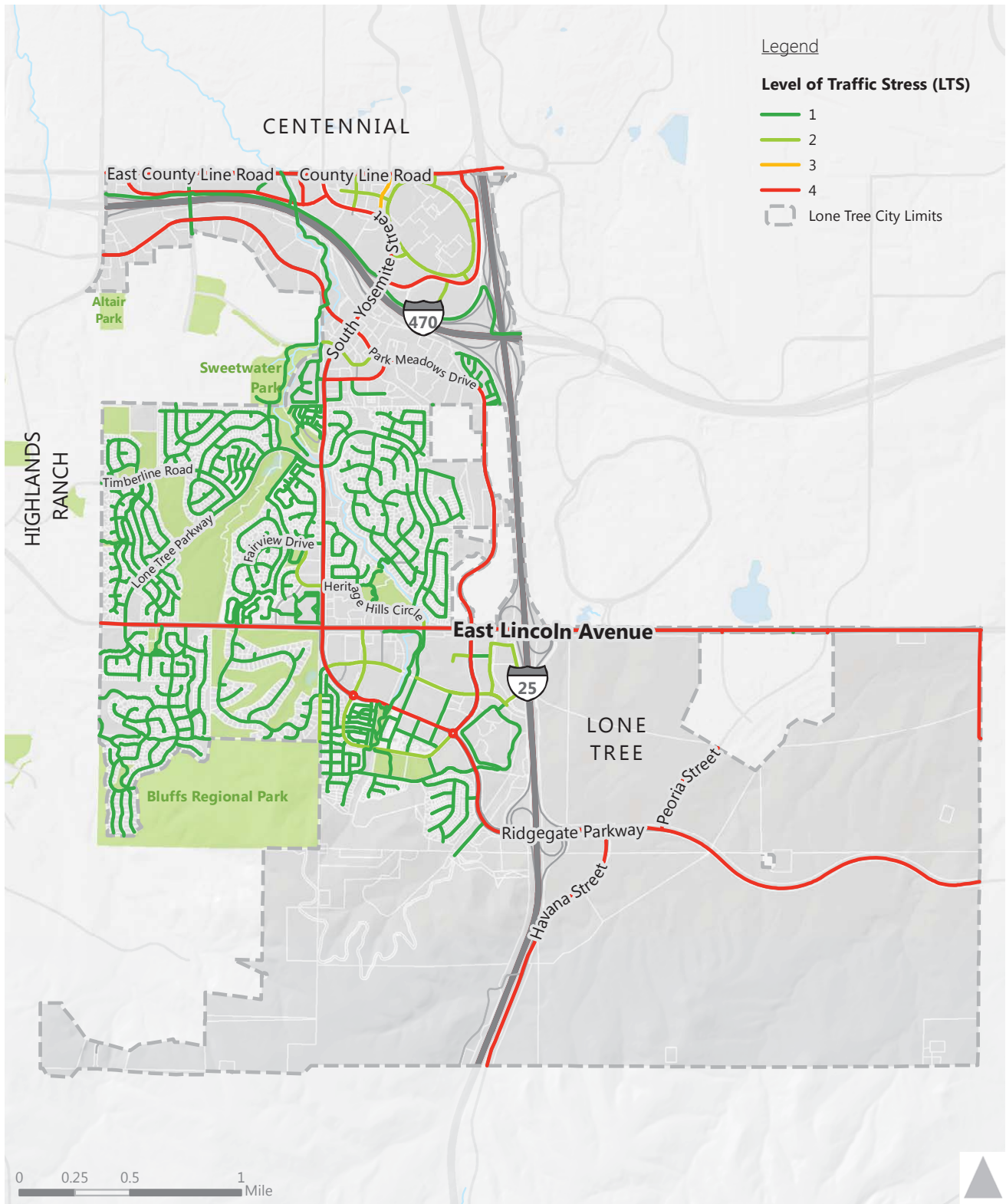
Figure 2 shows the LTS for roadways in Lone

Tree. With the exception of the major arterials in Lone Tree, most of the roadway network is LTS 1 or 2. Major arterials with LTS 4 include: County Line Road, Park Meadows Drive, Lincoln Avenue, Yosemite Street, RidgeGate Parkway, and Havana Street.

The LTS analysis revealed that though Lone Tree has low-stress bikeways within neighborhoods, the LTS 4 arterials create major barriers that separate neighborhoods from one another and discourage many people from bicycling in Lone Tree.



Figure 2. Level of Traffic Stress



Level of Traffic Stress (LTS)

Lone Tree Walk & Wheel



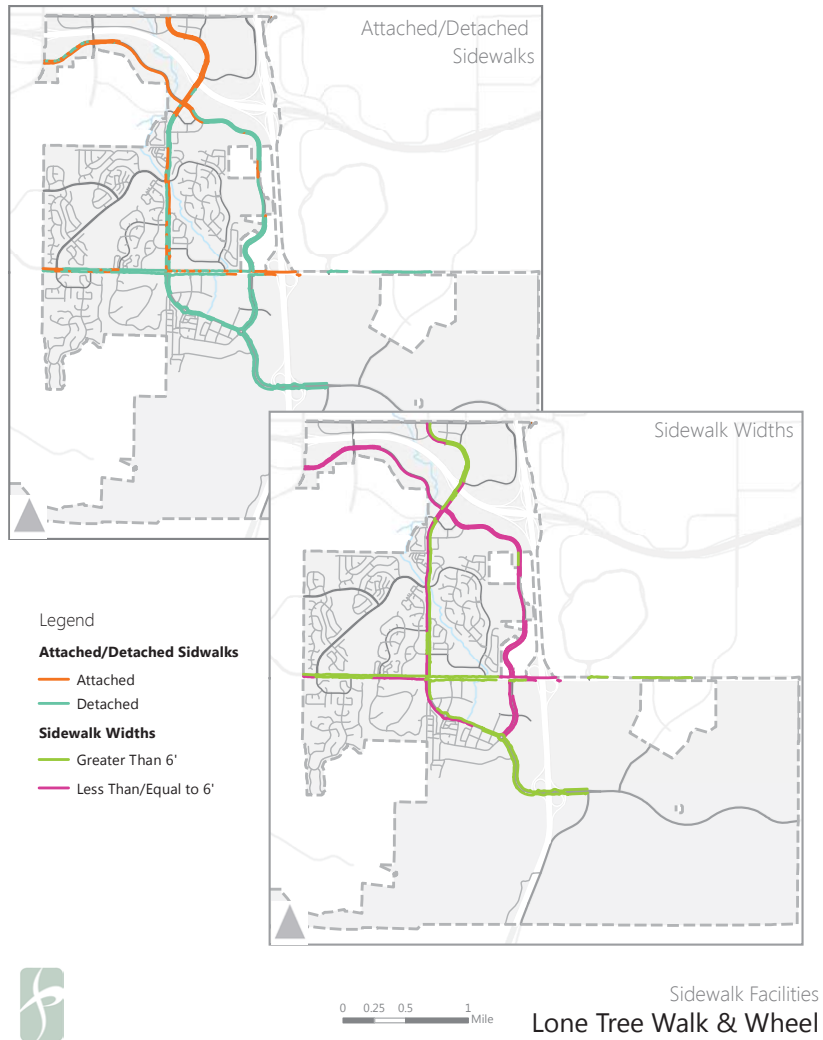


EXISTING PEDESTRIAN FACILITIES

Pedestrians, along with bicyclists, use the extensive trail system in Lone Tree as well as shared-use paths and sidewalks. These facilities are pictured in the map in Figure 1.

The four regional trails in Lone Tree provide for extended walks and hikes, and the shared-use paths and wide sidewalks provide for shorter walks to destinations and throughout the neighborhoods. Figure 3 shows sidewalk types and width on arterials in Lone Tree.

Figure 3. Sidewalk Facilities on Arterials





EXISTING PEDESTRIAN CONDITIONS

Conditions for walking in Lone Tree vary significantly by facility type. The quality and characteristics of the facility help to define the pedestrian experience.

Trails

Generally, the trails in Lone Tree are well-maintained and provide a comfortable environment for pedestrians. Lone Tree offers both paved and unpaved trails. The Wildcat Trail, the East/West Trail, and portions of the Willow Creek Trail in Lone Tree are unpaved; the Centennial Trail and portions of the Willow Creek Trail are paved.

Sidewalks

Sidewalk conditions vary depending on roadway type and neighborhood. With the exception of the northern portions of Park Meadows Drive

and Yosemite Street, the majority of arterials in Lone Tree feature detached sidewalks. Detached sidewalks are characterized by the presence of a buffer, usually a landscaping strip, which separates pedestrians from the roadway. The landscaping strip enhances the pedestrian environment and puts space between the pedestrian and moving motor vehicles, making the pedestrian feel more comfortable. Sidewalks adjacent to the curb are called attached sidewalks. Some portions of the sidewalks located on arterials are attached, but are usually greater than six feet wide. Spots along the western portion of Lincoln Avenue lose the landscaping buffer, but at a width greater than six feet provide relative comfort to pedestrians. Figure 3 shows sidewalk classifications and widths.

Shared-use paths are defined as being greater than eight feet wide. Shared-use paths typically provide a comfortable environment to pedestrians.

The vast majority of local and collector streets in Lone Tree have sidewalks. Most residential areas feature attached sidewalks with the exception of the newer developments on the south side of town near Ridgeway Parkway that have detached sidewalks. Sidewalks in most residential neighborhoods range from four to six feet wide. The gated community of Heritage Estates built along the Lone Tree Golf Course, and most of the



With no sidewalk present, pedestrians walk alongside this residential road as indicated by the social path on the right side of the picture.

City's apartment complexes, do not have sidewalks. Some shopping centers and office complexes also lack internal sidewalks.

Crossing Facilities

According to the Model Traffic Code for Colorado (Colorado Department of Transportation, 2010), a crosswalk is defined as follows:

"Crosswalk" means that portion of a roadway ordinarily included within the prolongation or connection of the lateral lines of sidewalks at intersections or any portion of a roadway distinctly indicated for pedestrian crossing by lines or other marking on the surface.

The City of Lone Tree has hundreds of unmarked crosswalks at intersections throughout the City. Additionally, the City of Lone Tree has marked several controlled crosswalks (either via a traffic signal or a stop sign) and uncontrolled crosswalks. At an uncontrolled crosswalk, drivers must yield right-of-way to pedestrians.

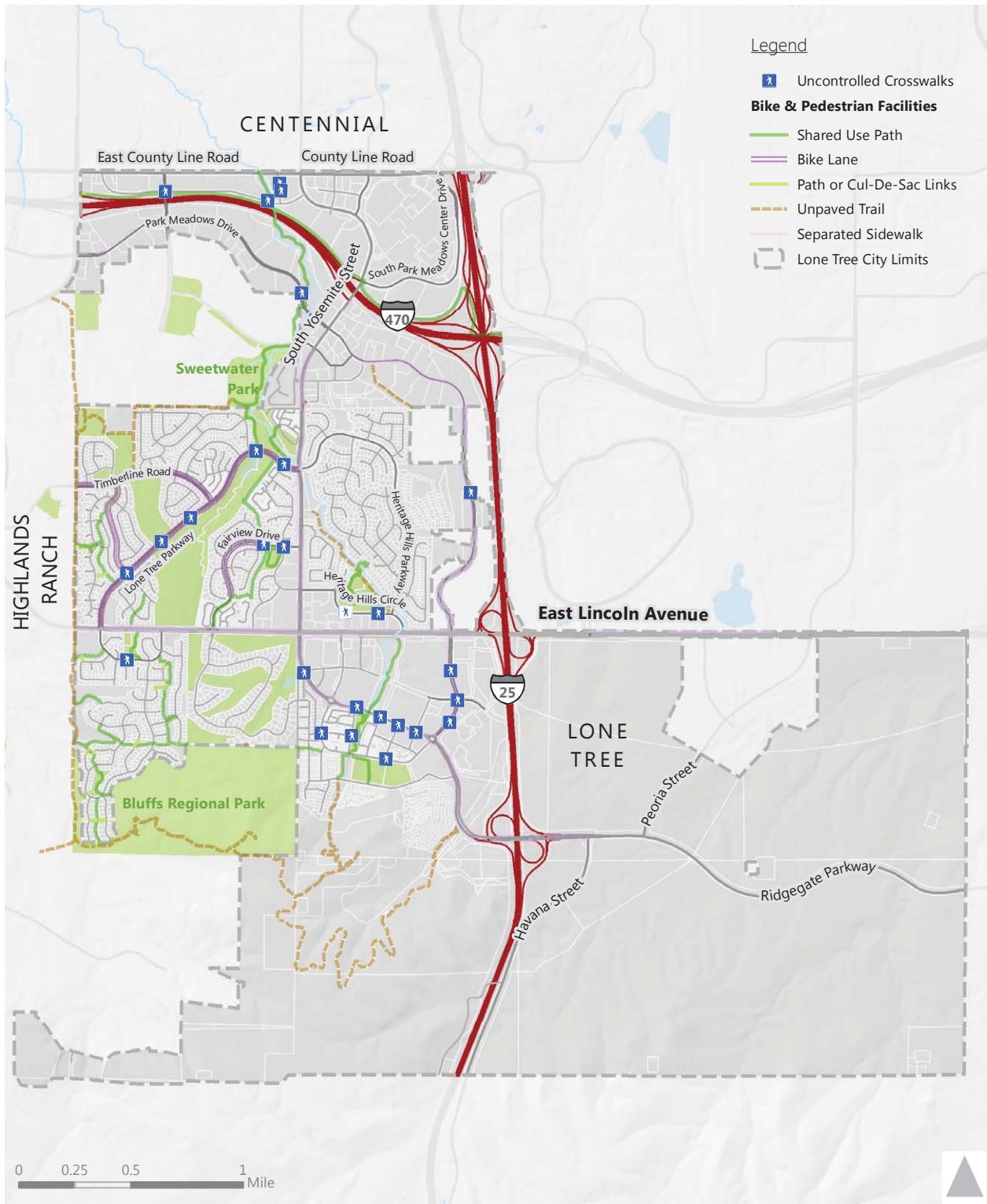
Marked uncontrolled crosswalks are most common on residential and collector streets in Lone Tree, although some do exist on arterial streets. Figure

4 shows marked uncontrolled crosswalks in Lone Tree.

Signalized intersections in Lone Tree are generally equipped with pedestrian signal equipment. A pedestrian signal provides a safer way for pedestrians to cross the street at signalized intersections. The pedestrian signal, when activated by a pedestrian pushing a detector button, provides time for the pedestrian to enter the street during the steady "WALK" and to finish crossing the street during the flashing "DON'T WALK" signal. All of the pedestrian signals in Lone Tree are countdown pedestrian signals with flashing numbers that count down the number of seconds remaining until the end of the pedestrian cycle. Countdown signals are particularly beneficial for wide streets or if used by a large number of people with mobility challenges. Figure 5 shows the locations and types of pedestrian signal equipment in Lone Tree.

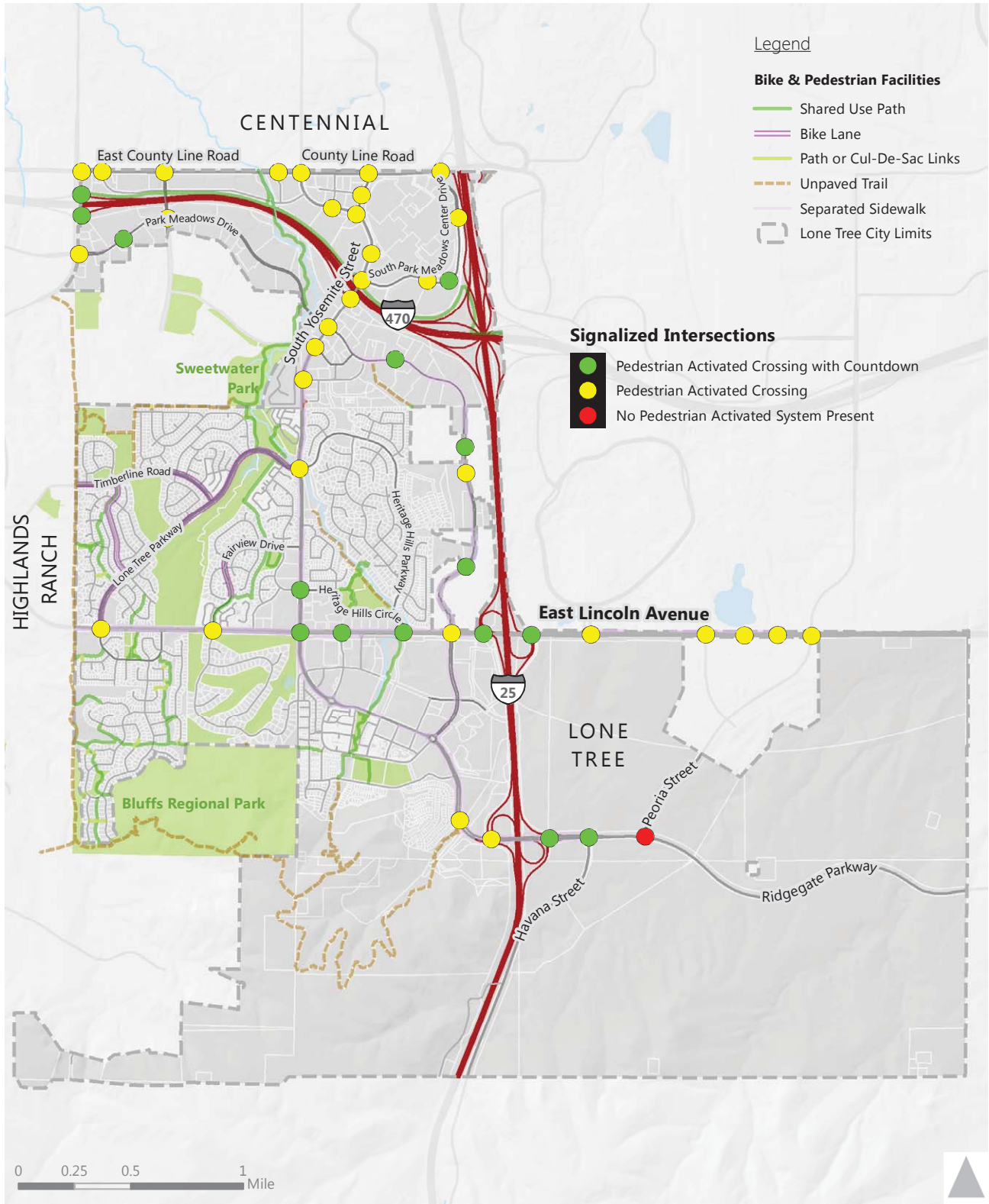
There are seven grade-separated crossings in Lone Tree as depicted in Figure 6. Grade-separated crossings are used to accommodate pedestrian crossings at hazardous locations

Figure 4. Uncontrolled Crosswalks



Uncontrolled Crosswalks
Lone Tree Walk & Wheel

Figure 5. Signalized Intersections & Pedestrian Signal Equipment



Signalized Intersections & Pedestrian Signal Equipment
Lone Tree Walk & Wheel

Figure 6. Existing Grade-Separated Crossings



Existing Grade-Separated Crossings
Lone Tree Walk & Wheel





GAP AND BARRIER ANALYSIS

A traditional gap and barrier analysis identifies locations that present significant problems or challenges to the development of a comprehensive pedestrian and bicycle system. To augment the traditional gap and barrier analysis, a parcel-level analysis was performed to identify relative connectivity for all developed parcels within the City of Lone Tree. Using the combined network of City roads, paved multi-use trails, and cul-de-sac links, analyses were completed measuring and quantifying the distance and accessibility for both walking and bicycling. Connectivity was calculated by taking a ratio of the direct (“Crow’s Flight”) distance and the walking or biking distance on the road network between each parcel. The connectivity was further refined by adding in a measure of the number of parcels that can be reached from any other parcel. A distance barrier was set for each analysis to limit the distance most people would walk or bike within 15 minutes. The bikeability analysis was limited to roadways with a Level of Traffic Stress score of 1 or 2 to account for the majority of the population which would avoid

high-stress bikeways. This analysis results in a walkability and bikeability score that demonstrates neighborhoods and areas that have high, medium, or low connectivity. The resulting map shown in Figure 7 helps identify areas that are poorly connected to other areas within the city and will be utilized to help identify recommendations.

Bikeability Score

Figure 7 demonstrates the breakdown of the scores as a percentage based on the area and number of parcels in each category. The majority of the parcels in the low and very low categories are concentrated in the following areas:

1. Commercial properties in the northern section of the city including the Park Meadows Mall.
2. Residential areas east of the Lone Tree Golf Club and west of Yosemite Street and residential areas south of Lincoln Avenue.

The bikeability score demonstrates some of the same themes as the walkability score with the exception of the cul-de-sac connectivity and the connectivity with the commercial properties in the southeast area of the city. This difference is chiefly due to the greater distance that a person

can bike in 15 minutes, versus walk in that same time period. The commercial properties in the northern area of the city are still shown as having poor connectivity because of limited access to bike-friendly routes and the E-470 barrier. The residential areas from item two above exhibit lower connectivity as they are fairly isolated from network access points and other parcel locations in comparison to some of the other residential areas.

Walkability Score

Figure 7 demonstrates the breakdown of the scores as a percentage based on the area and number of parcels within each category. The majority of the parcels in the low and very low categories are concentrated in the following areas:

1. Commercial properties in the northern section of the city including the Park Meadows Mall.
2. Interior parcels near the Lone Tree Golf Club.
3. Commercial properties including the Sky Ridge Medical Center and residential areas in eastern Lone Tree south of Lincoln Avenue, west of I-25, and southeast of Ridgegate Parkway.

Many commercial properties in northern Lone Tree and south of Lincoln Avenue exhibit poor pedestrian connectivity chiefly due to their distance from the major residential areas within the city and limited access points. Parcels located on cul-de-sacs without links to adjacent roadways also exhibit poor connectivity as is seen throughout the city.

Barriers

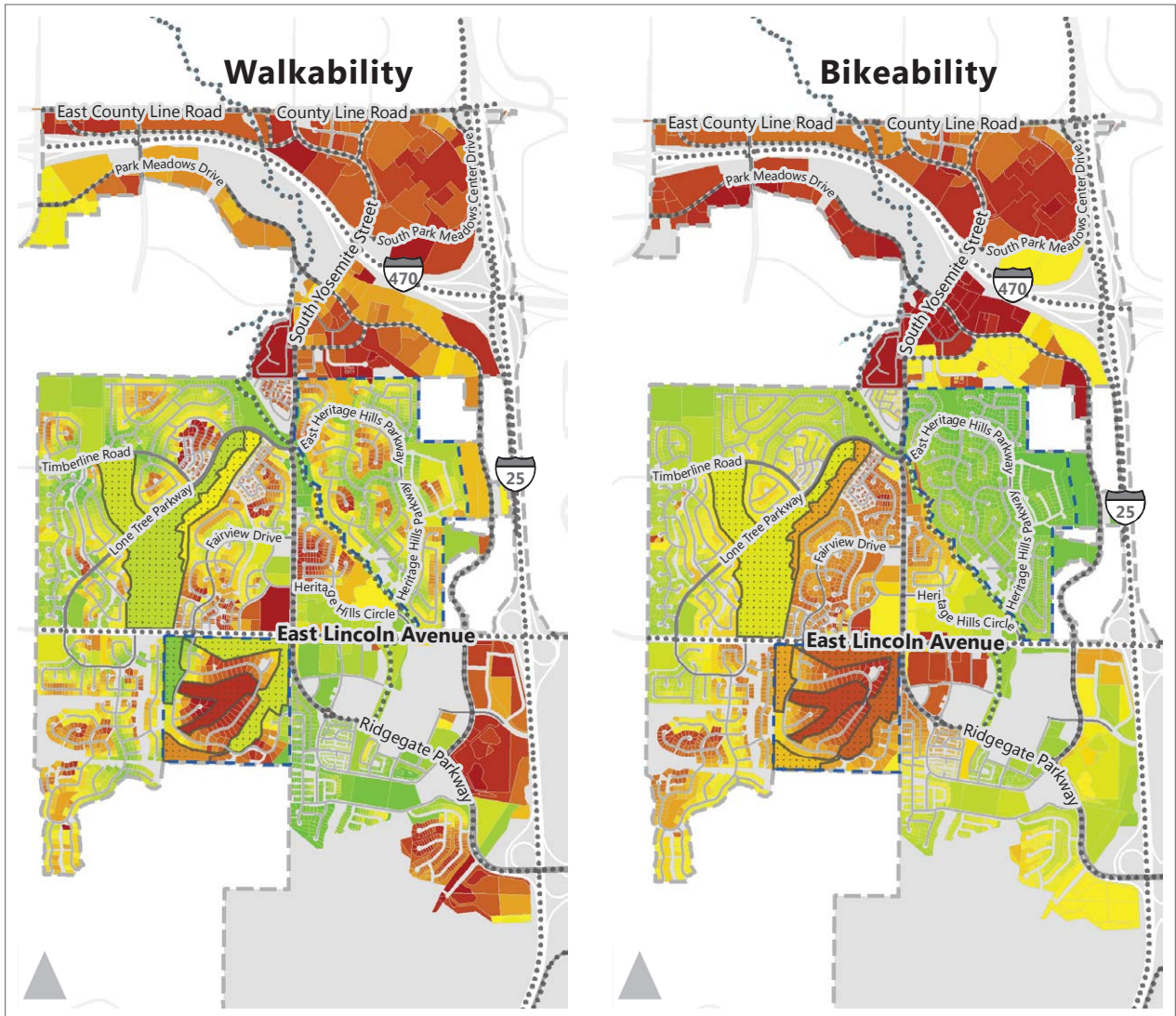
Based on this analysis, several barriers exist to walking in Lone Tree:

- Freeways including I-25 and E-470 and their associated interchanges; the light rail tracks are a barrier that pose similar challenges as I-25
- Busy roadways including Park Meadows Drive, Yosemite Street, Lincoln Avenue, and RidgeGate Parkway
- Waterways in Lone Tree, including Willow Creek
- Roundabouts
- Disconnected roadways



Park Meadows Mall is poorly connected to other areas of the City and contains low bikeability and walkability scores.

Figure 7. Gap and Barrier Analysis

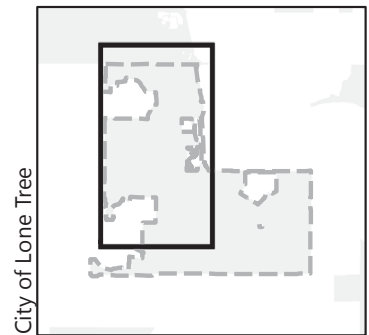


0 0.25 0.5 1 Mile

Legend

Walkability/Bikeability Score

- Very Low
 - Low
 - Medium
 - High
 - Very High
- Linear Barriers
 - Area Barriers
 - Gated Community
 - Vacant Land or Right-of-Way



Gap and Barrier Analysis
Lone Tree Walk & Wheel



COLLISION ANALYSIS

Vehicle-bicyclist and vehicle-pedestrian collision reports from January 2009 through July 2014 were provided by the Lone Tree Police Department. The accidents were grouped by collision type and mapped to identify locations with repeat collisions.

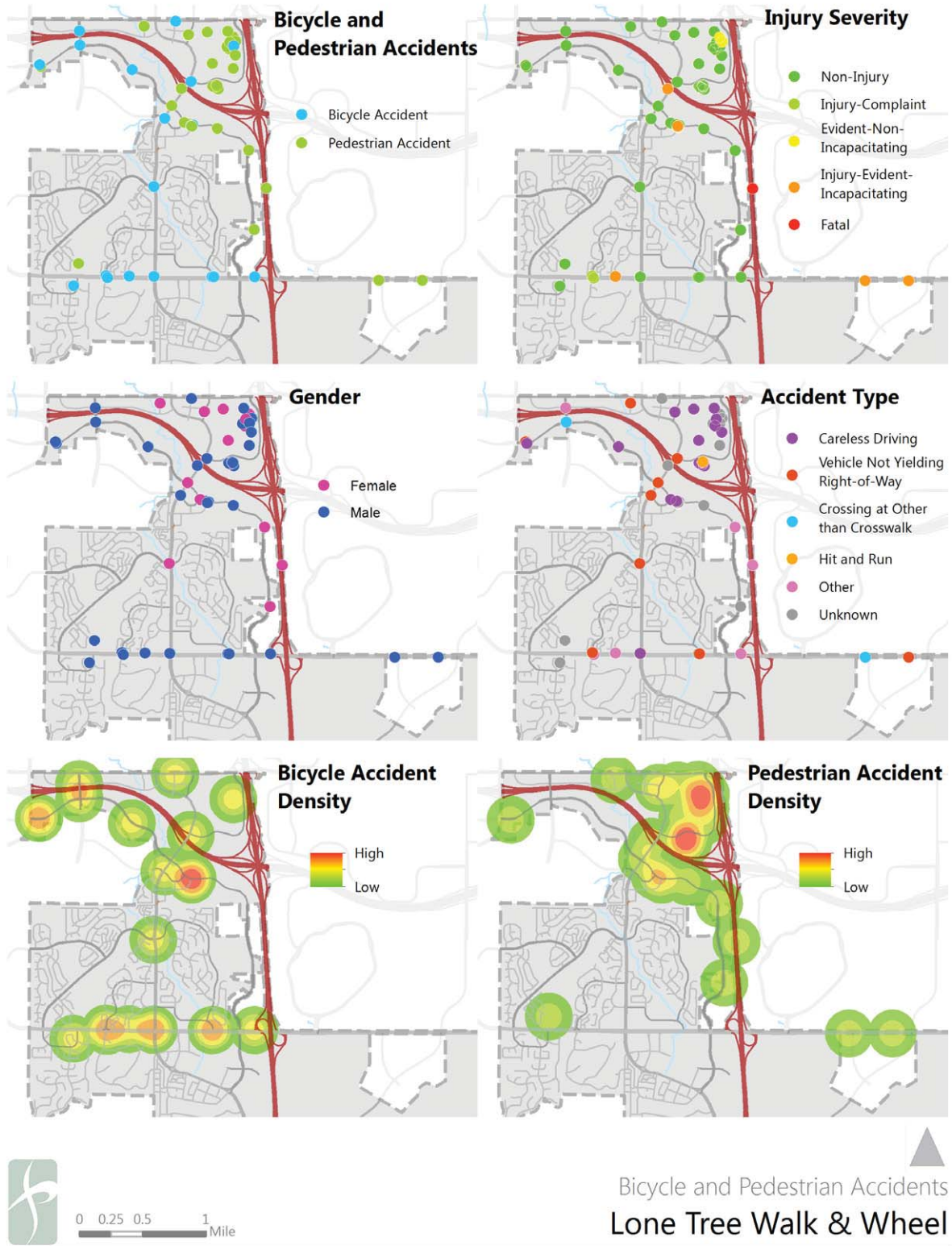
Vehicle-bicyclist collisions occur throughout Lone Tree, especially on busier roadways such as Park Meadows Drive, Yosemite Street, and Lincoln Avenue. Vehicle-pedestrian collision clusters are observed in the Park Meadows Mall parking lot, in other retail parking lots along Park Meadows Center Drive, and at various locations along Park Meadows Drive. The Park Meadows Drive/Kimmer Drive intersection, near the Lone Tree Entertainment District, has a high density of both vehicle-bicyclist and vehicle-pedestrian collisions as shown in Figure 8.

Most vehicle-bicyclist and vehicle-pedestrian collisions were either non-injury collisions or resulted in minor injuries, such as complaint of pain. The map in the top right of Figure 8 shows injury severity by location. Collisions of greater severity typically occur on higher speed roadways. Collisions with incapacitating injuries occurred on Park Meadows Drive, Yosemite Street, and Lincoln Avenue. The one vehicle-pedestrian fatality observed on I-25 was a suicide.

The most common types of vehicle-bicyclist and pedestrian-vehicle collisions during the analysis period were careless driving and vehicles not yielding the right-of-way to bicyclists or pedestrians. The middle right map in Figure 8 shows accident type by location for both bicycle and pedestrian collisions.



Figure 8. Bicycle and Pedestrian Collisions





FACILITIES PROPOSED IN PREVIOUS PLANS

The following plans were reviewed to identify any proposed bicycle facilities or recommendations to improve conditions for bicycling and walking:

1. Lone Tree Plaza Vision Book (2013)
2. South I-25 Urban Corridor Transportation Management Association Last One-Half Mile Transportation Solutions (2012)
3. Lone Tree Trail Master Plan (2008)
4. Lone Tree Parks, Trails and Recreation Master Plan (2007)
5. Douglas County 2030 Transportation Plan (2009)
6. Lone Tree 2015 Capital Improvement Program (2014)

Additionally, RTD plans for FasTracks expansion were reviewed along with the City's proposed circulator shuttle

The Lone Tree Plaza Vision Book identified pedestrian-related improvements near the Lone Tree Entertainment District. Proposed facilities are identified in Figure 9.

The South I-25 Urban Corridor Transportation Management Association Last One-Half Mile Transportation Solutions identified several bicyclist- and pedestrian-related improvements near the Lincoln Light Rail station. These proposed improvements are shown on the map in Figure 9.

The Lone Tree Trail Master Plan proposed several new paved and unpaved off-street trails and shared use paths. The Trail Master Plan also recommended the following grade separations:

- Construct Yosemite Street grade separation for the Centennial Trail, near that Yosemite Street/ Park Meadows Center Drive intersection
- Construct grade separation for the Wildcat Trail at Lincoln Avenue
- Construct grade separation for the Willow Creek Trail at Lincoln Avenue, east of Heritage Hills Circle

Proposed additions to the trail system are shown in Figure 9.

The Lone Tree Parks, Trails and Recreation Master Plan focuses on recreational programming and does not contain relevant recommendations for transportation improvements.



THE PROMENADE

Farmers' Lane



Farmers' Lane proposed in Lone Tree Vision Book provides for a pedestrian-centered promenade.

The Douglas County 2030 Transportation Plan proposed the following roadway capacity enhancement projects in Lone Tree, by phase:

- Lincoln Ave from Peoria to Chambers Rd: Widening from 4-lane to 6-lane major arterial (including bridges) (2020)
- Ridegate Pkwy/Mainstreet from I-25 Meridian Village Pkwy Widening to 4-lane major arterial (2030)
- Mainstreet Ave from Meridian Village Pkwy to Chambers Rd Widening 2-lane collector to 4-lane major arterial (2030)

The Plan also contains a Bicycle Vision Plan that proposes future off-street trails and bicycle lanes and identifies areas requiring further study. An off-street trail facility was proposed and constructed on Lincoln Ave. The facility consists of a separated sidewalk that becomes discontinuous as it approaches I-25. Lincoln Ave. was also identified as an area that requires further study. The Bicycle Vision Plan also identifies the I-25 corridor in Lone Tree as an area for further study.

Lastly, the City of Lone Tree maintains a Capital Improvement Plan which identifies capital projects such as replacement or construction of bridges/culverts, paving and widening of existing roadways and construction of some new regional roadway arterials. Current Capital Improvement Projects

(CIPs) identified for 2014 through 2017 are shown on the map in Figure 10. Grant or City funding has been identified for projects listed in the CIP.

Southeast Rail Extension

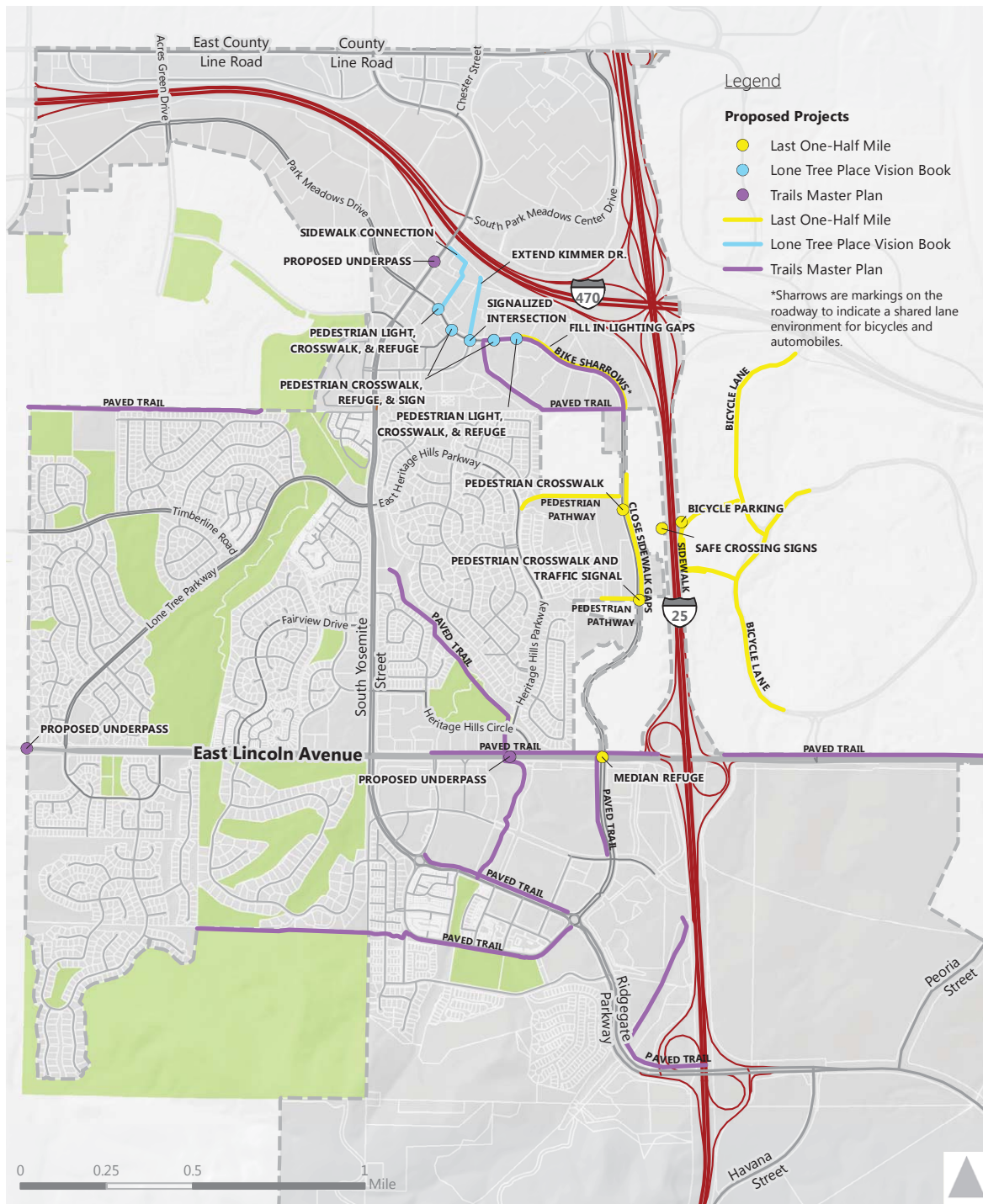
The Southeast Rail Extension extends light rail transit service 2.3 miles from the existing Lincoln Station to and end of line station south of RidgeGate Parkway. The expansion encompasses three new stations in Lone Tree: 1) Sky Ridge Medical Center; 2) Lone Tree City Center; and 3) RidgeGate Parkway and will include connections to sidewalks systems and amenities such as bicycle parking.

Circulator Shuttle

A circulator shuttle began service in Lone Tree in September 2014. The shuttle will provide connections from the Lincoln Light Rail Station to employer and recreational amenities. Stops include: the Lone Tree Entertainment District, Kasier Permanente, ParkRidge Corporate Center, Charles Schwab Campus and the Sky Ridge Medical Center.

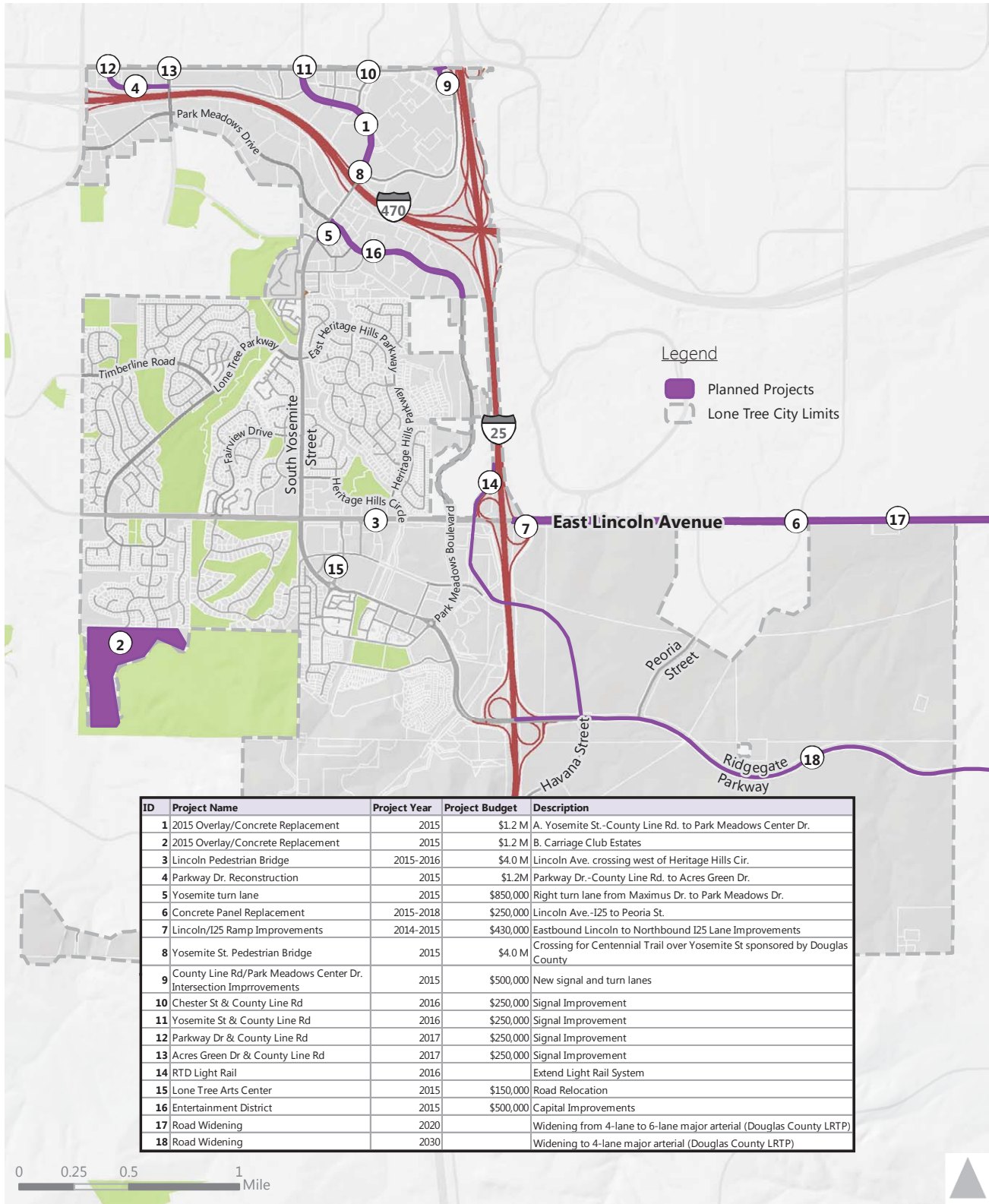


Figure 9. Bicycle and Pedestrian Facilities Proposed in Previous Plans



Bicycle & Pedestrian Projects
Lone Tree Walk & Wheel

Figure 10. Capital Improvement Projects



ID	Project Name	Project Year	Project Budget	Description
1	2015 Overlay/Concrete Replacement	2015	\$1.2 M	A. Yosemite St.-County Line Rd. to Park Meadows Center Dr.
2	2015 Overlay/Concrete Replacement	2015	\$1.2 M	B. Carriage Club Estates
3	Lincoln Pedestrian Bridge	2015-2016	\$4.0 M	Lincoln Ave. crossing west of Heritage Hills Cir.
4	Parkway Dr. Reconstruction	2015	\$1.2M	Parkway Dr.-County Line Rd. to Acres Green Dr.
5	Yosemite turn lane	2015	\$850,000	Right turn lane from Maximus Dr. to Park Meadows Dr.
6	Concrete Panel Replacement	2015-2018	\$250,000	Lincoln Ave.-I25 to Peoria St.
7	Lincoln/I25 Ramp Improvements	2014-2015	\$430,000	Eastbound Lincoln to Northbound I25 Lane Improvements Crossing for Centennial Trail over Yosemite St sponsored by Douglas County
8	Yosemite St. Pedestrian Bridge	2015	\$4.0 M	
9	County Line Rd/Park Meadows Center Dr. Intersection Improvements	2015	\$500,000	New signal and turn lanes
10	Chester St & County Line Rd	2016	\$250,000	Signal Improvement
11	Yosemite St & County Line Rd	2016	\$250,000	Signal Improvement
12	Parkway Dr & County Line Rd	2017	\$250,000	Signal Improvement
13	Acres Green Dr & County Line Rd	2017	\$250,000	Signal Improvement
14	RTD Light Rail	2016		Extend Light Rail System
15	Lone Tree Arts Center	2015	\$150,000	Road Relocation
16	Entertainment District	2015	\$500,000	Capital Improvements
17	Road Widening	2020		Widening from 4-lane to 6-lane major arterial (Douglas County LRTP)
18	Road Widening	2030		Widening to 4-lane major arterial (Douglas County LRTP)



Capital Improvement Projects
Lone Tree Walk & Wheel



APPENDIX B. OPPORTUNITIES AND CONSTRAINTS MEMORANDUM

Using the existing conditions analysis and public input we identified opportunities to enhance the comfort, safety, and connectivity of the bicycle and pedestrian network within the City.

Opportunities

Bike Facility Improvements

- Add a bike lane on Ridgeway Parkway.
- Add a bike lane on Havana St.
- Evaluate the potential for a bicycle bypass through the City with a bike lane on Yosemite around Ridgeway Parkway.
- Improve bicycle conditions on arterials with LTS 4: Yosemite St., Yosemite St. at C-470, northwest portion of Park Meadows Dr., County Line Road, Park Meadows Drive, Lincoln Avenue, Yosemite Street, Ridgeway Parkway, and Havana Street.
- Improve bike safety at interchanges: Lincoln and Ridgeway Parkway at I-25 and Yosemite at C-470.
- Install a bike lane on Lincoln (eastbound at a minimum).
- Install vertical separation on bike lanes.
- Reduce the width of the median on Lincoln Ave. to provide for a wide shoulder.

Intersection Crossing Improvements

- Evaluate opportunities to implement pedestrian actuated flashing lights at crosswalks throughout Lone Tree.
- Improve crossing at Lincoln intersection with Fairview Dr. (Fairview Dr. contains on-street bicycle facility).
- Improve crossing at Park Meadows to access Lone Tree Entertainment District.

- Improve crossing at Peoria & Ridgeway Parkway. Signal is already in place here, perhaps a 2 stage turn box?
- Improve crossing at Yosemite at East Heritage Hills Parkway. Bike lane along East Heritage Hill Parkway terminates at Yosemite.
- Improve pedestrian crossing on Ridgeway Parkway at Lincoln.
- Make it easier for bikes and peds to cross Lincoln Ave.
- Numerous pedestrian accidents are occurring at intersections on Lincoln Ave. and Park Meadows Blvd., and Yosemite Street with pedestrian activated crosswalks. Consider upgrading to pedestrian activated crossings with countdowns at these locations.

Trail Crossing Improvements

- Centennial trail at Yosemite St./Park Meadows Center Dr. & Yosemite
- Evaluate 4-way stop warrant on Acres Green at the Centennial Trail crossing.
- Improve crossing at Yosemite at Park Meadows to access Centennial Trail.
- East-West Trail at Ridgeway Parkway
- Willow Creek Trail at Park Meadows Dr.
- Willow Creek Trail at Lincoln

Connections to Destinations

- Better connections to regional trails.
- Connect neighborhoods to one another and to destinations via trails and bikeways.
- Improve access to Centennial trail from Lone Tree. Currently, people cross I-25 at Lincoln Station to access the trail.
- Improve connections to schools.
- Improve connectivity to Park Meadows Mall, the Lone Tree Entertainment District, Lincoln Commons, Cook Creek Pool, and major employment centers such as the Schwab campus, and Sky Ridge Medical Center.
- Improve north-south connectivity
- Improve pedestrian connections to Lincoln Station.
- Make it easier to access Lincoln Station on foot or by bike.
- Make the Centennial Trail contiguous.

Pedestrian Facility Improvements

- Build an underpass for the Willow Creek Trail at Lincoln (two bicycle collisions occurred here).

- Fill sidewalk gaps on arterials: Lincoln east of Park Meadows Dr.
- Improve narrow attached sidewalks on Park Meadows Dr. west of Yosemite St.
- Improve pedestrian access to commercial areas from Lincoln Ave.
- Improve pedestrian facilities on Park Meadows Dr. southeast of Yosemite St.
- Provide a sidewalk on the north bound side of Park Meadows Dr. along the station area.
- Provide continuity of detached sidewalks greater than 6' on Ridgeway Parkway south of Lincoln and evaluate potential for conversion to shared-use path.

Traffic Calming Improvements

- Assess pedestrian safety along Heritage Hills Circle accessing Lone Tree Elementary School.
- Slow speeds on Ridgeway Parkway/Yosemite.
- Slow speeds on North Park Meadows Dr. west of Yosemite.

Constraints

Land Use

Survey respondents picked “destinations are too far” as one of their top reasons for not walking to shopping and other destinations more. While roadways and crossing have the ability to be retrofitted to better accommodate pedestrians, substantially changing land use is very difficult.

Participants also cited lack of a commercial activity or destination as the reason for not walking or biking to more destinations.

Right-of-Way

ROW is very limited on arterials in Lone Tree such as Park Meadows Blvd. limiting opportunities to retrofit Yosemite was widened in 2005 using much of the additional ROW on this roadway.

Some sidewalks are located on private property.

Gated communities or private property, such as the Golf Course trails that are not open to the public disrupt trail connectivity and can impede travel to destinations for bicyclists and walkers.

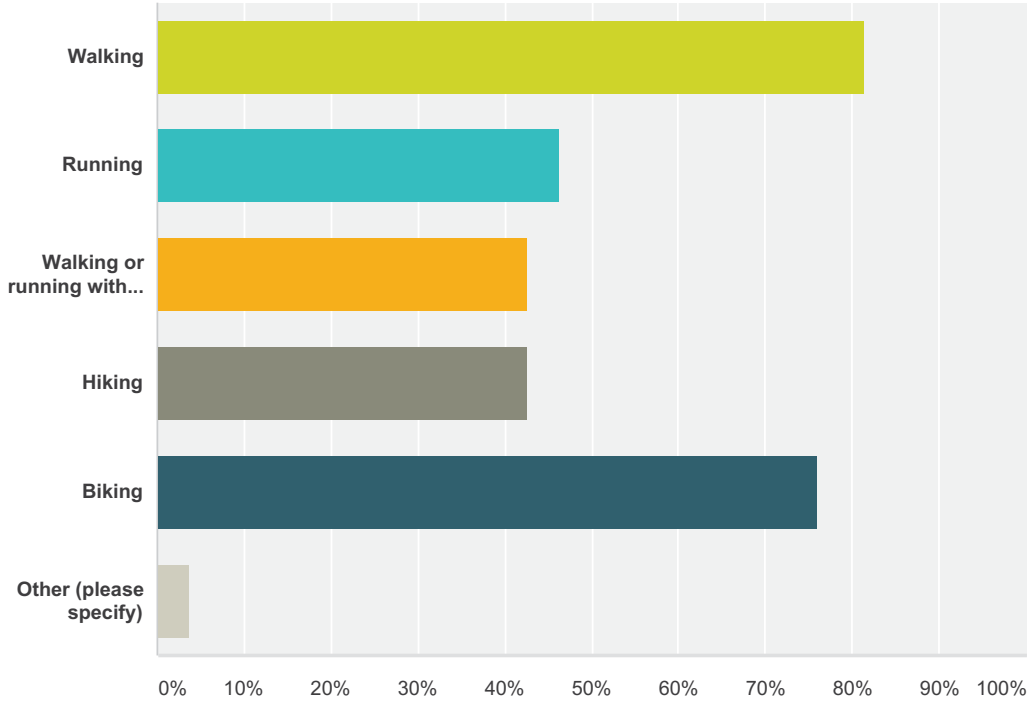
APPENDIX C. SURVEY DATA



Lone Tree Walk and Wheel Survey

Q1 How do you currently use Lone Tree's trails and bikeways, if at all? Select all that apply.

Answered: 54 Skipped: 1

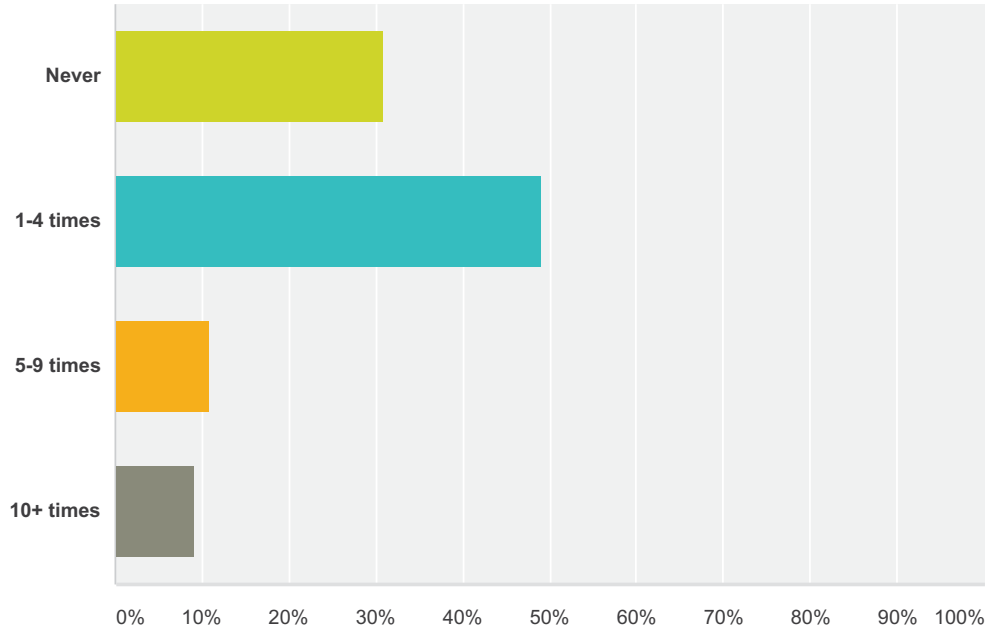


Answer Choices	Responses
Walking	81.48% 44
Running	46.30% 25
Walking or running with dog	42.59% 23
Hiking	42.59% 23
Biking	75.93% 41
Other (please specify)	3.70% 2
Total Respondents: 54	

Lone Tree Walk and Wheel Survey

Q2 In the past week, about how often, if ever, have you or other household members walked on trails or sidewalks for commuting/shopping, etc.?

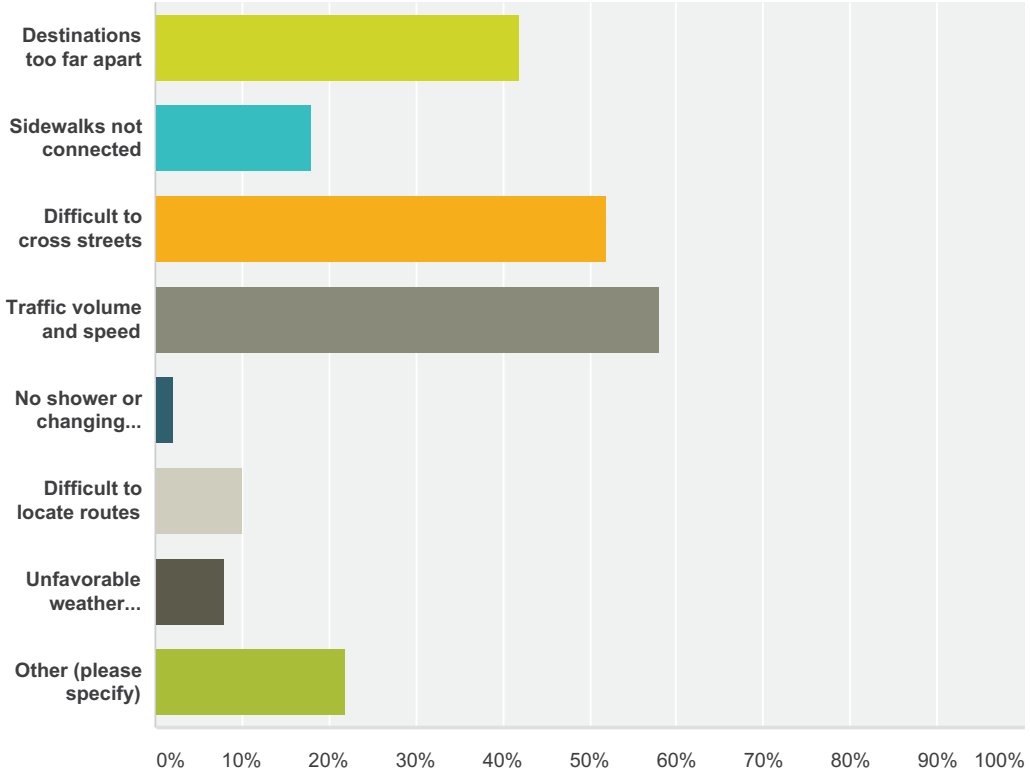
Answered: 55 Skipped: 0



Answer Choices	Responses
Never	30.91% 17
1-4 times	49.09% 27
5-9 times	10.91% 6
10+ times	9.09% 5
Total	55

Q3 What prevents you or other household members from walking on trails or sidewalks for commuting, shopping, etc.? Select all that apply.

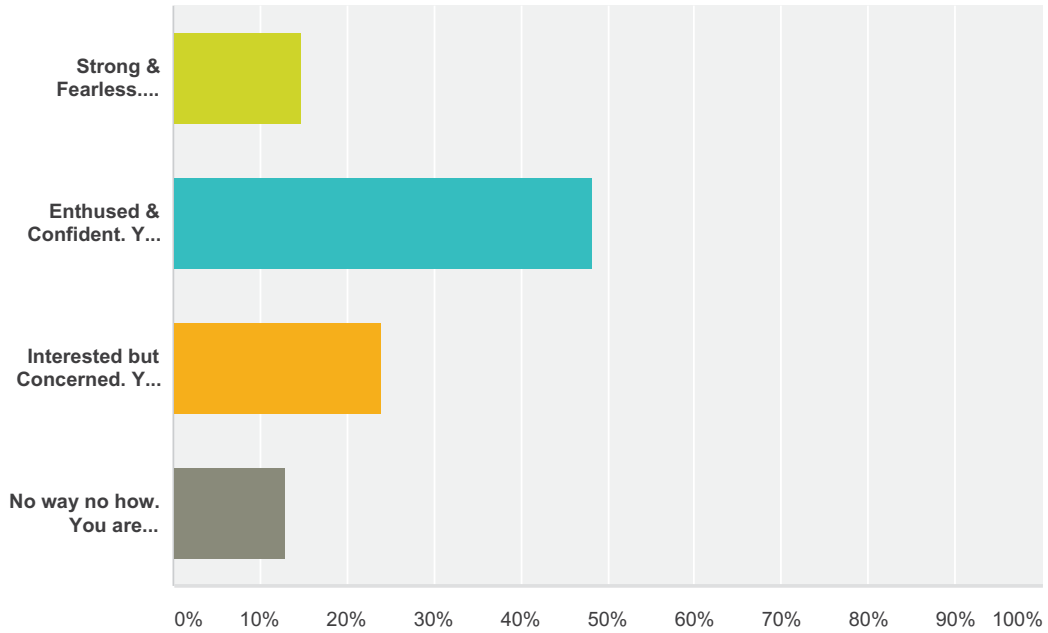
Answered: 50 Skipped: 5



Answer Choices	Responses
Destinations too far apart	42.00% 21
Sidewalks not connected	18.00% 9
Difficult to cross streets	52.00% 26
Traffic volume and speed	58.00% 29
No shower or changing facility at destination	2.00% 1
Difficult to locate routes	10.00% 5
Unfavorable weather conditions	8.00% 4
Other (please specify)	22.00% 11
Total Respondents: 50	

Q4 What type of bicycle rider are you?

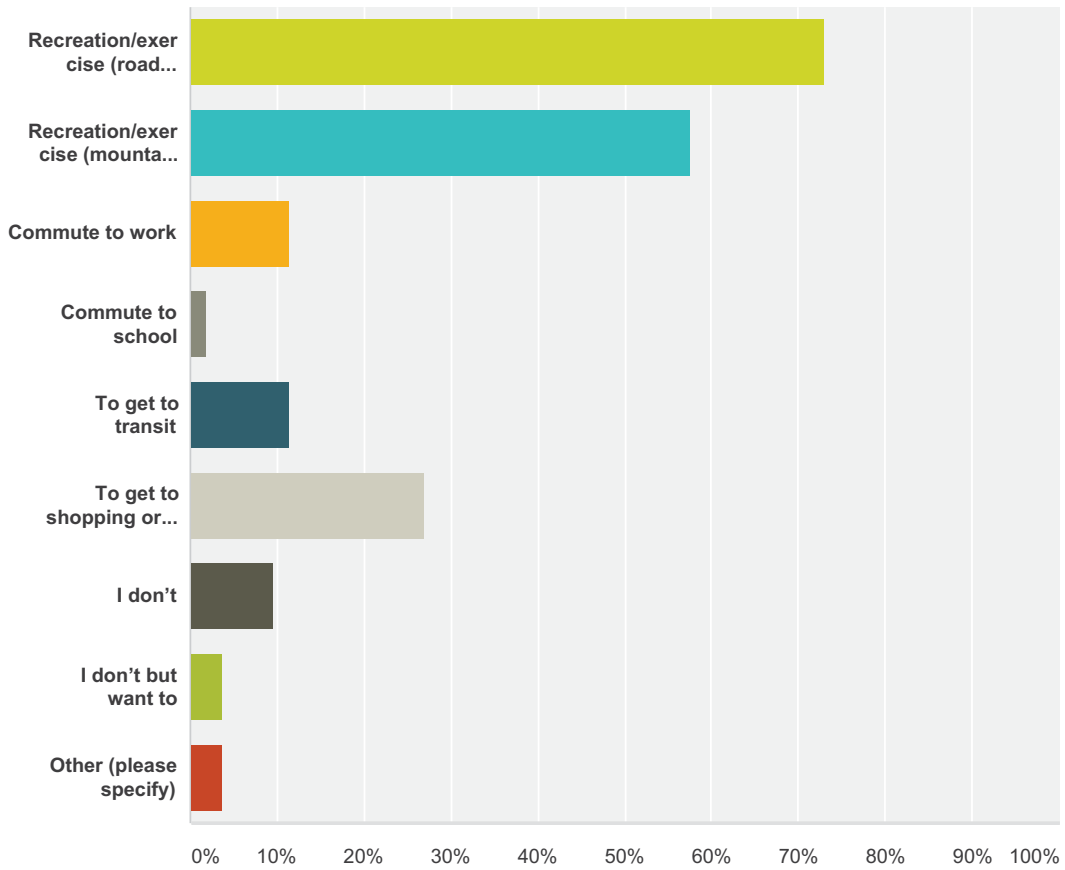
Answered: 54 Skipped: 1



Answer Choices	Responses
Strong & Fearless. Bicycling is a strong part of your identity and you are generally undeterred by poor roadway conditions.	14.81% 8
Enthused & Confident. You are comfortable sharing the roadway with automobile traffic, but prefer to do so operating on bicycle facilities such as bicycle lanes and boulevards.	48.15% 26
Interested but Concerned. You are curious about bicycling and enjoy riding a bicycle, but do not want to ride in the presence of motor vehicles.	24.07% 13
No way no how. You are currently not interested in bicycling at all due to inability or lack of interest, regardless of the facilities provided.	12.96% 7
Total	54

**Q5 If you ride a bicycle, why do you ride?
Select all that apply.**

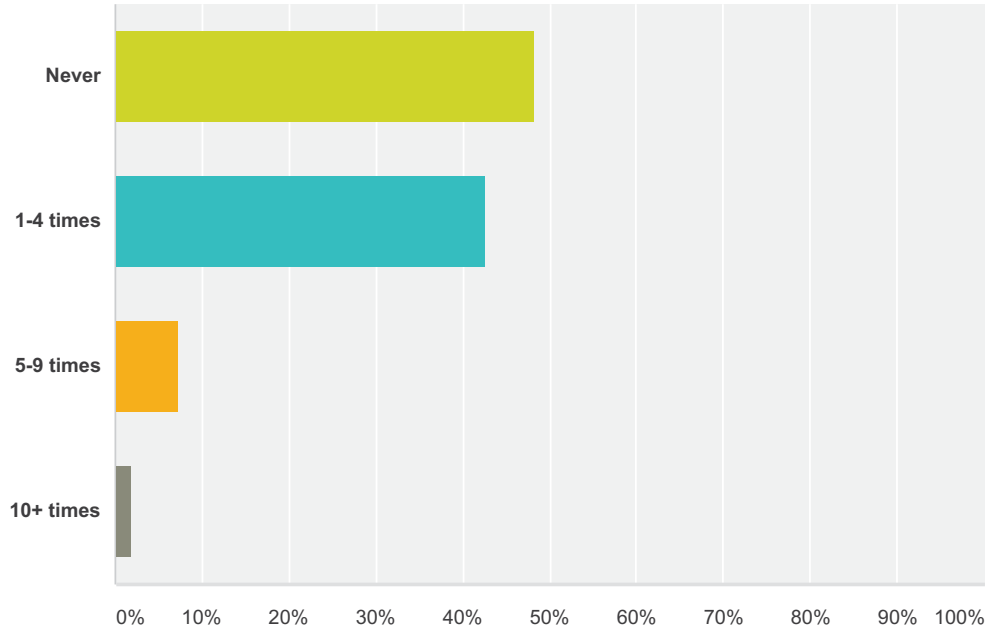
Answered: 52 Skipped: 3



Answer Choices	Responses
Recreation/exercise (road biking)	73.08% 38
Recreation/exercise (mountain biking)	57.69% 30
Commute to work	11.54% 6
Commute to school	1.92% 1
To get to transit	11.54% 6
To get to shopping or other destinations	26.92% 14
I don't	9.62% 5
I don't but want to	3.85% 2
Other (please specify)	3.85% 2
Total Respondents: 52	

Q6 6. In the past week, about how often, if ever, have you or other household members biked on trails or bikeways for commuting/shopping, etc.?

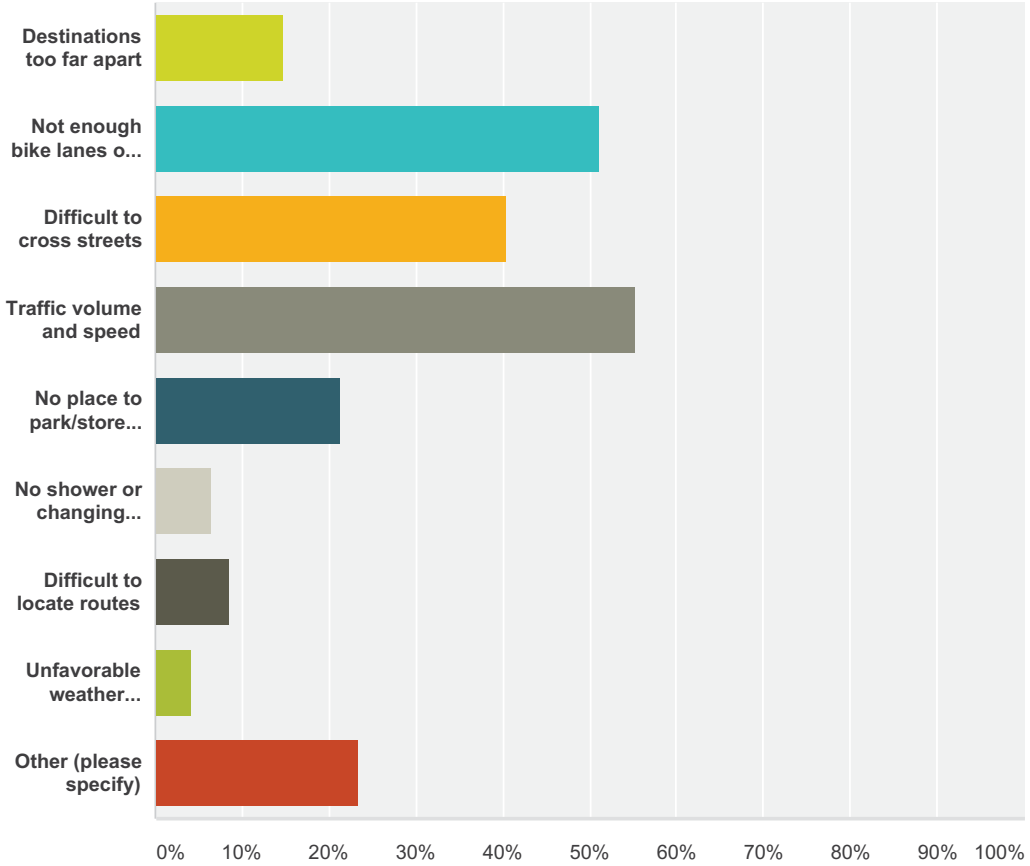
Answered: 54 Skipped: 1



Answer Choices	Responses
Never	48.15% 26
1-4 times	42.59% 23
5-9 times	7.41% 4
10+ times	1.85% 1
Total	54

Q7 What prevents you or other household members from biking on trails or bikeways for commuting/shopping, etc.?

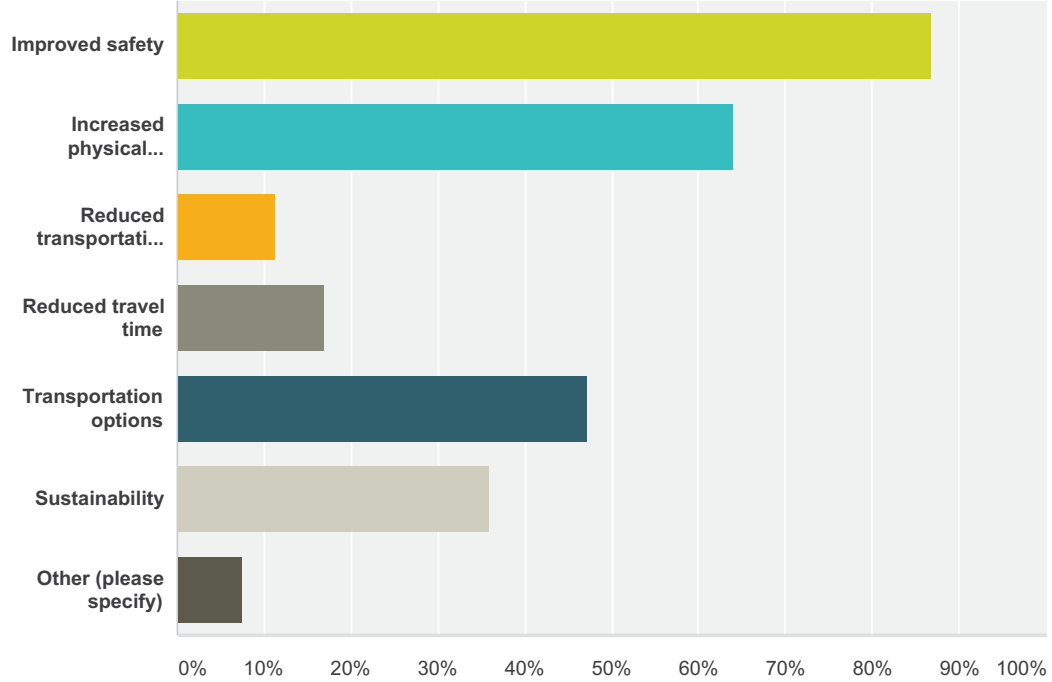
Answered: 47 Skipped: 8



Answer Choices	Responses
Destinations too far apart	14.89% 7
Not enough bike lanes or routes to destinations	51.06% 24
Difficult to cross streets	40.43% 19
Traffic volume and speed	55.32% 26
No place to park/store bicycle at destination	21.28% 10
No shower or changing facility at destination	6.38% 3
Difficult to locate routes	8.51% 4
Unfavorable weather conditions	4.26% 2
Other (please specify)	23.40% 11
Total Respondents: 47	

Q8 Which of the following are important characteristics of a vision for transportation in Lone Tree? (Select top 3).

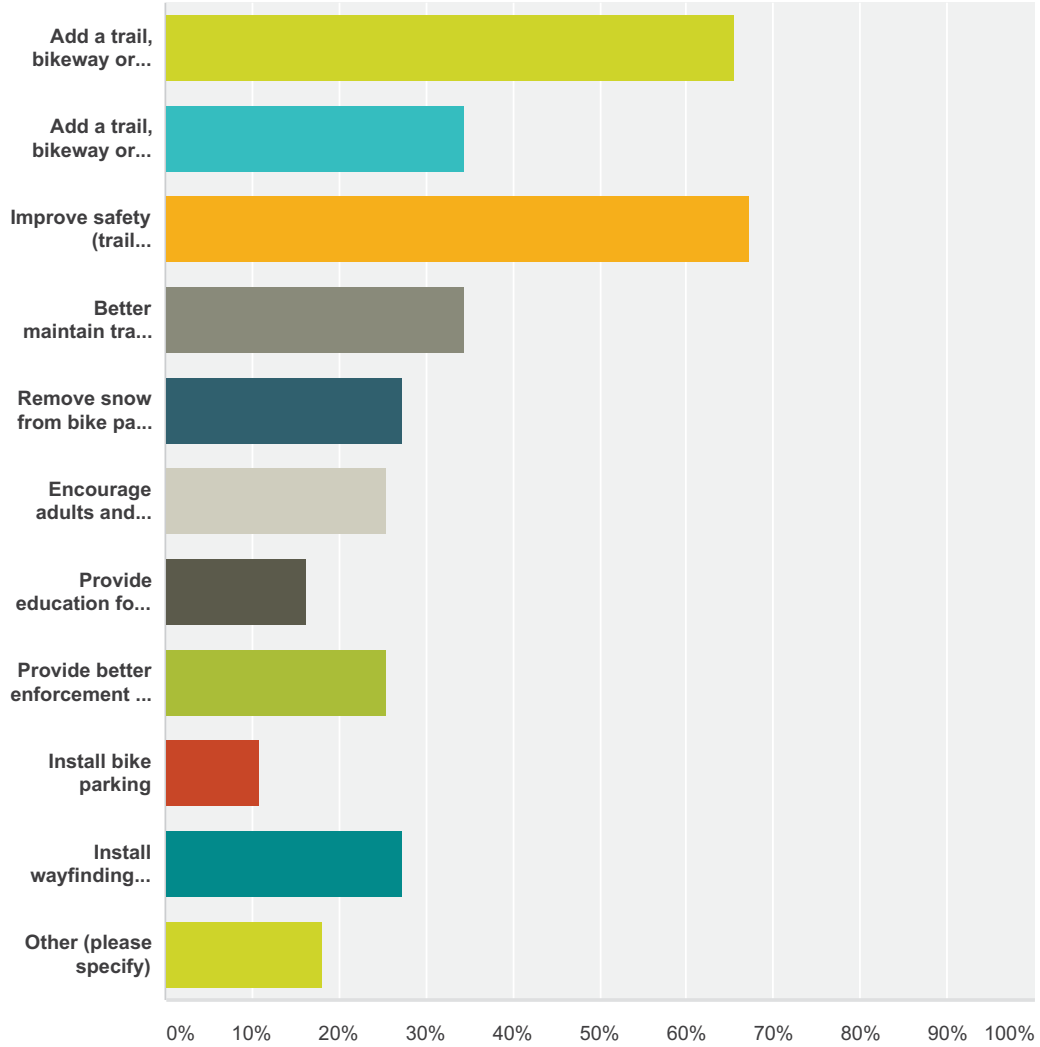
Answered: 53 Skipped: 2



Answer Choices	Responses
Improved safety	86.79% 46
Increased physical activity	64.15% 34
Reduced transportation costs	11.32% 6
Reduced travel time	16.98% 9
Transportation options	47.17% 25
Sustainability	35.85% 19
Other (please specify)	7.55% 4
Total Respondents: 53	

**Q9 What can the City do to improve conditions for bicyclists and pedestrians?
(Select top 4).**

Answered: 55 Skipped: 0



Answer Choices	Responses
Add a trail, bikeway or sidewalk to close a critical network gap	65.45% 36
Add a trail, bikeway or sidewalk to directly access a school, shopping or employment center	34.55% 19
Improve safety (trail lighting, crosswalk enhancement, etc.)	67.27% 37
Better maintain trail, bikeway or sidewalks (grading, repaving, filling in potholes, etc.)	34.55% 19
Remove snow from bike paths and trails for winter use	27.27% 15
Encourage adults and children to walk and bicycle (walk/bike to school/work days)	25.45% 14
Provide education for motorists and pedestrians	16.36% 9

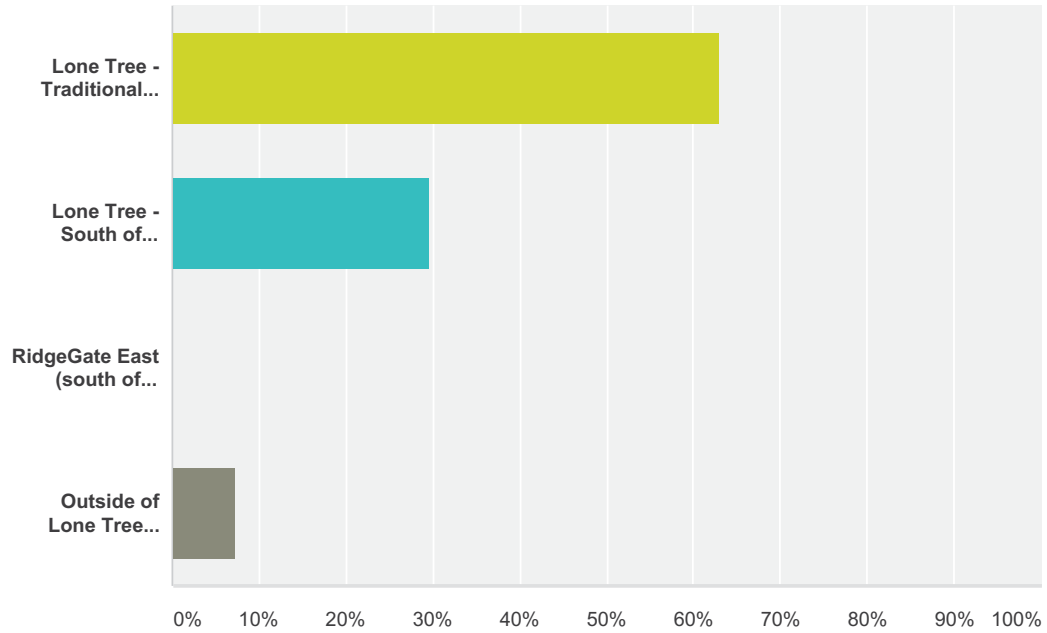
Lone Tree Walk and Wheel Survey

Provide better enforcement for motorists, bicyclists and pedestrians	25.45%	14
Install bike parking	10.91%	6
Install wayfinding signage	27.27%	15
Other (please specify)	18.18%	10
Total Respondents: 55		

Lone Tree Walk and Wheel Survey

Q10 In which area of Lone Tree do you live?

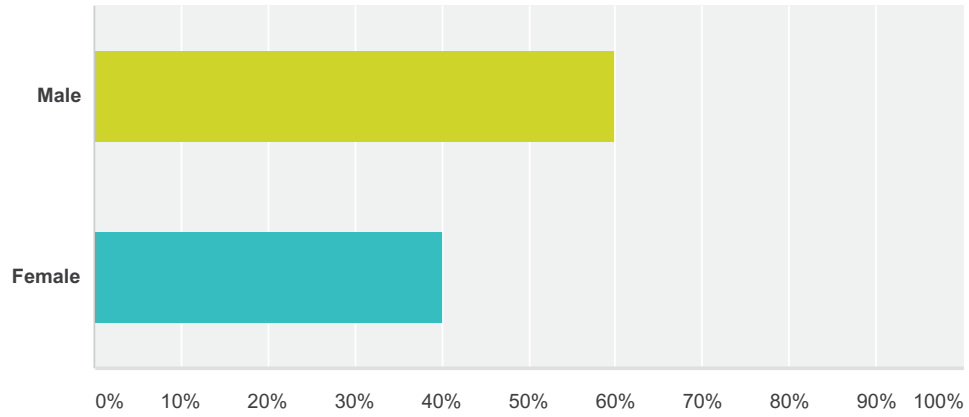
Answered: 54 Skipped: 1



Answer Choices	Responses
Lone Tree - Traditional Lone Tree (north of Lincoln Ave.)	62.96% 34
Lone Tree - South of Lincoln Ave., west of I-25 (includes RidgeGate West, Centennial Ridge, Carriage Club, and Heritage Estates)	29.63% 16
RidgeGate East (south of Lincoln Ave. east of I-25)	0.00% 0
Outside of Lone Tree (please specify)	7.41% 4
Total	54

Q11 What is your gender?

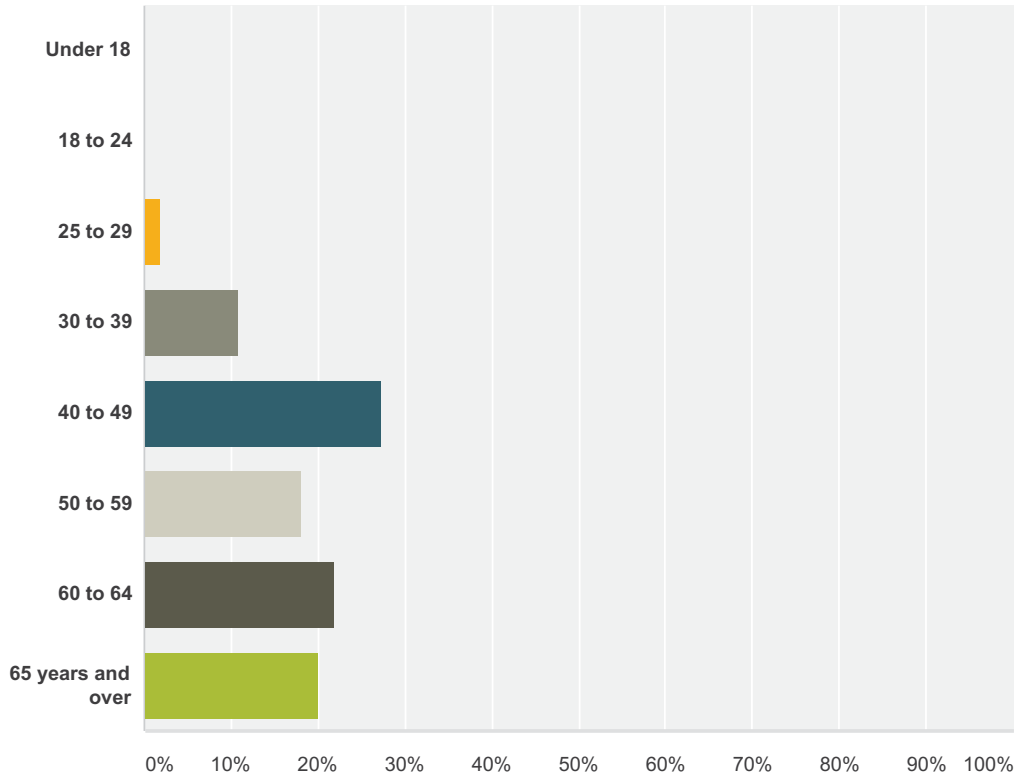
Answered: 55 Skipped: 0



Answer Choices	Responses	
Male	60.00%	33
Female	40.00%	22
Total		55

Q12 What is your age?

Answered: 55 Skipped: 0



Answer Choices	Responses	
Under 18	0.00%	0
18 to 24	0.00%	0
25 to 29	1.82%	1
30 to 39	10.91%	6
40 to 49	27.27%	15
50 to 59	18.18%	10
60 to 64	21.82%	12
65 years and over	20.00%	11
Total		55

APPENDIX D. COST ESTIMATES



ESTIMATE OF CONSTRUCTION COST

Project: Lone Tree Complete Streets
Facility Type: Bike Lanes
Date: 11/6/2014
By: P.S



Improvement Subtotal	COST
Electrical	\$25,704.00
Signing and Striping	\$73,260.00
Civil	\$0.00
Subtotal:	\$98,964.00
5% Mobilization:	\$4,948.20
10% Management:	\$9,896.40
10% Traffic Control:	\$9,896.40
Total:	\$123,705.00
25% Contingency:	\$30,926.25
15% Design fee:	\$18,555.75
Total Cost:	\$173,187.00

Assumptions:

Above estimate is calculated based on a mile length of a street.

Assuming that no civil work will be required.

Assuming no AC overlay will be required.

Detection loops will be replaced if the travel lanes are shifted to accommodate bike lanes

ESTIMATE OF CONSTRUCTION COST

Project: Lone Tree Complete Streets
Facility Type: Move Curb and Gutter to Allow on Street Bike Lanes
Date: 11/6/2014
By: P.S



Improvement Subtotal	COST
Electrical	\$230,052.00
Signing and Striping	\$83,292.00
Civil	\$1,108,800.00
Subtotal:	\$1,422,144.00
5% Mobilization:	\$71,107.20
10% Management:	\$142,214.40
10% Traffic Control:	\$142,214.40
Total:	\$1,777,680.00
25% Contingency:	\$444,420.00
15% Design fee:	\$266,652.00
Total Cost:	\$2,488,752.00

Assumptions:

Above estimate is calculated based on a mile length of a street.

Assuming all existing electrolier will be relocated.

Assuming relocation of the existing detection loops will be not required.

New detection loops for bikes will be installed.

ESTIMATE OF CONSTRUCTION COST

Project: Lone Tree Complete Streets
Facility Type: New 10' Trail
Date: 11/6/2014
By: P.S



Improvement Subtotal	COST
Electrical	\$285,317.60
Signing and Striping	\$0.00
Civil	\$631,100.00
Subtotal:	\$916,417.60
5% Mobilization:	\$45,820.88
10% Management:	\$91,641.76
10% Traffic Control:	\$91,641.76
Total:	\$1,145,522.00
25% Contingency:	\$286,380.50
15% Design fee:	\$171,828.30
Total Cost:	\$1,603,730.80

Assumptions:

Above estimate is calculated based on a mile length of a 10' wide new trail.

New ped electroliers will be installed.

This cost estimate does not account for improvements at the street crossings.

Assuming no cut/fill will be required.

ESTIMATE OF CONSTRUCTION COST

Project: Lone Tree Complete Streets
Facility Type: New Trail Street Crossing
Date: 11/6/2014
By: P.S



Improvement Subtotal	COST
Electrical	\$6,344.80
Signing and Striping	\$5,746.00
Civil	\$15,600.00
Subtotal:	\$27,690.80
5% Mobilization:	\$1,384.54
10% Management:	\$2,769.08
10% Traffic Control:	\$2,769.08
Total:	\$34,613.50
25% Contingency:	\$8,653.38
15% Design fee:	\$5,192.03
Total Cost:	\$48,458.90

Assumptions:

Above estimate is calculated for a new mid block trail crossing.

This cost estimate does not account for improvements on the trail.

Assuming no cut/fill will be required.

Assuming that no ped signal will be required.

ESTIMATE OF CONSTRUCTION COST

Project: Lone Tree Complete Streets
Facility Type: Pave Existing Unpaved Trail
Date: 11/6/2014
By: P.S



Improvement Subtotal	COST
Electrical	\$0.00
Signing and Striping	\$0.00
Civil	\$264,000.00
Subtotal:	\$264,000.00
5% Mobilization:	\$13,200.00
10% Management:	\$26,400.00
10% Traffic Control:	\$26,400.00
Total:	\$330,000.00
25% Contingency:	\$82,500.00
15% Design fee:	\$49,500.00
Total Cost:	\$462,000.00

Assumptions:

Above estimate is calculated based on a mile length of an existing unpaved trail.

Assuming no electrical work will be required.

Assuming no pedestrian signals will be required at street crossings.

Assuming no cut/fill will be required.

ESTIMATE OF CONSTRUCTION COST

Project: Lone Tree Complete Streets

Facility Type: Reduce Median Width to Accommodate On-Street Bike Lanes.

Date: 11/6/2014

By: P.S



Improvement Subtotal	COST
Electrical	\$44,028.00
Signing and Striping	\$73,260.00
Civil	\$559,680.00
Subtotal:	\$676,968.00
5% Mobilization:	\$33,848.40
10% Management:	\$67,696.80
10% Traffic Control:	\$67,696.80
Total:	\$846,210.00
25% Contingency:	\$211,552.50
15% Design fee:	\$126,931.50
Total Cost:	\$1,184,694.00

Assumptions:

Above estimate is calculated based on a mile length of a street.

Assuming no curb to curb AC overlay will be required

Detection loops will be replaced if the travel lanes are shifted to accommodate bike lanes

ESTIMATE OF CONSTRUCTION COST

Project: Lone Tree Complete Streets
Facility Type: Shared Use Path
Date: 11/6/2014
By: P.S



Improvement Subtotal	COST
Electrical	\$74,028.00
Signing and Striping	\$73,260.00
Civil	\$1,307,760.00
Subtotal:	\$1,455,048.00
5% Mobilization:	\$72,752.40
10% Management:	\$145,504.80
10% Traffic Control:	\$145,504.80
Total:	\$1,818,810.00
25% Contingency:	\$454,702.50
15% Design fee:	\$272,821.50
Total Cost:	\$2,546,334.00

Assumptions:

Above estimate is calculated based on a mile length of a street.

Removing and relocating 15 electroliers per mile

Assuming no AC overlay will be required

Detection loops will be replaced if the travel lanes are shifted to accommodate bike lanes

Existing trees to remain, and only 40 additional trees per mile will be planted

Existing sidewalk/path will be removed and replaced by new 10' shared path

APPENDIX E. PROJECT SCORING SHEET

Project #	Classification	Roadway/Trail	Project Limits	Distance (mi. or quantity)	Sides of the Street	Facility Type for Unit Cost	Unit Cost (\$/mi or LS)	Project Cost	Gap Closure Score (3)	Key Destination Score (3)	Safety Need Score (3)	Safety Issue Score (3)	Regional Connectivity Score (2)	Rec. or Community Opportunity Score (2) LTS	Community Benefit Score
36	Crossing	C-470 Trail at Yosemite Street	N/A	N/A				4,857,000	0	3	3	3	2	1	12
13	Trail	Willow Creek Trail Connection (North)	Park Meadows Drive/Yosemite Street to Willow Creek Trail north of Park Meadows Drive	0.13	1	Shared-Use Path New	\$ 1,600,000	\$ 215,240	3	2	2	0	2	1	10
19	Trail	Willow Creek Trail Connection (South)	North of Lincoln Avenue to north of Heritage Hills Circle	0.07	1	Shared-Use Path New	\$ 1,600,000	\$ 117,361	3	3	0	3	0	1	10
33	Crossing	C-470 Trail at Acres Green Drive	N/A	N/A			49,500	0	0	3	3	2	2	2	10
2	Bike Lane	Park Meadows Drive	Yosemite Street to Lincoln Avenue	1.86	2	Bike Lanes - Striping Only	\$ 173,000	\$ 644,648	0	3	3	3	0	0	9
8-9	Bike Lane	Lincoln Avenue	Yosemite Street to Park Meadows Drive	1.34	2		\$ 2,663,000	\$ 1,079,834	0	3	3	3	0	0	9
28	Trail	Bluffs Regional Park Connection	Bluffs Regional Park Trailhead (northeast corner of park) to Willow Creek Trail	0.10	1	Shared-Use Path New	\$ 1,600,000	\$ 161,149	3	3	0	0	2	1	9
37	Crossing	Willow Creek Trail at Lincoln Avenue	N/A	N/A			4,857,000	0	0	3	3	3	2	1	9
4	Bike Lane	Yosemite Street	Park Meadows Drive to Lincoln Avenue	1.39	2	Bike Lanes - Striping Only	\$ 173,000	\$ 480,162	0	3	2	3	0	0	8
38	Crossing	Heritage Hills Circle at Commons Street (west side of Lone Tree Elementary School)	N/A	N/A			33,000	0	3	0	3	0	2	2	8
39	Crossing	Heritage Hills Circle at Lone Tree Elementary School (east side)	N/A	N/A			33,000	0	3	0	3	0	2	2	8
17	Trail	Willow Creek Trail	North of Heritage Hills Circle to Yosemite Street	0.82	1	Shared-Use Path - Pave Existing	\$ 462,000	\$ 377,394	3	3	0	0	0	1	7
31	Bike Lane	Acres Green Drive	Park Meadows Drive to Centennial Trail	0.12	2	Bike Lanes - Striping Only	\$ 173,000	\$ 40,405	0	0	3	0	2	2	7
5-7	Bike Lane	Lincoln Avenue	Western City Limits to Yosemite Street	2.00			\$ 2,836,000	\$ 1,250,238	0	0	3	3	0	0	6
22	Shared-Use Path	Lincoln Avenue	South side of Lincoln Avenue from paved portion of Willow Creek Trail to Park Meadows Drive	0.24	1	Shared-Use Path New	\$ 1,600,000	\$ 389,341	0	3	0	0	2	1	6
32	Trail	Willow Creek Trail Extension south of Sweetwater Park	Loop south of Sweetwater Park	0.49	1	Shared-Use Path New	\$ 1,600,000	\$ 790,205	0	3	0	0	2	1	6
34	Crossing	Willow Creek Trail at Park Meadows Drive	N/A	N/A			49,500	0	0	0	3	2	1	6	
11	Bike Lane	Ridgegate Parkway	Between roundabouts	0.48	2	Bike Lanes - Striping Only	\$ 173,000	\$ 167,630	0	2	0	3	0	0	5
12	Bike Lane	Ridgegate Parkway	2nd Roundabout to I-25 Interchange	0.50	2	Bike Lanes - Relocate Curb & Gutter	\$ 2,490,000	\$ 2,501,613	0	2	0	3	0	0	5
15	Shared-Use Path	Apartment Trail to Park Meadows Drive	Retreat at Park Meadows Apartments to Park Meadows Drive	0.31	1	Shared-Use Path New	\$ 1,600,000	\$ 490,230	0	2	0	2	0	1	5
10	Bike Lane	Ridgegate Parkway	Lincoln Avenue to 1st Roundabout	0.36	2	Bike Lanes - Relocate Curb & Gutter	\$ 2,490,000	\$ 1,788,125	0	1	0	3	0	0	4
24	Shared-Use Path	Park Meadows Boulevard	Eastside of roadway from Chatham Drive (Charles Schwab Campus) to Ridgegate Parkway	0.38	1	Shared-Use Path - Widen Existing	\$ 2,550,000	\$ 979,983	0	3	0	0	0	1	4
25	Shared-Use Path	Park Meadows Boulevard	Westside of roadway from Lincoln Avenue to Ridgegate Parkway	0.47	1	Shared-Use Path - Widen Existing	\$ 2,550,000	\$ 1,198,910	0	3	0	0	0	1	4
1	Bike Lane	Park Meadows Drive	Acres Green to Yosemite Street	0.95	2	Bike Lanes - Striping Only	\$ 173,000	\$ 329,800	0	0	3	0	0	0	3
3	Bike Lane	Park Meadows Drive	Lincoln Avenue to Ridgegate Parkway	0.50	2	Bike Lanes - Relocate Curb & Gutter	\$ 2,490,000	\$ 2,487,994	0	3	0	0	0	0	3
14	Trail	Apartment Trail to Entertainment District	Park Meadows Drive to behind Retreat at Park Meadows Apartments	0.28	1	Shared-Use Path - Pave Existing	\$ 462,000	\$ 127,911	0	2	0	0	0	1	3
20	Shared-Use Path	Lincoln Avenue	North side of Lincoln Avenue from Yosemite Street to project #19	0.38	1	Shared-Use Path - Widen Existing	\$ 2,550,000	\$ 968,093	0	0	0	2	0	1	3
21	Shared-Use Path	Lincoln Avenue	South side of Lincoln Avenue from Yosemite Street to paved portion of Willow Creek Trail	0.28	1	Shared-Use Path - Widen Existing	\$ 2,550,000	\$ 709,581	0	0	0	0	2	1	3
29	Bike Lane	Sky Ridge Avenue	Park Meadows Drive to Trainstation Circle	0.06	2	Bike Lanes - Striping Only	\$ 173,000	\$ 21,977	0	3	0	0	0	0	3
18	Shared-Use Path	Lincoln Avenue	Western City Limits to Yosemite Street	2.01	1	Shared-Use Path - Widen Existing	\$ 2,550,000	\$ 5,135,073	0	0	0	0	0	1	1
26	Shared-Use Path	Ridgegate Parkway	2nd Roundabout at Park Meadows Boulevard to project #27	0.81	1	Shared-Use Path - Widen Existing	\$ 2,550,000	\$ 2,055,304	0	0	0	0	0	1	1
27	Trail	Sky Ridge Trail	East of Sky Ridge Medical Center from the future Sky Ridge Avenue extension to project #26 and connection to grade separated crossing	0.63	1	Shared-Use Path New	\$ 1,600,000	\$ 1,006,233	0	0	0	0	0	1	1