Bicycle & Pedestrian Master Plan

CITY OF ST. CHARLES, MISSOURI

Final Plan | October 2016

Produced by: Trailnet

Acknowledgments

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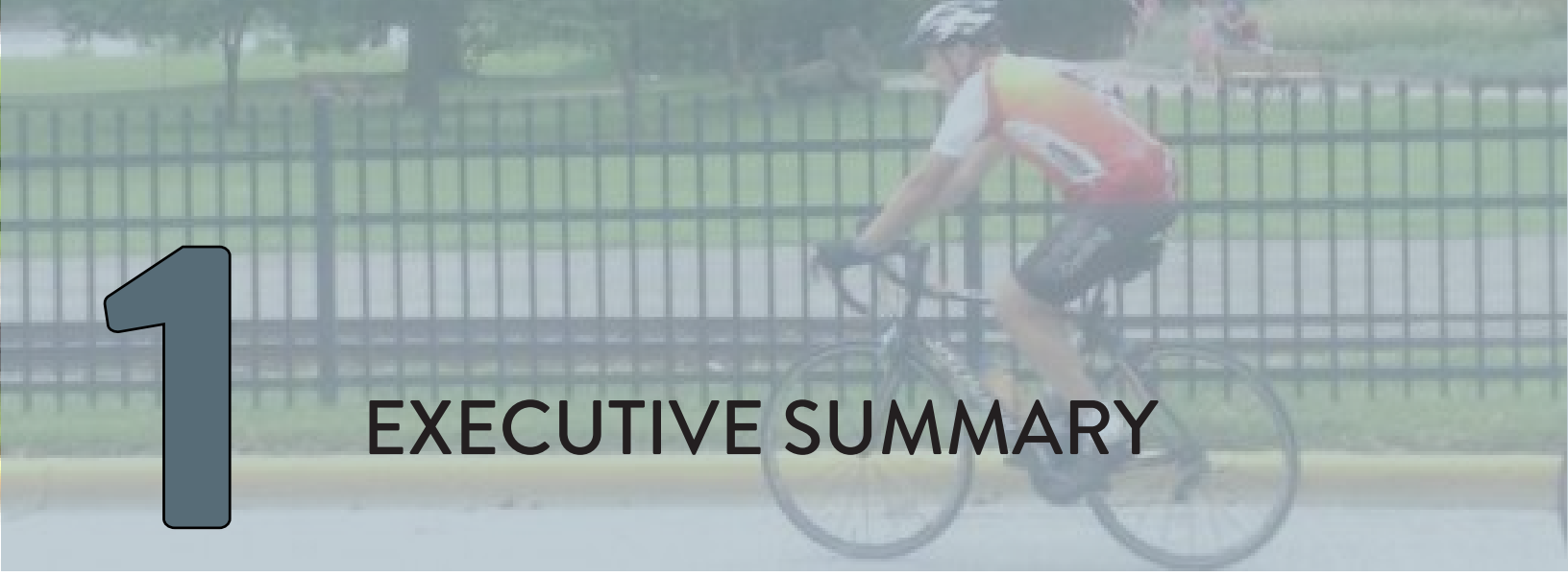


1 EXECUTIVE SUMMARY

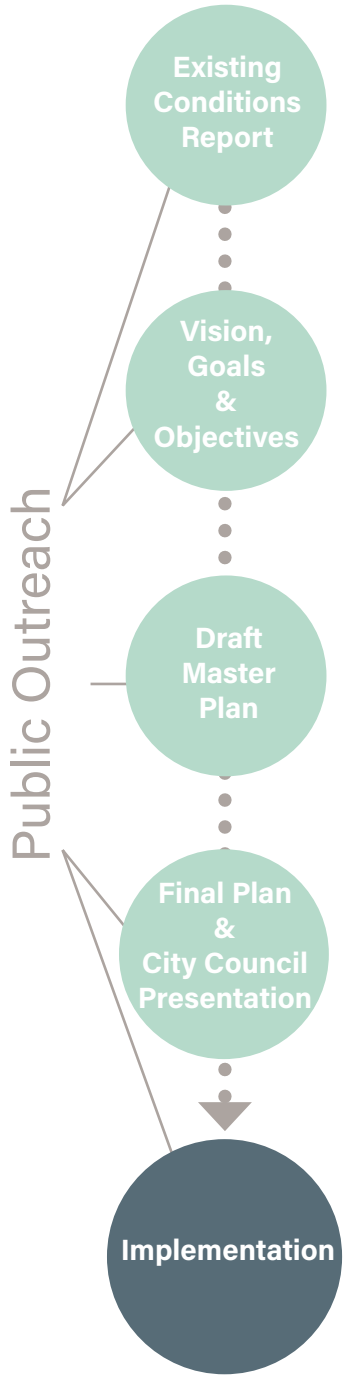
PURPOSE

The City of St. Charles' numerous amenities and walkable scale encourage walking and bicycling. Improving upon the walkability and bikeability in the City of St. Charles will create a strong competitive advantage for attracting residents while providing a more accessible, safe, connected, and livable place for current residents.

In July 2015, recognizing the benefits of a more walkable and bikeable community, the City of St. Charles initiated the beginning of what is now the City of St. Charles Bicycle and Pedestrian Master Plan. The purpose of this Master Plan is to serve as the long range, 20-year, vision for the City and to guide pedestrian and bicycle improvements.

PLANNING PROCESS

The planning process for the City of St. Charles Bicycle and Pedestrian Master Plan is displayed on the right.



PLANNING PRIORITIES

The planning priorities of the master plan were drafted by the Plan Steering Committee based on resident feedback received during the initial round of public outreach and were further refined by the City of St. Charles staff.

The planning priorities are:

- ► Connect to key destinations and address barriers in and near the City
- ► Set infrastructure and land use standards that lead to desirable streets and trails
- ► Communicate and share the safety and health benefits of active transportation
- ► Strengthen connections to the Katy Trail
- ► Ensure accessibility for active transportation throughout the City

PLAN RECOMMENDATIONS

The plan recommends implementing various policies and initiatives as well as physical infrastructure improvements to create a more walkable and bikeable community. The recommendations center on the "5 Es" - education, encouragement, enforcement, evaluation, and engineering.

The following is a brief summary of the "5 E" recommendations for the City of St. Charles:

Education

- Bicycle education classes for St. Charles adults and children
- Introductory rides on Katy Trail and greenways
- Safety literature for all roadway users
- Safe walking and biking with Safe Routes to School programs

Enforcement

- Increase use of police officers on bicycles
- School safety officers add bicycle and pedestrian safety to existing curriculum
- Distribute informational cards outlining the rights and responsibilities of people walking, bicycling, and driving
- Reduce speed limit on designated routes

Encouragement

- Community walk and ride events
- Network of bicycling and walking wayfinding signs
- Walking and bicycling maps
- Bicycle station downtown

Evaluation and Implementation

- Establish a Bicycle and Pedestrian Advisory Committee (BPAC) to oversee plan implementation and progress
- Create and distribute annual reports on plan progress
- Seek walk and bike friendly community designations
- Designate a staff person to be in charge of bicycle and pedestrian issues
- Adopt a complete streets policy

Engineering

- 43 miles of multi-use paths
- 29 miles of bike lanes
- 25 miles of calm streets
- 13 miles of shared lanes
- 10 miles of additional sidewalks

2 INTRODUCTION

WHY WALKING AND BICYCLING?

The City of St. Charles is an attractive destination for tourists, families, and businesses alike. The City has numerous enjoyable and walkable attractions, including historic Main Street, the Katy Trail, and the scenic Missouri River. Creating stronger multi-modal connections to these destinations will provide healthier, safer, and more economical options for both tourists and residents.

Acording to a study evaluating future market success and demand for walkable urban places, downtown St. Charles was listed as one of the four most walkable urban places in the region outside of the St. Louis urban core.[1] The thriving Main Street area and New Urbanist development in St. Charles shows the market demand for walkable places. Bikeable and walkable streets can attract investment, increase property values, reduce congestion, and cost less to build and maintain than traditional roads.

A few examples include:

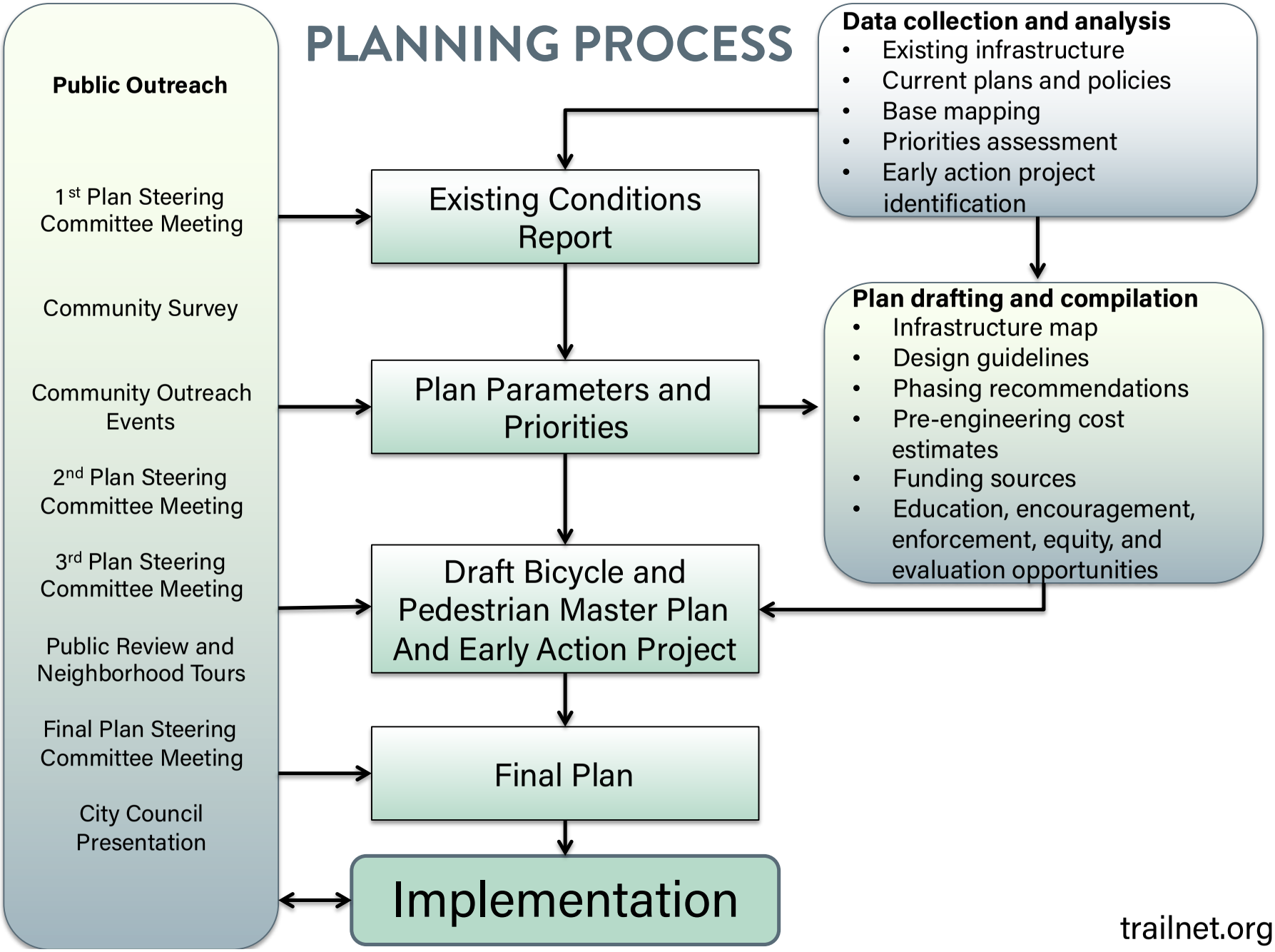
- The National Realtor's Association 2015 Community Preference Survey found that **85% of respondents considered walkability to be an important factor when looking for a new home.** The report also found that **millennials preferred walking more than driving by 12 percentage points.**[2]
- In Memphis, a commercial district reported a **50% increase in commercial rents** after striping bike lanes.[3]
- When San Francisco improved biking and walking access on Valencia Street, **two-thirds of merchants said the increased levels of bicycling and walking improved business.**[4]
- In 2008, Portland estimated its **entire bicycle network cost the same as one mile of urban freeway**, approximately $60 million.[5]

By improving bikeability and walkability, St. Charles can increase home values, improve residents' access to local businesses and schools, and attract tourists from throughout the region to local businesses.

DRAFTING THE MASTER PLAN

Recognizing the benefits of a more walkable and bikeable community, the City of St. Charles undertook the preparation of a bicycle and pedestrian master plan. The following chart provides greater details on the planning process used to create this plan.

PLANNING PROCESS



3 EXISTING CONDITIONS

DEMOGRAPHIC TRENDS

Demographic trends can impact demand for transportation as the population grows. At the same time, in a mature city like St. Charles, expanding the roads can be expensive and take space away from businesses and homes. Ensuring residents are able to choose walking and bicycling for local trips can reduce the burden of a growing population on the transportation infrastructure.

The City of St. Charles has experienced strong population growth over the past several decades. From 1970 to 2010, the City of St. Charles grew by over 106%.[6] In the last five decades, population growth was strongest in the 1980s, growing by nearly 46%. It has since tapered somewhat, growing between 9% and 10% in succeeding decades. When the 2010 Census was taken, the population of St. Charles was 65,794 and in 2013, estimates indicated the city had grown by over 2.5% since the 2010 census report. Estimates also show that since 2010 the largest growing segments of the population are the millennial and baby boomer generations, at 2.5% and 3.2% respectively.[7]

In addition to the growing population increasing demand for transportation, there is a growing interest in traditional, walkable communities.[8] Across the country, and in the region, baby boomers, along with millennials, are choosing to live in more traditional neighborhoods with greater access to walking, biking, and shopping. As the baby boomer and millennial generations continue to grow, it is reasonable to expect that St. Charles' walkable scale and neighborhood amenities will attract new population demands for better walking and biking. In a region that has experienced slow growth, improved walkability and bikeability in the City of St. Charles can be a strong competitive advantage for attracting and retaining residents.

Transportation Preferences

Shifting preferences in travel modes can be seen in the numbers of vehicle miles traveled (VMT) nationally and throughout the St. Louis region. The national average for daily VMT reached its peak in 2007 at 8.3 billion miles. Average VMT has grown since then, but is still less than its peak in 2007. Overall, since 2007, the average annual VMT has declined 1.44%.[9]

A similar scenario has taken place in the St. Louis region. St. Louis' regional average VMT also peaked in 2007 with an average of 67.2 million daily miles driven. It declined steadily every year until 2011 when average daily VMT reached its lowest point at 64.2 million daily miles. Average daily VMT has grown since then and in 2013 the St. Louis region had average VMT of 65.6 million daily miles, or 2.23% less than the 2007 peak.

St. Charles County has also experienced similar changes in average daily VMT since 2007. From 2007 to 2011, average daily VMT for the county decreased by over 4%. [10] Since 2011, average daily VMT for St. Charles County has increased, and in 2013 average daily VMT was only slightly higher

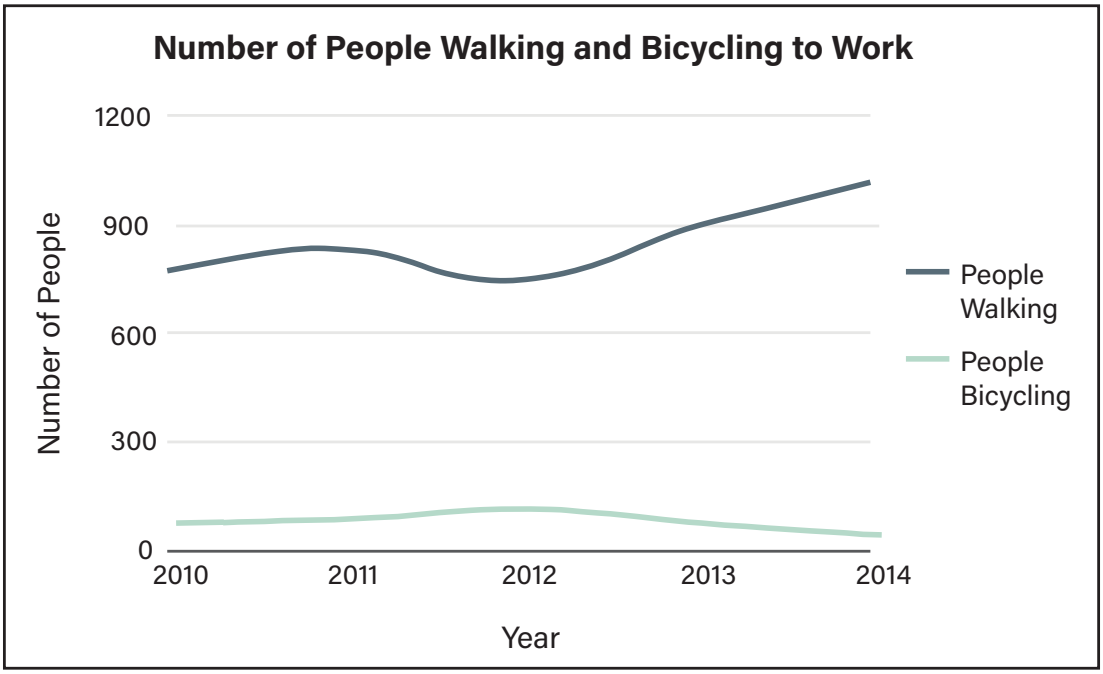


Figure 1: City of St. Charles residents biking and walking to work

(1.26%) than 2007 levels. [11]

The annual VMT growth rate has been slow in St. Charles County which is the result of several larger social trends, such as the baby boomer generation retiring and younger people becoming interested in walking, biking and taking transit. Additionally, more people in St. Charles County are working closer to home. From 2007 to 2013, the number of people who both work and live within St. Charles County has grown by roughly 9%.

Slowing VMT is also an indicator that more people may be open to alternative modes of transportation such as walking and biking. The data supports this trend, and since 2010 the growth of people walking and biking to work has greatly exceeded the growth of people driving to work. In 2010, around 856 people either biked or walked to work in the City of St. Charles. This total increased in 2014, with 1,070 people biking or walking to work. [12]

Transportation and Accessibility

Improving walking and bicycling access is about more than keeping up with regional and national trends in transportation; it is also an issue of meeting the basic needs of residents. Some people can not drive, due to age, physical or mental conditions, or finances. In addition to those who can not drive, many residents may benefit from driving less, as walking and bicycling are less expensive than driving and promote health.

In 2014, the American Community Survey found that 510 (1.4%) St. Charles residents 16 years old or older did not have access to a car when commuting to work. In addition to these households, 10.6% of the population that is under 15 is completely reliant on being driven, walking, or biking. Driving ability declines with age, and it is reasonable that some of the 6.7% of St. Charles residents over 75 may be aging out of driving. These numbers underscore the importance of a transportation system that allows residents to bike, walk, and take transit safely. [13]

Housing and Transportation Costs

For roughly one in four households in the City of St. Charles, housing is considered unaffordable based on the national definition of housing costs as 30% of income or less. Data from the Housing and Transportation Index (H+T Index) from the Center for Neighborhood Technology (CNT) shows that roughly 25% of households spend over 30% over their income on housing. 9.7% of residents spend over 36% of their monthly

incomes on housing costs, with another 19.6% of residents spending between 30% to 36%. [14]

Recently, the U.S. Department of Transportation has introduced another way of looking at affordability, by combining housing and transportation costs. The Location Affordability Portal, a tool produced by the U.S. Department of Transportation, shows that the average combined cost of housing and transportation in St. Charles is $27,055 annually or 50% of the median income in the City of St. Charles. [15] [16]

Improving transportation options is one way to help families manage the cost of living. Making biking and walking easier can give families the choice to reduce transportation costs by biking, walking, or taking transit. Education and encouragement can also help residents become more aware of the transportation options already existing in the community.

SURVEY SUMMARY

A survey was conducted as part of the initial public outreach process. The goals of the survey were to better understand:

- The values and priorities of residents when it comes to transportation in the City of St. Charles.
- Why people in the City of St. Charles currently walk and bicycle and why they would like to walk or bicycle in the future.
- Existing conditions, including specific challenges to people walking or bicycling in the City of St. Charles.

The survey was launched in August 2015 and closed in September 2015. At the request of a City Councilor, a shorter survey with fewer questions was made available to increase the likelihood of respondents. Both surveys were made available online and distributed through City Hall and at public engagement events on paper. The longer survey received 144 responses and the shorter survey received 170 responses. In the following summary, the responses are combined.

The shorter survey asked several open-ended questions while the longer survey gave respondents a list of options for the same questions followed by the opportunity to submit additional answers. Content analysis was performed on the open-ended responses from the shorter survey and added to the tally of answers from the longer survey. This survey was not a random sample of residents. It is likely that those who were already interested in walking and bicycling were the most likely to answer the survey. The planning team attended several community events and asked people to take surveys in order to get a wider set of responses.

Who Took the Survey?

Survey respondents were more likely to be older, white, and female, as compared to the City of St. Charles as a whole. Of the 245 respondents that indicated a gender, 56% were women and 44% were men; based on the 2010 Census, the City of St. Charles is 51% female. Only the longer survey asked residents to identify their race or ethnicity. Of the 110 people who answered the question, 99% identified as white, while the overall population of St. Charles is 88% white, based on the 2010 Census.

No one under 18 took the survey, while respondents in the 35 to 64 year old range were over represented in the survey responses. Due to an error, the age categories excluded the age of 18. Please see Figure 2 for more information on the age groups that took the survey.

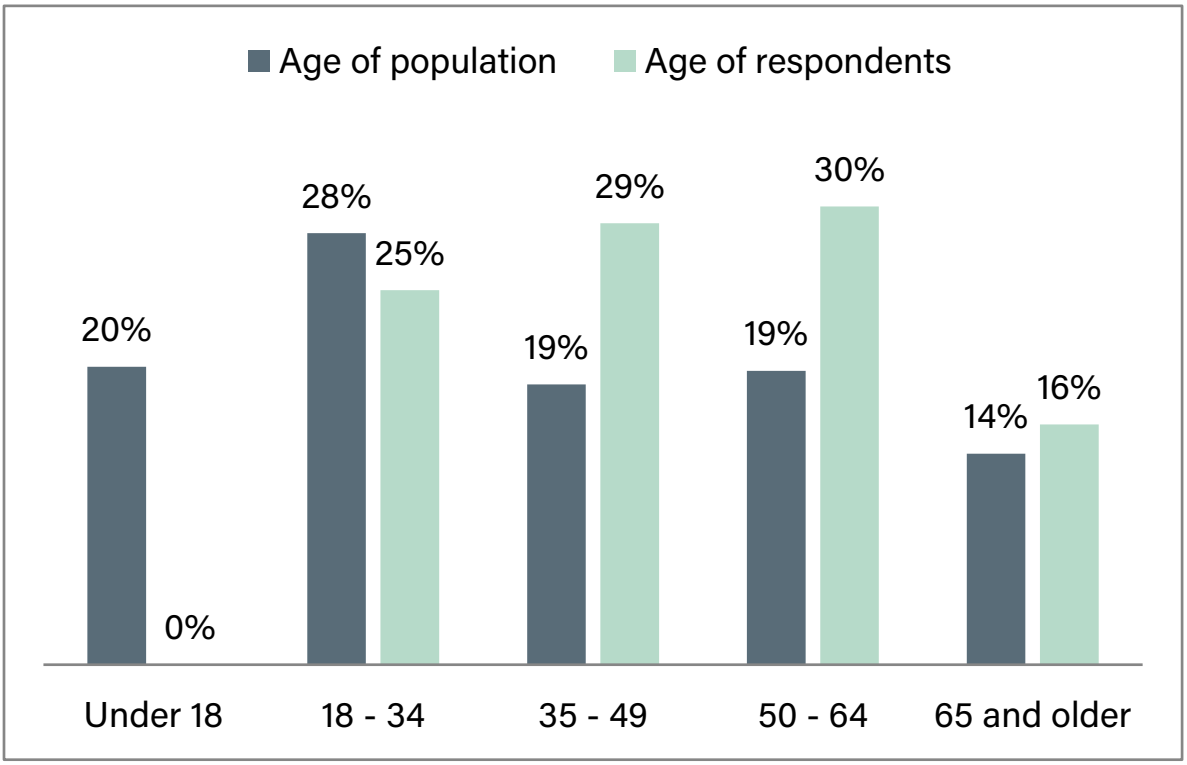


Figure 2: Age of survey respondents

Transportation Habits and Preferences

Driving was by far the most frequently used mode of transportation, with 9 out of 10 respondents reporting that they drive daily. Over 3 in 4 respondents reported walking at least a few times a week and 35% reported bicycling at least a few times a week. Transit was very infrequently used.

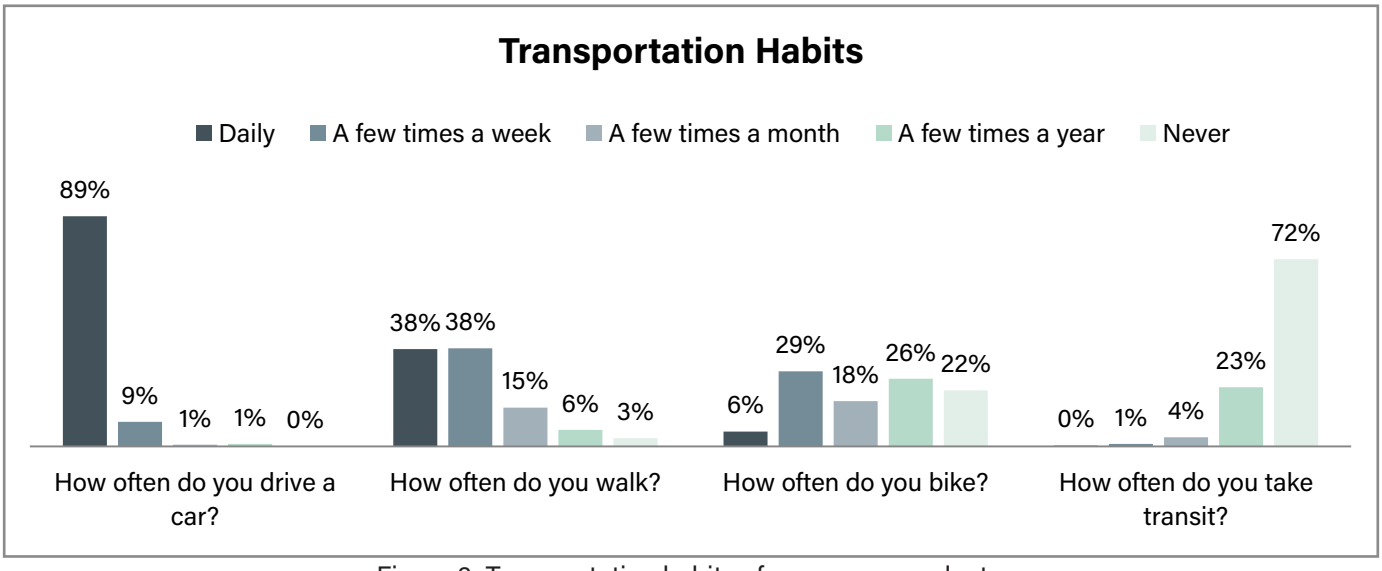


Figure 3: Transportation habits of survey respondents

However, when asked what they would like to change about their transportation habits, three out of four respondents said they would like to walk and bicycle more. Almost half of respondents indicated they would also like to drive less. These results suggest that St. Charles would like alternatives to driving. Very few people in the City of St. Charles use transit and only 13% would like to take transit more. The next section looks at what changes would allow people to choose walking or bicycling more often.

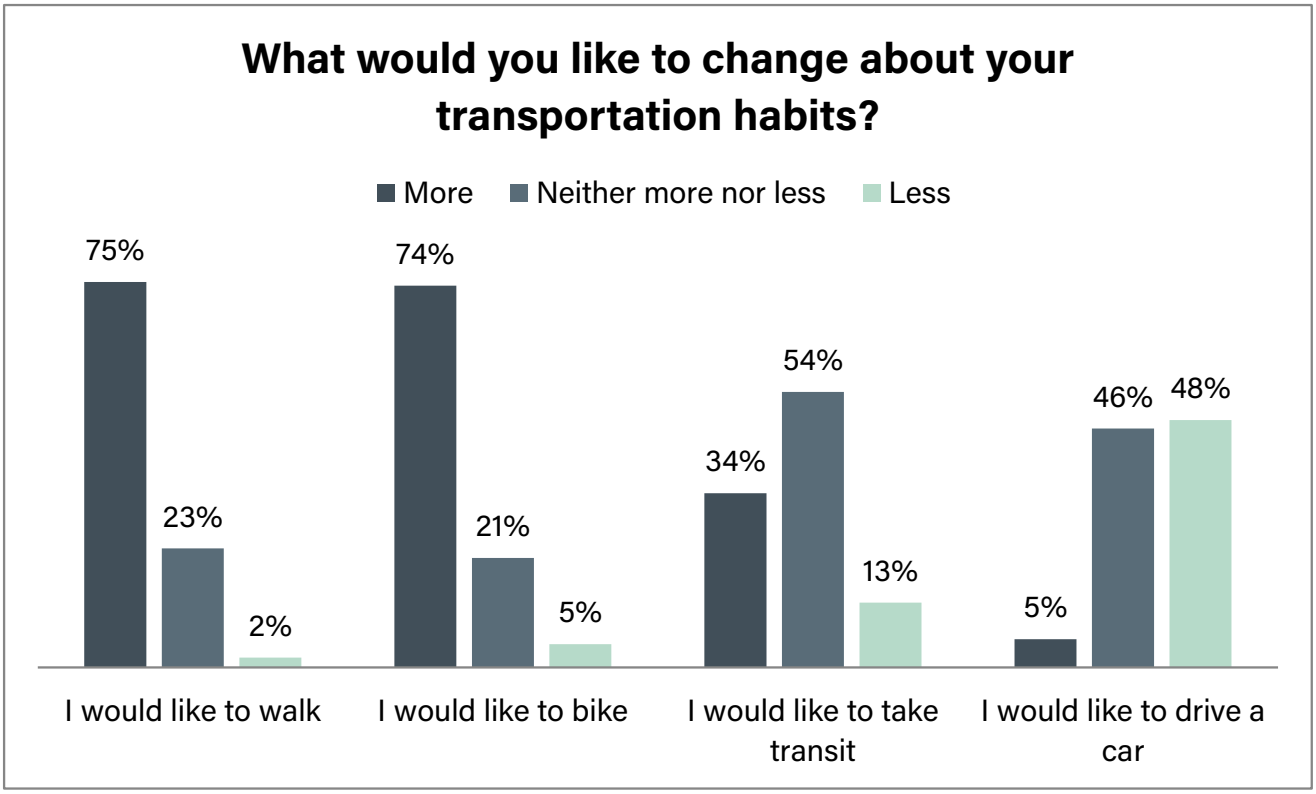


Figure 4: Transportation preferences of survey respondent

Reasons for Walking and Bicycling

When asked why they walk (See Figures 5 and 6), respondents mostly chose reasons that would fall under the category of leisure, including fun or fitness, spending time with friends or family, and exercising pets. The fourth most common reason for walking was going to parks, followed by going to local shops. Very few people reported walking to work, school, or transit. The results suggest that the largest gains in increasing walking and reducing car trips could be made by encouraging residents to walk to local parks and shops, as these destinations are already close by for many residents and there is interest in walking to them. The City of St. Charles has a strong network of parks and shops, and increasing walking trips could reduce parking demand.

The responses for why people bicycle were very similar, with recreational bicycling being the most popular, though exercising pets was not an option on the survey. As with walking, there is demand for more bicycling trips to parks and local shops, which could reduce parking demand. Transportation planning often starts with the assumption that transportation is a "derived demand," as people want transportation because it gets them to a destination, not because they enjoy transportation. Both walking and bicycling stand out from other modes as people enjoy walking and bicycling for their own sake, even without a destination. Respondents reported walking and bicycling in order to be social and spend time with family and friends. These responses underline the need to build infrastructure that is pleasant and facilitates social interaction in order to give the residents what they want out of walking and bicycling, even as they are going to a destination.

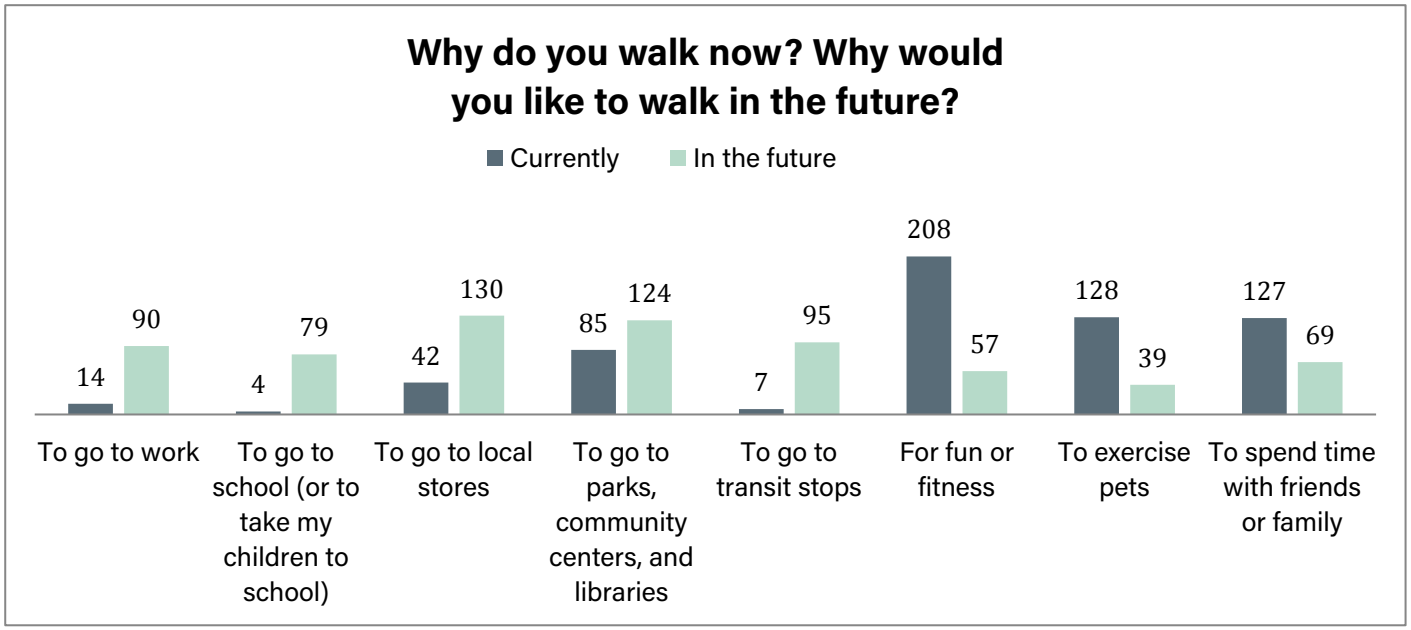


Figure 5: Survey respondents' reasons for walking

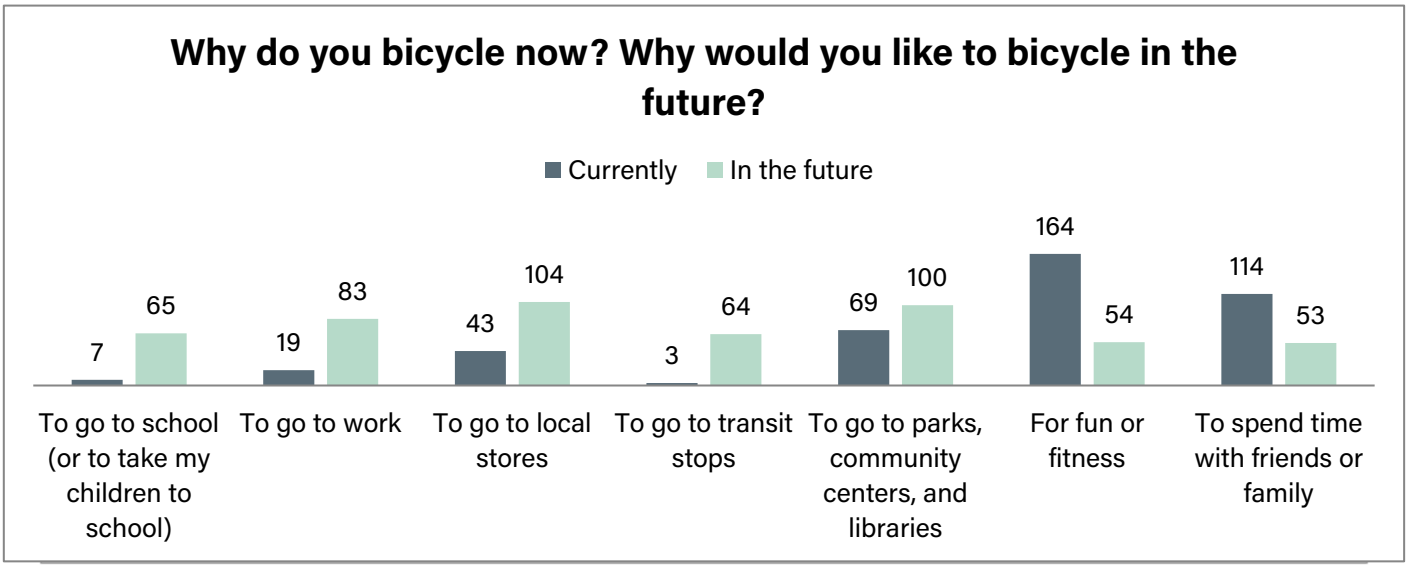


Figure 6: Survey respondents' reasons for bicycling

Shifting Gears

Respondents reported a desire to walk and bicycle more frequently; this section looks at what they report would help them to actually do so. The number one reason respondents reported not walking is lack of time, which is out of the scope of this planning process. However "lack of sidewalks" was a close second in terms of barriers to walking, and "crossing busy roads" is tied with "weather." Only seven respondents identified hills as a barrier to walking.

For bicycling, the lack of infrastructure was cited as a barrier more frequently than lack of time. "Rude drivers", "fast cars," and "crossing busy roads" were all identified as barriers more frequently than weather. Only twelve people identified hills as a barrier to bicycling. The responses suggest that improved infrastructure and slower, more polite drivers will remove barriers to bicycling.

The survey also asked what changes would encourage people to walk and bike more, and responses were in line with the barriers identified by respondents. Over 100 respondents identified more walking and biking paths were needed, followed by more sidewalks and more bike lanes. Improved signage and improved conditions for walking and bicycling were popular, but still less than half as frequently identified as more walking and biking paths.

What prevents you from walking more?	
Lack of time	86
Lack of sidewalks	76
Weather	48
Crossing busy roads	48
Uneven/poorly maintained sidewalks	40
Rude drivers	30
Not enough street lighting	28
Fast cars	27
Trash/debris on sidewalk and shoulder	13
Lack of sidewalk ramps	12
Physical ability	9
Crime	8
Hills	7

Table 1: Barriers to walking

What prevents you from bicycling more?	
Lack of bike infrastructure	93
Lack of time	61
Rude drivers	56
Crossing busy roads	55
Fast cars	52
Uneven/poorly maintained pavement	32
Weather	30
Not sure how to bicycle on streets	21
Trash/debris on sidewalk and shoulder	20
Not enough street lighting	17
Hills	12
Lack of ramps	10
Physical ability	6
Crime	0

Table 2: Barriers to bicycling

What changes would help you to walk more often?	
More biking and walking paths	117
More sidewalks	90
Sidewalks in better condition	54
Safer ways to cross the street	48
More signs marking walking routes/destinations	46
More street lights	38
Slower traffic	18
More sidewalk ramps	14

Table 3: Changes to encourage walking

What changes would help you to bike more often?	
More biking and walking paths	121
More bike lanes	92
More signs showing biking routes/destinations	60
More signs that show bikes can use the street	47
Safer ways to cross the street	41
Education on how to bicycle on streets	19
Slower traffic	18
Better street lights	18

Table 4: Changes to encourage bicycling

Transportation Values

Transportation planning for all modes requires making trade offs as a community must balance competing demands for safety, cost effectiveness, moving cars quickly, and moving high numbers of cars. In a community these priorities may also shift depending on the neighborhood. For example, in the City of St. Charles, Main Street does not allow cars to move quickly, but the design does foster businesses and creates a pleasant walking area. We asked respondents to rank the four often competing values of safety, volume (how many cars a street can move), speed (how quickly cars can travel on a street), and cost (how much it costs to build and maintain a street).

Safety was by far the most commonly picked top priority, while cost was the fourth most important priority for the majority of respondents. Respondents were relatively evenly split on volume or speed being the second highest priority. Overall, respondents wanted safe roads, and cost was not seen as the highest priority. At the same time, respondents value speed and volume in roads.

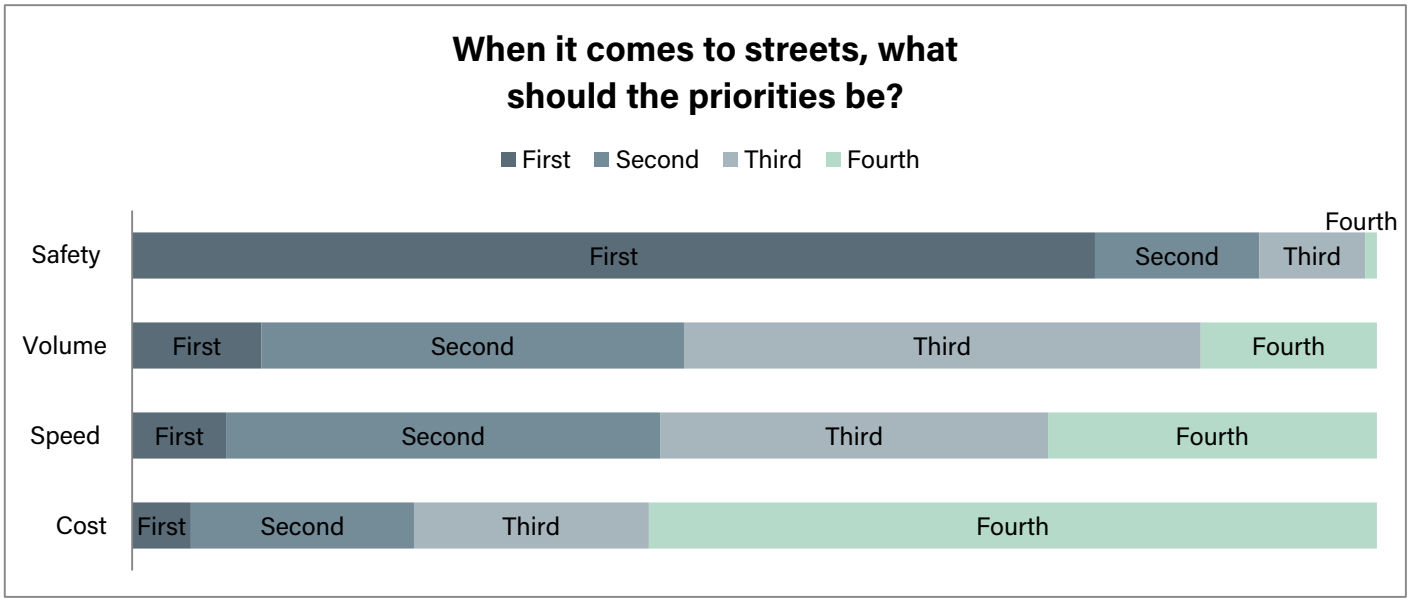


Figure 7: Transportation value

We also asked what kind of trips matter the most, to better understand what types of destinations and what times of day the transportation system should be designed around. For example, when streets are evaluated by how quickly cars are able to travel during peak hours, the design will emphasize work trips the most. The survey specifically asked about what kind of trips are important for people walking, bicycling, driving, or taking transit. Most respondents ranked "Going to parks or trails" as the most important, suggesting that respondents were focusing on walking and bicycling trips. We did not constrain the answers, so respondents were able to select all trips as important. Overall, the respondents thought most trips were at least somewhat important, which suggests that when planning for transportation, the City of St. Charles should look at how a decision impacts people running errands, going to church, or going to parks during non-peak hours and not just evaluate traffic during peak hours.

When it comes to transportation decisions, how should the following trips be considered for people bicycling, walking, driving, or taking transit?	Mean	Mode	Median
Going to parks or trails	4.220	5	4
Going to school	3.877	4	4
Going to work	3.795	4	4
Going to stores	3.795	4	4
Going to visit friends/other social events	3.664	4	4
Going to restaurants and cafes	3.645	4	4
Going to places of worship	3.345	4	4

Table 5: Importance of trips

Accessories

In the longer version of the survey, respondents were asked about walking with accessories. The purpose of the question was to learn more about challenges people using canes, wheelchairs, strollers, carts, and other walking accessories face. Eleven respondents reported using strollers or canes, with no other mobility devices reported. Three people reported using smart phone apps, and three remaining responses were dog, bike trailer, and bike. Overall, respondents felt neutral towards the safety and pleasantness of using their mobility device in the City of St. Charles. They were more favorable on the ease of using their walking accessory in the City of St. Charles.

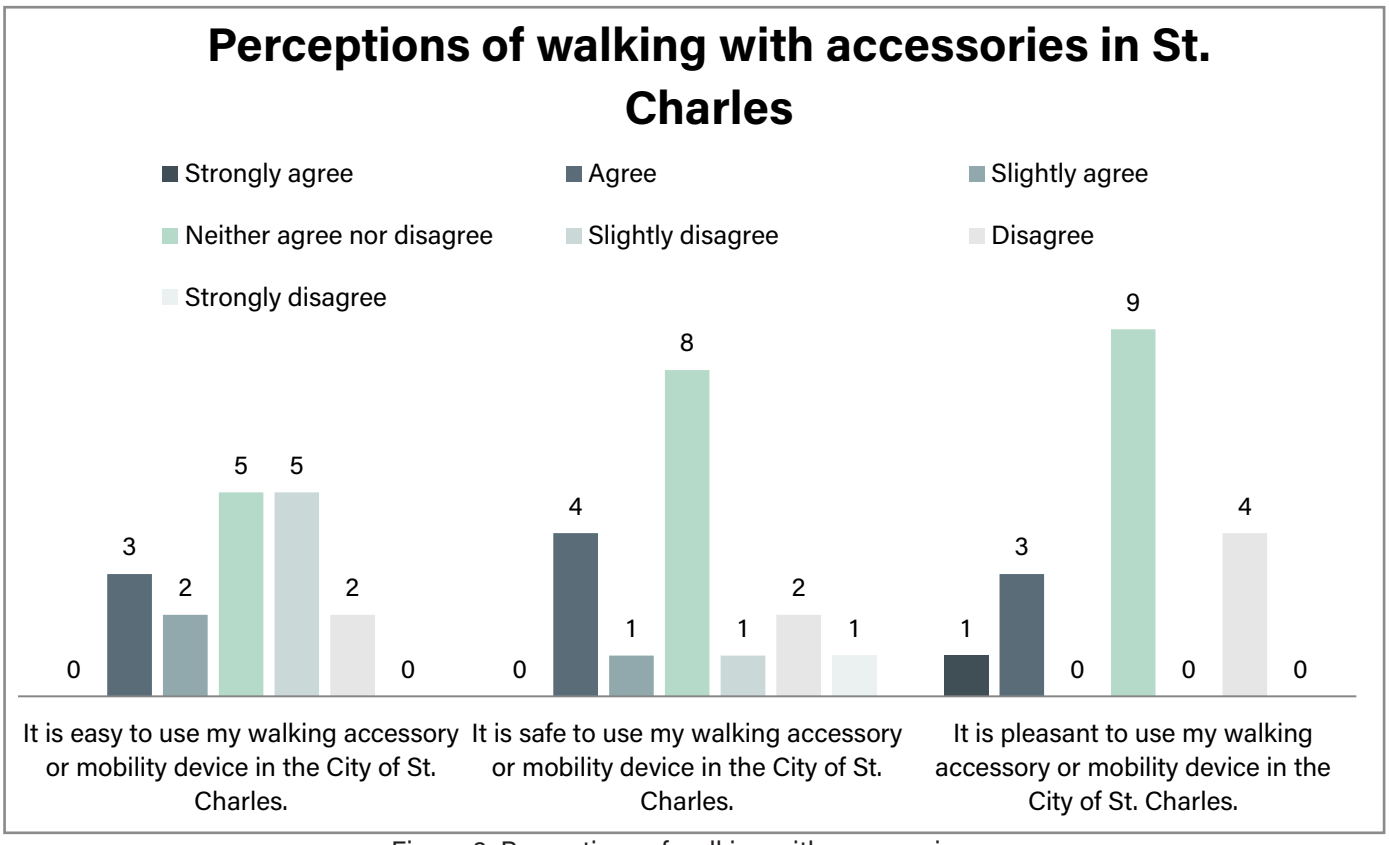


Figure 8: Perceptions of walking with accessories

Specific Recommendations

The survey also included a few questions about specific recommendations that will be in the plan, including education, encouragement, bicycle parking, and specific barriers.

When asked which events and programs would be good for their community, respondents identified community walks, fun runs, and programs that encourage people to walk to local businesses as top priorities. The City of St. Charles already hosts community walks and fun runs and has a walkable city center filled with local shops. Encouraging residents to take advantage of these great walking opportunities may help to increase walking in the City of St. Charles.

Respondents were also asked to identify places that need more bicycle racks; stores and parks were by far the most common answers. Local stores and parks were also the destinations that people would like to bicycle to more frequently. Supplying bicycle parking at these locations may reduce motor vehicle parking demand.

Finally, respondents were asked to identify which streets were particularly difficult for walking and bicycling. The most commonly identified streets for both modes are listed to the right. During the time this survey was open, 5th Street was undergoing construction, which may have skewed the results.

Please check the events and programs that would be good for walking in your community.	
Community walks and fun runs	67
Programs that encourage walking to local businesses	65
Neighborhood walking groups	53
Programs that encourage children to walk to school	46
Greater police enforcement of transportation laws	34

Table 6: Events and programs

Where in your community could bicycle racks help people to bicycle more?	
Stores	89
Parks	85
Community centers	53
Schools	48
Transit stops	26

Table 7: Bicycle parking

Please share any streets that are particularly difficult to walk on.	
5th Street	7
Main Street	7
First Capitol Drive	6
Kingshighway	4
Boone	4
Crossing Highway 94	4
Elm Street	4

Table 8: Difficult walking streets

Please share any streets that are particularly difficult to bicycle on.	
5th Street	8
Elm Point Industrial Drive	4
Arena Parkway	4
Highway 94	4
Elm Street	4

Table 9: Difficult bicycling streets

REVIEW OF EXISTING PLANS AND POLICIES

The following review summarizes existing plans and policies as they pertain to walking and bicycling in the City of St. Charles. The policy review starts at the federal level and moves toward more local plans and policies.

FEDERAL

Since March of 2010 the policy of the U.S. Department of Transportation (USDOT) is to "incorporate safe and convenient walking and bicycling facilities into transportation projects." Recommended actions most relevant to this plan are:

- Considering biking and walking equal to cars when designing and updating infrastructure.
- Ensuring transportation options for people of all ages and abilities.
- Making biking and walking part of doing business for the agency, by collecting data on biking and walking, performing regular maintenance on biking and walking facilities, and setting mode share targets.

The USDOT also recommends going beyond minimum design standards to ensure that facilities are safe, comfortable, and able to accommodate increased demand. In August of 2013, the USDOT showed its commitment to exceeding standards by endorsing two design guidebooks that recommend higher standards for biking and walking: the National Association of City Transportation Officials' Urban Bikeway Design Guide and the Institute of Transportation Engineers' Designing Walkable Urban Thoroughfares: A Context Sensitive Approach.

In September of 2014, the USDOT announced the Safer People, Safer Streets Initiative, which seeks to improve research and data collection on pedestrian and bicycle safety and do more to encourage local government officials to improve pedestrian and bicycle infrastructure. By collecting data on pedestrian and bicycle safety, cities can better identify opportunities for infrastructure improvements. Properly planned infrastructure improvements can improve safety and encourage more people to walk or bike. Without better data collection and infrastructure improvements, cities will remain largely unsafe for bicyclists and pedestrians. As part of this initiative, USDOT Secretary Anthony Foxx launched the Mayor's Challenge for Safer People, Safer Streets. This Challenge encourages mayors to implement Complete Streets policy, collect bicycle and pedestrian data, and encourage safe road behaviors.

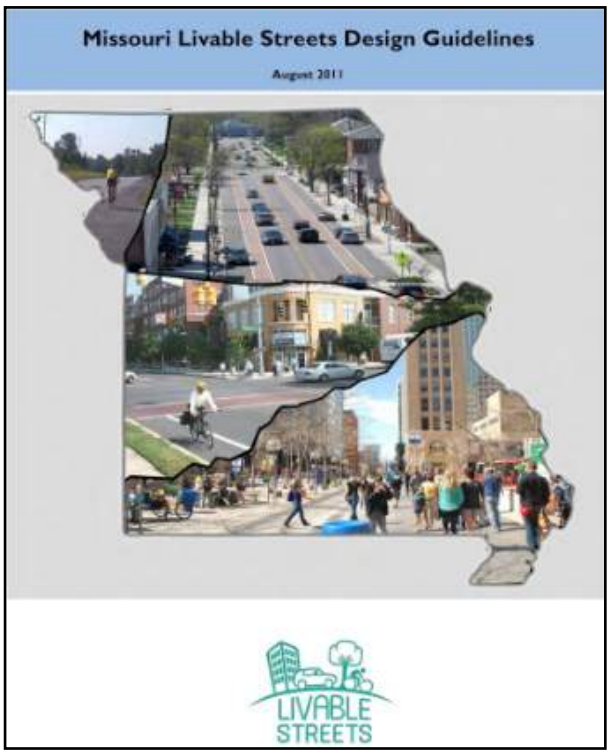
In May of 2015, the Federal Highways Administration (FHWA) released a 148-page guidebook titled "Separated Bike Lane Planning and Design Guide." The guidebook notes tremendous growth in protected bike lanes throughout the country in recent years. Since 2011 "they have doubled in number...and may double again by 2016." After surveying over 35 communities on lessons learned during the process of installing bicycle infrastructure, the FHWA compiled this "menu" of best practices for implementing bicycle lanes or cycle tracks.

In May of 2016, the FHWA released a statement about new street design guidelines on National Highway System (NHS) roadways with speed limits under 50 mph. The new guidelines share that 11 out of the 13 current design criteria have minimal influence on the safety or operation on urban streets and that these types of streets need to be designed differently than rural highways connecting communities. The two street design guidelines to still follow on NHS roadways are design loading structural capacity and design speed. This important change will improve the safety of all modes of transportation and allow for more flexibility for communities to design streets that make sense for improving connectivity and safety.

In the 21st century, the USDOT has shown a steady move towards a higher level of design standards for biking and walking. In the context of this plan, it is prudent to assume the trend will continue, and strive for design solutions that will anticipate USDOT policy through bicycle and pedestrian friendliness.

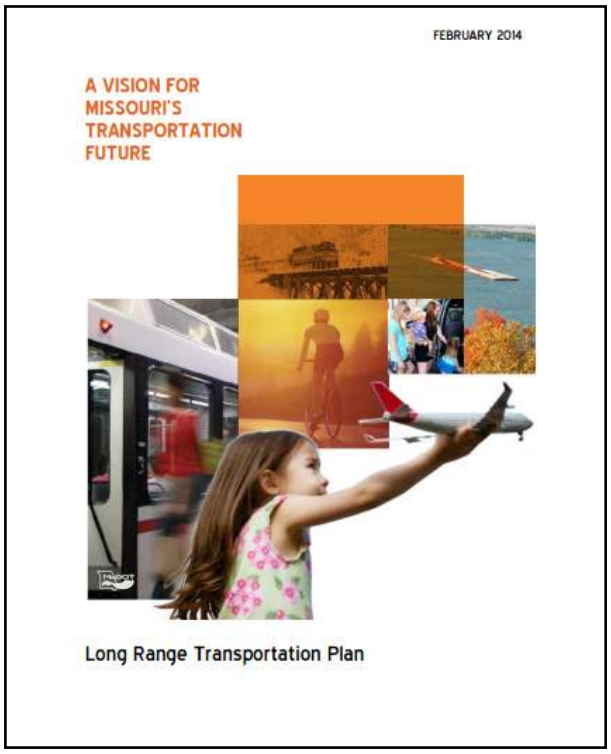
STATE

In 2011, the State of Missouri adopted a Complete Streets resolution. Accordingly, the Missouri Department of Transportation (MoDOT) actively works to incorporate bicycle and pedestrian facilities into projects. Municipalities can partner with MoDOT to improve biking and walking access during routine maintenance of MoDOT facilities by showing demand and a plan to enhance connectivity for biking and walking throughout the community. MoDOT operates state highways Route 94, Route 364, and Route 370 within the City of St. Charles. Within the City of St. Charles, Route 94 includes First Capitol Drive, West Clark Drive, N. 2nd Street, Tecumseh Street, and N. 3rd Street. Additionally, MoDOT operates interstate highway 70, which is within the boundaries of the City, but is a separated highway for motor vehicles only.



In 2013, MoDOT undertook an update to their long range transportation plan, with MoDOT on the Move. Two of the four goals are directly related to walking and biking transportation:

- Keep all travelers safe, no matter the mode of transportation
- Give Missourians better transportation choices



In support of these goals, the plan states that road projects are evaluated for demand and need, and bicycling and walking facilities are integrated into projects when needed. Specific treatments mentioned are upgrading signs, signals, lighting, and sidewalks or bicycle lanes.

The plan focuses on the financial implications of the decline in demand for car travel, and the concomitant increase in demand for passenger rail, transit, walking and bicycling.

In July of 2015, the Missouri Highway and Transportation Committee approved the 2016 - 2020 five year plan for MoDOT, called the Statewide Transportation Improvement Program (STIP). There are 577 projects planned in this year's STIP, a nearly 30% decline from last year. The projects announced almost exclusively focus

on maintaining currently existing infrastructure. Any plans for improvements on MoDOT routes must be funded and maintained by the City of St. Charles.

REGIONAL

St. Charles Area Transit

St. Charles Area Transit (SCAT) has five bus routes available throughout the county connecting riders to various attractions and to the region's Metrolink system at the North Hanley station in St. Louis County. There are currently no plans to expand the SCAT system.

Moving Transit Forward,

Bi-State Development Agency (Metro Transit)

The City of St. Charles is not within the Metro Transit service area, but the plans are relevant as SCAT connects to Metro services. In the next five to 10 years, there are no foreseeable major transit projects in the planning area. Metro transit's long-range plan mentions one potential major route, a bus rapid transit land along Interstate 70 that would potentially improve transit access from O'Fallon through the City of St. Charles to Earth City. Metro Transit concluded a feasibility study for the first phase of rapid transit, and the I-70 route was not included as a recommended route.

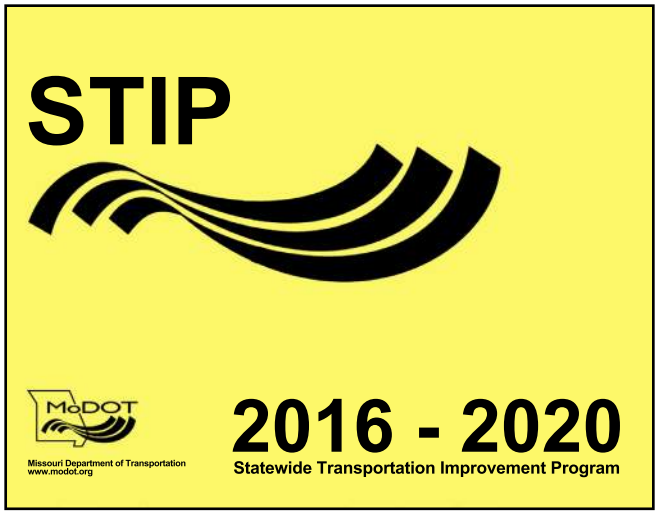
St. Louis County Metrolink Expansion Survey and Feasibility Study

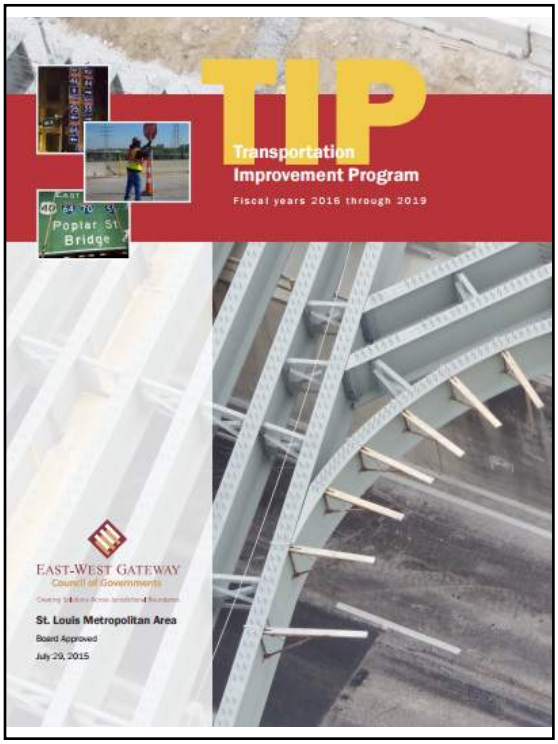
St. Louis County government is seeking public input on three options to potentially expand Metrolink. After receiving public input on the potential new routes, the county plans to conduct a feasibility study for implementation. None of the proposed routes connect St. Charles directly with Metro's transit system, but the "Daniel Boone" option would bring riders to the nearby Westport Plaza area.

Transportation Improvement Plan 2016 - 2019,

East West Gateway Council of Governments

The 2016-2019 Transportation Improvement Plan includes several updates that improve bicycle and pedestrian access in the City of St. Charles.





Projects in this plan include expanding the Centennial Greenway over the state highway 364 to Muegge Road and Old 94. Additionally, the plan includes sidewalk improvements along South River Road between Friedens Road and South Main Street, improved access to Fairgrounds Road near I-70, and the reconstruction of Droste Road between Duchesne and West Clay.

Connected 2045,

East West Gateway Council of Governments

The plan recommends adding lanes along the stretch of I-70 between state highways 94 and 370 in 2026 – 2035. The Connected 2045 Plan also includes a small list of potential bicycle and pedestrian oriented projects. Included in this report are plans for a new bicycle and pedestrian bridge to span the Missouri River and continuing updates to the Great Rivers Greenway River Ring of connected multi-use paths.

Gateway Bike Plan,

The Great Rivers Greenway

The Great Rivers Greenway, the regional recreation tax district, created the Gateway Bike Plan to focus on connecting the region through bike routes. The emphasis is on supplementing existing multi-use paths and future paths planned by Great Rivers Greenway.

The Gateway Bike Plan includes plans for bicycle lanes along the following streets:

1. Friedens Road, from Old Highway 94 to S. River Road
2. S. River Road, from Friedens Road to S. Main Street
3. Fairgrounds Road, from Friedens Road to Boone's Lick Road
4. Boone's Lick Road, from Fairgrounds Road to S. 5th Street
5. First Capitol Drive, from W. Clay Street to S. 5th Street
6. W. Clay Street, from Zumbehl to S. Duchesne Drive
7. N. 5th Street, from Jefferson Street to Little Hills Expressway
8. Randolph Street, from Duchesne to N. Kingshighway Street
9. Mueller Road, from New Town Boulevard

to Boschertown Road
10. Muegge, from Old Highway 94 to Ehlmann Road
11. Hackman Road, from McClay Road to Timberidge Drive
12. MO-370 (a buffered bike lane)

The Gateway Bike Plan also includes plans for shared lane routes along the following streets:

1. S. Main Street, from Veterans Memorial Parkway to W. Clark Street
2. West Clark Street, from S. Main Street to N. Kingshighway Street
3. N. Kingshighway Street, from First Capitol Drive to N. 5th Street
4. N. 2nd Street, from W. Clark Street to MO-370
5. Duchesne Drive, from W. Clay Street to Randolph Street
6. Elm Street, from N. Kingshighway Street to Sierra Pointe Drive
7. Droste Road alongside McNair Park
8. Nathan Avenue, from Boone's Lick Road to First Capitol Drive

Walk-Bike-MO River Connections,

St. Charles, Bridgeton, Maryland Heights, MoDOT, and Great Rivers Greenway

In 2014, MoDOT, Great Rivers Greenway, and the cities of St. Charles, Bridgeton and Maryland Heights jointly applied for Transportation Investments Generating Economic Recovery (TIGER) funds to build bicycle and pedestrian facilities throughout the tri-city area. The proposed projects were not selected for the most recent round of TIGER funding, though they would have greatly improved bicycle and pedestrian access.

The proposed bicycle and pedestrian facilities impacting St. Charles included:

1. A multi-use trail connecting MO-370 with the Boschert Greenway
2. A multi-use trail along I-70 over the Missouri River
3. A protected bicycle lane along MO-370 over the Missouri River
4. Bicycle Boulevard along W. Clay Street
5. Bicycle lanes along Friedens Road and Zumbehl Road
6. Bicycle lanes along Hawks Nest Drive
7. Bicycle lanes along Veterans Memorial Parkway
8. Bicycle lanes along Fairgrounds Road

The proposal also included plans for sharrows along Duchesne Road, Randolph Street, Elm Street, North 5th Street, and Boone's Lick Road.

Missouri River Crossing Feasibility Study,

St. Charles, Bridgeton, MoDOT, and Great Rivers Greenway

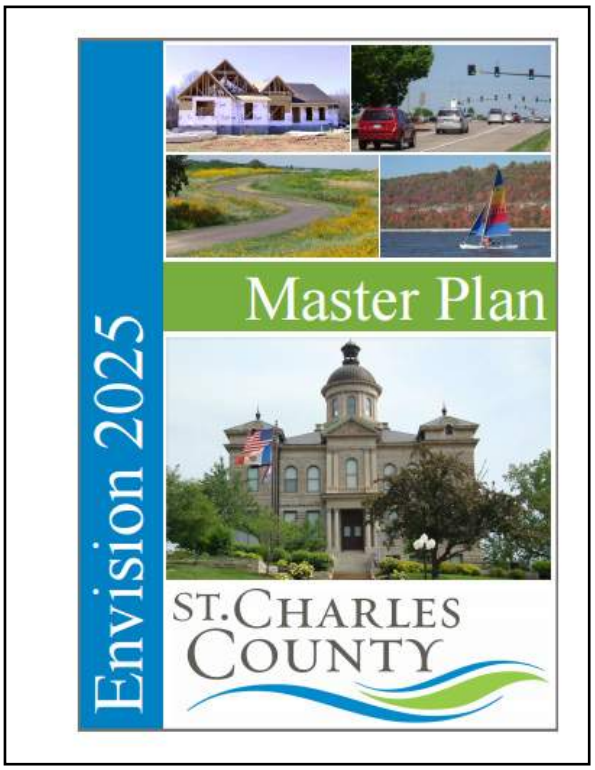
Starting in 2013, Great Rivers Greenway, MoDOT, the City of Bridgeton, the City of Maryland Heights, and the City of St. Charles conducted a feasibility study on three potential bicycle and pedestrian bridges that would span the Missouri River. The three options included a cantilevered bridge attached to the eastbound side of the I-70 Blanchette Bridge, a protected bicycle and pedestrian route along the outside shoulder of the Missouri Route 370 Discovery Bridge, and a new stand alone bridge along the site of the old Route 115 bridge. In 2014, the feasibility study concluded that the cantilevered bridge along I-70's Blanchette Bridge was the preferred option. Construction plans for this project have yet to be announced. The Missouri Route 370 Discovery Bridge remains a viable option and important project both locally, and for the national Mississippi River Trail. Currently, the City of St. Charles is pursuing funding for this crucial link in the national route.

COUNTY

St. Charles County Transportation Improvement Plan 2015 - 2017

Funded through a half-cent sales tax, St. Charles County's three-year Transportation Improvement Plan (TIP) includes several planned projects for road improvements. None of the plans in the county's TIP include adding bicycle facilities, but a planned project will add sidewalk improvements and streetscaping designs along Droste Road between W. Clay Street and Duchesne Drive.

St. Charles Master Plan Envision 2025,
St. Charles County Department of Community Development
St. Charles County's 10-year master plan does not include specific plans for new bicycle facilities, but the plan does recognize the need to provide more transportation options. The plan points out that the high rate of "single occupancy vehicles and lack of viable public transportation system" is a pressing concern that needs to be addressed. The plan suggests the county needs to further promote and encourage the use of public transportation options, bicycle facilities, sidewalks, and mixed-use trails.



CITY

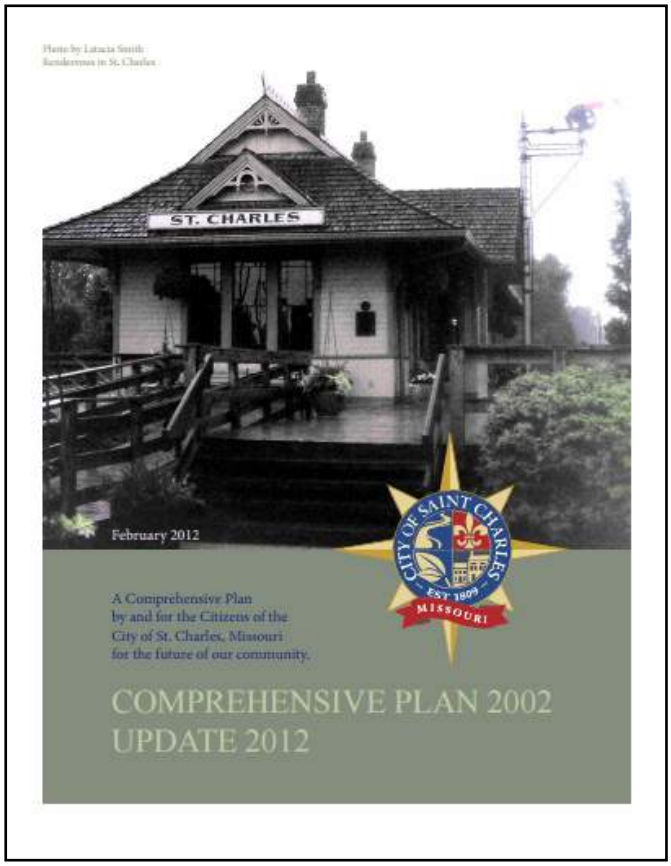
Pathways Concept Plan,
City of St. Charles Parks Department (2002)
In 2002, the Parks Department adopted the Pathways Concept Plan, which would greatly improve the walkability and bikeability of the City. The plan included five prototypes for bicycle and pedestrian infrastructure. The five prototypes were as follows:

1. Prototype A: Included on-street accommodations for bicyclists, such as shared lanes or bike lanes, and off-street facilities for pedestrians (i.e. sidewalks). The Pathways Concept Plan called for Prototype A projects along 41 streets throughout the City.
2. Prototype B: Included off-street shared use trails alongside City streets. The adopted plan called for projects along 12 City streets of this prototype.
3. Prototype C: Included off-street shared use trails alongside state and interstate highways. The adopted plan called for projects along four highways of this prototype.
4. Prototype D: Included shared use trails in greenways away from streets. The adopted plan called for 16 projects of this prototype.
5. Prototype E: Included off-street shared use trails alongside railroads. The adopted plan called for just one project of this prototype.

The off-street projects in existing parks outlined in this plan have already been implemented, along with some of the on-street routes. This plan will assess the feasibility of the on-street proposed routes and whether or not they meet current American Association of State Highway and Transportation Officials (AASHTO) standards.

2002 Comprehensive Plan (2012 Update), *City of St. Charles Department of Community Development*

The 2012 Update to the City's 2002 Comprehensive Plan includes several calls for improved connectivity and transportation access, including more options for transit, bicycling, and walking. Recognizing the social and economic burden of motor-vehicle-centered travel and congestion, the comprehensive plan calls for the expansion of transit options and bicycle and pedestrian facilities. In concurrence with its stated goals, the City applied for TIGER Grant 3 funding in 2011 to expand the SCAT system's services. Although the City was not awarded TIGER Grant 3 funding, the application was a testament to the City's commitment to public transportation.



The City's plan also includes specific recommendations that would increase bicycle and pedestrian access, such as the construction of an on-street pedestrian and bicycle path connecting Blanchette Park with the City's Historic Downtown district.

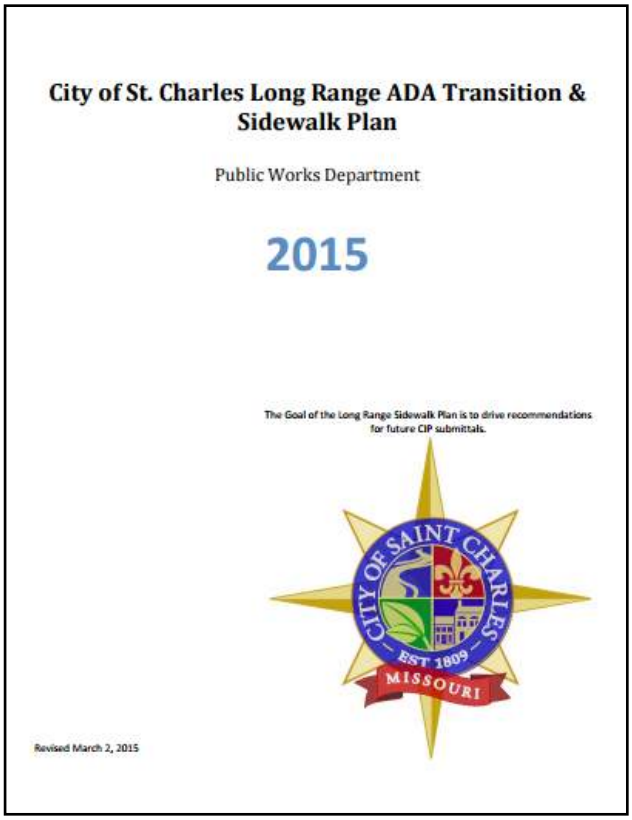
The City's call for improved transportation access is not just to reduce the burdens of traffic congestion. Increasing the bikeability and walkability of the City also enhances and preserves the City's historic features and characteristics, which attract many visitors each year. The plan proposes that creating car-free connections to the City's various historic districts (via sidewalks, trails, and shared use paths) will make the visitors' experience even more enjoyable.

Lastly, the City's comprehensive plan advocates for greater bicycle and pedestrian access simply in order to "make St. Charles a more bicycle-friendly community."

Long Range ADA Transition & Sidewalk Plan,

Public Works Department (2015)

The plan analyzed existing conditions of City sidewalks and their proximity to activity centers in order to provide an optimized approach to direct city funding for sidewalk maintenance, repair, and construction. Goals for the plan included, among others, improving pedestrian safety, transportation diversity, and accessibility to public places. The plan estimated the total cost for constructing missing sidewalk segments in the City at about $134M. No time frame for the construction of new sidewalks or the repair of poor condition sidewalks was established due to the dependence on the level of funding ascribed by City Council. However, quadrants 1 and 2 established by the plan, (neighborhoods with the highest proximity to public buildings, schools, etc., as well as those posing a higher risk to citizens or property and those with the most labor-intensive projects), will receive highest priority. The plan used data collected from 2012 to 2013.



SUMMARY OF EXISTING CONDITIONS

This section will look at how well existing development patterns and streets support walking and bicycling. An analysis of all existing facilities will be included in the plan recommendations.

OPPORTUNITIES

The City of St. Charles has both strong demand for improved walking and bicycling and a plethora of great walking and bicycling destinations, including Main Street, the Katy Trail, and a network of parks. However these destinations are not well connected with low-stress walking and bicycling routes that invite residents to choose walking and bicycling for local trips.

Residents expressed their desire to walk and bicycle more frequently in the City of St. Charles throughout the public outreach process and in the survey results. New Town and the Streets of St. Charles are both testaments to the desire for walkable places in the City of St. Charles. The large student population of Lindenwood Campus also creates demand for low-cost, environmentally friendly modes of transportation for local trips.

LAND USE AND TRANSPORTATION

The land use in the City of St. Charles shows the long and rich history of the community, from the first Capitol of Missouri to the thriving city it is today. The following overview will look at the challenges and opportunities presented by each type of land use within the City of St. Charles, including:

- Traditional town center
- Traditional residential
- Auto-oriented commercial
- Auto-oriented residential
- New Urbanist developments
- Campus

Traditional Town Center

The traditional city center of the City of St. Charles was built before cars and bicycles. The scale of the buildings and streets is welcoming for people walking and Main Street remains a popular walking destination. People from around the region drive to the City of St. Charles in order to park and walk in this traditional area. While the area does offer a charming walking experience, it does present challenges in terms of accessibility and bicycling. The sidewalks on Main Street can be uneven, and can be tripping hazards for people walking. In the survey, the sidewalks were identified as a problem for walking in the City of St. Charles. The bricks on Main Street are also uncomfortable for bicyclists, though there are parallel routes for bicyclists.

Traditional Residential

The traditional residential areas were built before automobiles became the dominant form of transportation. Relatively small lots, narrow streets, and a gridded street network distinguish the neighborhoods directly adjacent to the city center. They have the advantage of having been built close to major destinations, including the city center. As the houses are relatively closer to the street, and the streets are narrow, these neighborhoods offer a sense of enclosure for people walking, improving the walking experience. The main challenges are older sidewalks, topography, and narrow right-of-way, which can restrict infrastructure options for walking and bicycling.

Auto-Oriented Commercial

The City of St. Charles has newer commercial development along the arterials. Compared to the traditional commercial areas in the City of St. Charles, these areas have more modern sidewalks and more right-of-way, which allows for more walking and bicycling infrastructure. However, the wider roads often have higher speeds, fewer potential crossings for people walking and bicycling, and the width of the roads can feel oversized or uncomfortable for people walking or bicycling. Large parking lots in front of buildings can also discourage people from walking and bicycling. Improvements to these areas should focus on ensuring safe connections between popular walking and bicycling

destinations, such as trails, parks, and schools. In the long term, the City could consider updating codes to ensure that future building and redevelopment will make these areas feel more comfortable for walking and bicycling, by placing parking lots behind buildings for example. These efforts should be focused initially on the areas that are adjacent to traditional areas of the City.

Auto-Oriented Residential

Most of the neighborhoods built in the last 60 years in the City of St. Charles were designed for cars as the dominant mode of transportation. Similar to the auto-oriented commercial areas, these neighborhoods offer wider streets and more modern sidewalks. At the same time, these neighborhoods are often separated from destinations by larger roads that have faster traffic. They also have fewer destinations within walking distance, as the land use is less compact. However, the park network in the City of St. Charles and the commercial uses along arterials do ensure that there are some destinations within walking or bicycling distance for all of these neighborhoods. Similar to the auto-oriented commercial areas, the largest opportunities for the newer residential areas are ensuring safe connections to destinations, including schools, parks, and shops.

New Urbanist Developments

The City of St. Charles has two new urbanist developments: New Town and the Streets of St. Charles. New Town is a residential area with a mixed-use town center that was designed to be walkable, with sidewalks and buildings designed to provide a pleasant walking environment. The New Town development deliberately recalls the walkability of the traditional residential areas. However, it was developed several miles from the traditional city center and does not have as many destinations within walking distance, though a multi-use path connects it.

The Streets of St. Charles is also a return to more traditional design, and features a mix of uses, including commercial, office, and residential uses. The area between the buildings offers sidewalks, street furniture, and parking, to make the area accessible and pleasant. While the Streets of St. Charles is physically very close to the traditional city center and the Katy Trail, the wide, busy roads make walking and bicycling trips difficult. For both of these developments, connections to the rest of the City are a key challenge.

Campus

The Lindenwood Campus offers walking and bicycling connections for students within the campus. However, the campus lacks safe walking and bicycling connections to the city center. Improvements within the campus are outside of the scope of this plan. However, strengthening connections to the campus could increase walking and bicycling in the City, due to the high residential concentration on the campus.

EXISTING FACILITIES EVALUATION

The following evaluates the existing bicycling and multi-use path facilities in St. Charles. Entrances to parks are evaluated for compliance with Americans with Disabilities Act (ADA) in terms of access. On-street facilities are evaluated for compliance with the American Association of State Highway Officials (AASHTO) Guide for the Development of Bicycle Facilities, 4th Edition, in addition to the Urban Bikeway Design Guide, 2nd Edition by the National Association of City Transportation Officials (NACTO). Based on the evaluation of the facilities, recommendations are made when appropriate to bring facilities into compliance and to improve the user

ON-STREET FACILITIES

Fairgrounds Road Buffered Bicycle Lane

Location: Fairgrounds Road from Friedens Road to Talbridge Way

Facility Type: Buffered Bicycle Lane

Assessment: These comfortable bicycle lanes are over 6′ wide, with a generous buffer of at least 5.′ Both the width of the lanes and the buffers exceed minimum requirements. The buffers are painted with diagonal stripes, in compliance with NACTO guidelines. The pavement is painted green at the intersections to indicate potential conflict zones.

The green paint is fading, which is typical of green-painted intersections (see Figure 9). The bicycle lane and buffer also end abruptly without any guidance for bicyclists as they merge into traffic at Talbridge Way (Figure 10). The bicycle lanes do not connect to facilities at either end to allow for longer journeys.

Recommendation: Maintain the existing lanes and intersections. In the long run, connecting the lanes to a larger network of low-stress infrastructure would allow for more to users to enjoy the buffered bicycle lanes.

Figure 9: Green paint in conflict zone

Figure 10: Bike lane ends

New Town Boulevard

Location: Boschert Greenway to Mueller Road

Facility Type: Bicycle lane, Share The Road signage

Assessment: This bicycle lane connects multi-use paths along New Town Boulevard. The bicycle lanes comply with minimum widths in AASHTO 2012. Bicycle lanes should be buffered from the road when there is adequate width, rather than being adjacent to the road (see Figure 11).

On streets with speed limits over 35 mph, NACTO recommends a higher level of separation than a bicycle lane. New Town Boulevard has a speed limit of 35 mph, but the operating speed appears to be faster, based on observing the posted reported speeds of cars on the digital speed warning sign.

Currently, the markings are faded in places and the bicycle lanes contain debris from passing cars. Maintenance on bicycle lanes along high-speed roads can be challenging due to debris. The share the road signage may be confusing on a street where there are bicycle lanes.

Recommendation: Extend and connect the existing multi-use paths. This will provide a continuous, low-stress route for bicyclists. At the intersection with Elm Point Industrial Drive, the bicycle lanes should be dashed straight through the intersection rather than curving onto Elm Point Industrial Drive (see Figure 12).

Figure 11: Bicycle lane on New Town Boulevard

Figure 12: Bicycle lane on Elm Point Industrial Drive

Olive Street Shared Lane Markings

Location: Olive Street from Katy Trail to North 5th Street

Facility Type: Shared Lane Markings, Share The Road Signage

Assessment: Based on AASHTO 2012, Share The Road signs should not be used to indicate a bike route, as it does not improve quality of service for people on bicycles. Shared lane markings are used primarily to indicate the desired lane position for bicyclists and to provide wayfinding when there is not enough space to provide bicycle lanes.

This steep section without separation from traffic links the Katy Trail and the Boschert Greenway, two low-stress facilities that appeal to a wide variety of bicyclists. While the current markings follow the basic requirements of AASHTO and NACTO, a steep ascent without separation from traffic is a barrier to many bicyclists that may otherwise be interested in riding these two trails.

Recommendation: Remove the parking along the west side of the street to create enough room to stripe a 6' bicycle climbing lane. Continue to provide shared lane markings for bicyclists traveling downhill. Replace the Share The Road signage (see Figure 15) with Bike Route or Bikes May Use Full Lane signage.

Figure 13: Olive Street markings guide bicyclsts to correct lane position

Figure 14: Shared lane marking on a steep section of Olive Street

Figure 15: Partial Share The Road sign assembly on Olive Street

MULTI-USE PATHS

Boschert Greenway

Location: Olive Street to New Town Boulevard

Assessment: The Boschert Greenway is a comfortable multi-use path that exceeds the AASHTO recommendations. The multi-Use path has video-activated Rapid Flash Beacons (RFBs) at intersections with major streets. Based on observation and comments from the community, drivers do not consistently yield at the RFBs.

Recommendations: Enhanced intersection treatments, such as bulb-outs or crossing islands, may help to slow traffic and increase yielding at the RFBs.

Figure 16: RFB on the Boschert Greenway

New Town Boulevard

Location: Boschert Greenway to New Town Drive, 370 to Fountain Lakes Industrial Boulevard, Glazer Way to Mueller Road

Assessment: This multi-use path exceeds the AASHTO recommendations for width. Detectable warning surfaces are present at street intersections, but not all driveway intersections. There is a crushed stone multi-use path that connects to New Town Boulevard and extends to the northern portion of Fountain Lakes Park, however there is no clear signage to let riders know where the trail goes.

Recommendations: The multi-use path should be extended to Highway B. Clear wayfinding signs should be set up to let users know that Fountain Lakes Park can be accessed via the trail.

Figure 17: Multi-use path along New Town Boulevard

1st Capitol Drive

Location: West Clay Street to First Capitol Drive

Assessment: This recently built path meets the AASHTO width recommendations. However, there is no signage indicating that it is a multi-use path or warning drivers to watch for people bicycling in both directions. The path abruptly transitions into a sidewalk at the eastern terminus.

Recommendations: Clear wayfinding and signage should be installed to make it clear that this is a path.

Figure 18: Multi-use path on 1st Capitol Drive

Fountain Lakes Boulevard

Location: Cole Creek to New Town Boulevard

Assessment: This asphalt multi-use path meets the AASHTO width requirements. However, it lacks detectable warning surfaces at intersections, wayfinding signage, and it is not continuous.

Recommendations: The path could be extended so that it connects between Pharma Medica and Rookie's Bar and Grill. Wayfinding signage could be installed to let users know about potential destinations. Detectable warning surfaces should be installed at intersections. The path is not maintained by the city, but the city should work with developers to create a continuous system by upgrading the facilities.

Figure 19: Multi-use path on Fountain Lakes Boulevard ends abruptly

PARK FACILITIES

Blanchette Park

Facility: Paved Hike/Bike Trail

Length: .50 Mile

Assessment: The multi-use use trail lacks detectable warning surfaces at internal crossings within the park.

Recommendations: Detectable warning surfaces should be added at crossings.

Figure 20: Blanchette Park Trail entrance

Boone's Lick Park

Facility: Paved Hike/Bike Trail

Length: .29 Mile

Assessment: This paved path provides a parallel route to Boone's Lick Road and it connects to Circle Park. On the north side of the park there is no reserved parking for those needing an accessible entryway.

Recommendations: Wayfinding signs could be installed at the entrances to the trail, especially on the section that terminates on Circle Drive. Detectable warning surfaces should be used when the trail meets the parking lot.

Figure 21: Entrance to Boone's Lick Park Trail

Figure 22: Neighborhood entrance to Boone's Lick Park without wayfinding

Fountain Lakes Park

Facility: Natural Hike/Bike Trail

Length: 4.74 Miles

Assessment: The trails are wide and flat, with what appears to be a crushed gravel surface that can be challenging for people on bicycles or people in wheelchairs. If these trails are not part of a larger network or traveled throughway, and are instead intended for recreational walking, the surface does not have to meet the requirements of shared-use paths.

Recommendations: If the trails in Fountain Lakes Park are to be used as part of the shared-use path network, the surface should be firm, stable, and slip resistant. There is a crushed stone surface, but it should be evaluated if it is suitable for people on bicycles or people in wheelchairs, as asphalt or concrete is not suitable given the soil conditions. The trail and underpass that connects the two sides of the park needs to be updated to provide a more stable surface for people walking and bicycling.

Figure 23: Fountain Lakes Park Trail Entrance

Figure 24: Person walking in Fountain Lakes Park

Fox Hill Park

Facility: Paved Hike/Bike Trail

Length: 1.45 Miles

Assessment: The paths within Fox Hill Park link to a larger network of trails. Within the park, there are not detectable warning surfaces at every place where the path crosses traffic or the parking lot. In a few places, there are curbs that block potential access to the trails.

Recommendations: The curbs that are blocking access could be moved to allow for people on wheeled vehicles (bicycles, tricycles, mobility devices, etc.) to access the trails more easily. Detectable warning surfaces should be installed where the trail crosses traffic.

Figure 25: Curbs in Fox Hill Park

Jean Baptist Point DuSable Park

Facilities: Hike/Bike Trails

Length: Paved Trail .74 Mile, Crushed Rock Trail 1.82 Miles, Sand Trail 1.08 Miles

Assessment: The entrance to the trail adjacent to the reserved disabled parking offers a curb, but does not have a detectable warning surface. In the northern section of the parking lot, there is an entrance to the trail without a curb ramp.

Recommendations: Detectable warning surfaces should be installed at the trail entrances to the parking lot. Though this area is not served by disabled parking, a curb ramp could help those on bicycles access the trail.

Figure 26: Trail entrance in Jean Baptist Point DuSable Park

McNair Park

Facility: Paved Hike/Bike Trail

Length: 1.75 Miles

Assessment: Some of the entrances to the trail from the road in the park are cracked and lack detectable warning surfaces.

Recommendations: Pavement could be repaired at the entrances and detectable warning surfaces should be added. Wayfinding signs at the neighborhood entrances could also be added.

Figure 27: Trail entrance in McNair Park

Schaefer Park

Facility: Paved Hike/Bike Trail

Length: .46 Mile

Assessment: Trail crossings within the park lack detectable warning surfaces when they cross the road or enter the parking lot. Signs are placed in the middle of the path, potentially blocking users in wheelchairs or tricycles.

Recommendations: Signs should be posted adjacent to the trail. Detectable warning surfaces should be added where the trail intersects traffic.

Figure 28: Trail entrance in Schaefer Park

Saint Charles Soccer Complex Park

Facility: Paved Hike/Bike Trail

Length: 1.86 Miles

Assessment: The wide paved path does not have detectable warning surfaces where the trail meets the parking lot. The entrances adjacent to the reserved disabled parking are adequately wide, but several entrances have curbs partially blocking them.

Recommendations: Detectable warning surfaces should be added to trail entrances. Moving the curbs that are partially blocking trail entrances could help people on bicycles, tricycles, or with limited mobility better access the trail.

Figure 29: Curbs in front of a trail entrance at Saint Charles Soccer Complex Park

Wapelhorst Park

Facility: Paved Hike/Bike Trail

Length: 2.04 Miles

Assessment: Trail crossings within the park lack detectable warning surfaces when they cross the road or enter the parking lot. Signs are placed in the middle of the path, potentially blocking users in wheelchairs or tricycles.

Recommendations: Signs should be posted adjacent to the trail. Detectable warning surfaces should be added where the trail intersects traffic.

Figure 30: Trail entrance in Wapelhorst Park

4 PLANNING PROCESS

PLANNING PRIORITIES

The Planning Priorities guide all of the recommendations and prioritization of proposed projects. The following five priorities are the base of the Master Plan:

- Connect to key destinations and address barriers in and near the City
- Set infrastructure and land use standards that lead to desirable streets and trails
- Communicate and share the safety and health benefits of active transportation
- Strengthen connections to the Katy Trail
- Ensure accessibility for active transportation throughout the City

Drafting the Priorities

The Plan Steering Committee drafted the plan priorities after they reviewed the results of the initial public outreach. Each member was asked to make a list of the top five priorities for the Bicycle and Pedestrian Master Plan. The steering committee was then split into two groups and each group worked to come to a consensus on their top five priorities for the plan. The discussion of the top five priorities directly addressed the recurring themes found in the survey and public outreach. Finally, the whole committee reconvened and worked together to create a single top five priorities list for the plan which was then further vetted by the City of St. Charles staff.

Trailnet used these final five priorities as a guide for all of the plan recommendations and prioritizations.

The individual groups' priorities are detailed on the following page, followed again by the final five priorities that form the base of this Master Plan and that guide all of the plan recommendations and prioritizations.

First Group's Priorities:

- Connectivity
  - Key destinations and trails
    - Schools, Businesses, Stores
- Safety
  - Infrastructure and education
- Making walking and biking part of standards and zoning
- Encouraging active lifestyles
  - Messaging
  - Access
  - Outreach
  - Affordability
- Attractive and welcoming facilities and amenities

Second Group's Priorities:

- Connecting critical connections within city and outside city
  - Connect the Dots
    - Connecting key designations to other key locations
  - Transit
- Infrastructure standards
  - Wayfinding
  - Accessible universal design
  - Traffic calming/safety
- Communicate, educate, encourage
  - Target audience: community, elected officials
- Link Katy Trail
- Minimum Grid
  - Sidewalk Connectivity
  - Sidewalk Transition Plan
  - Accessibility

Final Plan Priorities

- **Connect to key destinations and address barriers in and near the City**
- **Set infrastructure and land use standards that lead to desirable streets and trails**
- **Communicate and share the safety and health benefits of active transportation**
- **Strengthen connections to the Katy Trail**
- **Ensure accessibility for active transportation throughout the City**

5 PUBLIC ENGAGEMENT PROCESS

SUMMARY OF PUBLIC OUTREACH

First Round of Public Outreach*

The first round of public outreach for the City of St. Charles Bicycle and Pedestrian Master Plan took place from August 18, 2015 through September 16, 2015. The public outreach consisted of a survey and four pop-up tabling events.

The first round of public outreach emphasized gathering comments and opinions from the public to better understand community values and priorities for transportation in City of St. Charles. The pop-up tabling events captured public comments in the following ways:

- Poster poll of six questions
- Maps of City of St. Charles, for residents to draw favorite routes and barriers on
- Comment cards
- Paper copies of the online surveys

In addition to capturing public comments, the public was able to talk to the planning team about the process. We provided fliers on the process itself and fliers with information about different forms of walking and biking infrastructure. Overall, we interacted with over 100 people and received 74 responses to the poster polls. The results from the process are summarized below.

Events

The pop-up tabling events were conceived as a chance to take the materials typically found in an Open House to public events, in order to get both a larger and wider audience for the public outreach. The tabling events were publicized on Trailnet's website and the City of St. Charles' website, as well as in emails and newsletters. The pop-up tabling events took place at popular social events in the City of St. Charles, which gave us the chance to talk with residents who may not have otherwise come to a traditional Open House. The events were:

- City of St. Charles Food Trucks in Frontier Park, August 18
- City of St. Charles Kids Block Party/ Public Works Day, August 29
- City of St. Charles Food Trucks in Frontier Park and Illumi Run 5K, September 11
- Open House at City of St. Charles City Hall, September 16

The events drew residents of all ages, especially families with children. The food truck event in Frontier Park on August 18 was very rainy and cold, so input and participation were low. The Kids Block Party/Public Works Day was very well attended, but some people were not from City of St. Charles or moved past our station because we did not have activities that attracted young children. The City of St. Charles Food Trucks in Frontier Park on September 11 and Illumi Run 5K were our most successful events, but once it became completely dark, it was difficult for residents to give us feedback. The Open House at City Hall had two residents and a few City staff members in attendance.

SUMMARY OF EARLY ACTION PROJECT – RIVERSIDE DRIVE DEMONSTRATION

The early action pop-up traffic calming demonstration was held on Tuesday June 21 along three portions of Riverside Drive: Riverside and Jefferson, Riverside and Tompkins, and Riverside and Perry. The demonstration consisted of the removal of parallel parking spaces so that temporary curb bump outs could be installed using tires and cones. The demonstration was held from 3 p.m. to 7 p.m., and coincided with the June Food Truck Festival.

The purpose of the early-action pop-up traffic calming demonstration was to offer a chance to raise awareness and capture public comments on the draft Bicycle and Pedestrian Master Plan, while showing temporary changes the City would like to pursue as permanent changes to enhance the safety of people walking and biking along Riverside Drive.

Trailnet staff, with the assistance of a few steering committee members, set up a public outreach table to capture public comments on the draft Bicycle and Pedestrian Master Plan at the Riverside and Perry location, outside of the Bike Stop Cafe.

The public outreach table captured public comments in the following ways:

- Maps of the proposed bicycle and pedestrian routes for residents to leave comments and draw upon
- Copies of the 4 E (education, encouragement, enforcement, and evaluation) recommendations
- Comment cards for feedback
- Paper copies of the online survey

Overall, Trailnet staff and steering committee members spoke with over 20 different public participants and captured the interest of many more curious onlookers who witnessed the pop-up traffic calming demonstrations in action while enjoying the City's food truck event.

The early action project was publicized on Trailnet's website and the City of St. Charles' website, as well as in emails and newsletters. On the pop-up demonstration day various signs were placed throughout Riverside Drive informing people of the demonstration and where to go to provide input and feedback on the draft Bicycle and Pedestrian Master Plan.

The food truck event drew residents and visitors of all ages and had a large turn out which helped draw attention to the pop-up demonstration. The temperature outside was hot and sunny with few clouds in the sky.

Feedback*

Residents preferred to discuss their comments with Trailnet staff and steering committee members and preferred to take the survey online. Trailnet staff and steering committee members noted the various comments received from the public on a large sheet of paper. The comments received relate to the Bicycle and Pedestrian Master Plan as well as the pop-up traffic calming demonstration.

*Comments recieved from both the first round of public outreach and the early action project can be found in Apendix A starting on page: 69

6 RECOMMENDATIONS

FOUR E RECOMMENDATIONS

While infrastructure changes are vital to improving walking and bicycling in a community, it is equally important to have supportive policies and culture in order to encourage safe walking and bicycling. The following recommendations for education, encouragement, enforcement, and evaluation directly impact two of the five planning priorities:

- Set infrastructure and land use standards that lead to desirable streets and trails
- Communicate and share the safety and health benefits of active transportation

For each recommendation, there is an estimate of resources needed to help the City of St. Charles evaluate the feasibility of the recommendations. The intended outcomes are also listed to help evaluate the purpose of the recommendation. "Reach" refers to the number of people that will be touched by the recommendation; individual and small groups are low, while a population wide intervention is high. "Impact" refers to how likely the recommendation will lead to behavior change. There is frequently a trade-off between impact and reach, as the most effective interventions require one-on-one interaction, while the interventions that reach a larger number of people are not as effective.

Recommendations are also sorted into short-term, medium-term, and long-term based on how long they will take to implement. Not all categories have recommendations in all phases, as each category has unique challenges and opportunities.

EDUCATION RECOMMENDATIONS

		Recommendation	Resources needed	Outcomes	Reach	Impact	Effort	Frequency
Short Term	1	Increase number of bicycle education classes offered in the City of St. Charles for adults and children	Staff time; funds to hire instructor; classroom space; advertising.	Increase public knowledge of bicycle safety; Encourage new riders.	Low	High	Medium	Occasional
	2	Expand offering of introductory rides on Katy Trail and greenways	Staff time; advertising; bike shop in kind time donation.	Encourage new riders.	Low	Medium	Medium	Occasional
	3	Offer walking and bicycling safety brochures at local License Office	Printing money; staff time.	Increase knowledge of road safety.	Medium	Low	Low	Ongoing
	4	Include bicycling and walking safety information in E-Newsletter	Staff time; space in newsletter.	Increase knowledge of road safety.	High	Low	Low	Ongoing
Medium Term	5	Host Walk (or Bike) To School Days at local schools, celebrating those who walk to school.	Staff time; volunteers; space in curriculum.	Increase walking and bicycling to school.	Medium	Medium	Medium	Annual
	6	Establish parent-led walking or bicycling "trains" to help children walk or bicycle to school safely	Staff time; volunteers.	Increase walking and bicycling to school; Provide walking and bicycling opportunities for children whose parents are not able to accompany them.	Low	High	High	Ongoing
	7	Bicycling safety curriculum and bicycle rodeos in Physical Education curriculum at schools.	Staff time; instructors; equipment; time in curriculum.	Increase bicycling safety knowledge and encouraging students to ride bicycles.	Medium	High	High	Annual
	8	Host bicycle rodeos at local festivals and events that draw young children.	Staff time; instructors; equipment.	Increase bicycling safety knowledge and encouraging children to ride bicycles.	Medium	Medium	Medium	Occasional

ENCOURAGEMENT RECOMMENDATIONS

		Recommendation	Resources needed	Outcomes	Reach	Impact	Effort	Frequency
Short Term	1	"Bike to Work Day" stations offering coffee and snacks on Bike to Work Day (third Friday in May)	Local businesses can join the existing network of stations; donations of coffee and snacks from local businesses.	Encourage first time riders and celebrate regular riders.	Medium	Low	Medium	Annual
Medium Term	2	Network of bicycling and walking wayfinding signs to help people find pleasant routes to popular destinations	Staff time; public outreach; signage plan; printed signs; labor to install signs; maintenance of signs.	Encourage people to walk and bicycle to local destinations; raise awareness of the convenience of walking and bicycling.	High	Medium	High	Occasional
	3	Walking groups	Staff time; promotion in recreation guide and newsletter.	Increase physical activity.	Low	Medium	Medium	Ongoing
	4	City-wide Couch to 5k program with coordinated training times	Staff time; coaches; space for training; advertising; potentially some kind of reward; can tie in with existing races.	Increase physical activity.	Medium	Medium	High	Annual
	5	Offer extended trips that include walking and bicycling as part of the trip	Staff time to organize and recruit trip; willingness to take risk on new location.	Increase physical activity.	Low	Low	Medium	Occasional
	6	Public advertising and awareness campaign to promote walking and bicycling safety	Staff time; consultant to create campaign; public ad space.	Increase interest in walking and bicycling; increase safety awareness.	High	Low	High	Ongoing

		Recommendation	Resources needed	Outcomes	Reach	Impact	Effort	Frequency
Medium Term	7	Walk or bicycle to local business award programs where downtown businesses offer small discounts or rewards to people who arrive on foot or by bicycle	Staff time; time from local businesses; commitment to giving discounts; advertising; stickers; bicycle parking in downtown.	Increase walking and bicycling for local trips.	High	Low	Medium	Ongoing
	8	Community bicycle rides	Staff time; insurance; advertising.	Increase physical activity; give inexperienced riders a chance to ride on local streets with other bicyclists.	Medium	Low	Medium	Occasional
	9	Walking and bicycling maps showing low-stress routes for navigating the City of St. Charles	Staff time; printing; distribution at local offices.	Increase physical activity.	Medium	Low	Low	Occasional
	10	Create a historical walking tour map with Saint Charles County Historical Society	Staff time; printing; support from Historical Society to design content.	Encourage walking and historical knowledge.	Medium	Low	Low	Occasional
Long Term	11	Bicycle Station in a downtown location that offers showers, lockers, and secure bicycle storage to commuters or tourists for a small fee	Construction money; staff time; ongoing maintenance and staffing.	Make bicycling to work easier for downtown workers and provide showers for Katy Trail riders	Medium	Medium	High	Ongoing
	12	Recreation bicycle facilities with regional draw, such as a pump track, a BMX track, and/or a Dual Slalom track	Planning efforts; land; construction costs; staff time; ongoing maintenance and programming.	Increase interest in bicycling; increase tourism and attract bicyclists from throughout the region.	Medium	High	High	Ongoing

ENFORCEMENT RECOMMENDATIONS

		Recommendation	Resources needed	Outcomes	Reach	Impact	Effort	Frequency
Short Term	1	Increase use of police officers on bicycles	Officers' time; increased training; bicycles and bicycle equipment.	Increase visibility of bicycling; set positive example of safe bicycling.	High	Low	Medium	Ongoing
Short Term	2	School officers add bicycle and pedestrian safety to existing curriculum	Officers' time; teaching materials; curriculum.	Increase safe walking and bicycling among children.	Medium	Medium	Medium	Ongoing
Short Term	3	Distribute cards outlining the rights and responsibilities of people walking, bicycling, and driving	Officers' time; printing costs.	Increase knowledge of traffic laws.	High	Low	Low	Ongoing
Medium Term	4	Reduce speed limits on designated routes	Officer's time, Public Works staff time, new signs.	Reduce vehicle speed.	High	Medium	High	Ongoing

EVALUATION RECOMMENDATIONS

		Recommendation	Resources needed	Outcomes	Reach	Impact	Effort	Frequency
Short Term	1	Establish a Bicycle and Pedestrian Advisory Committee (BPAC) to oversee plan implementation and progress	Staff support; meeting space; members.	Citizen involvement in implementation; ensuring plan does not sit on a shelf, maintaining interest in implementation.	Low	Medium	Medium	Ongoing
	2	Create and distribute annual reports on plan progress	Staff support; BPAC involvement; printing money.	Maintaining interest in implementation.	Medium	Medium	Low	Annual
Medium Term	3	Include questions on bicycling and walking on community surveys	Staff time; space in community survey.	Better understanding of demand for walking and biking infrastructure.	High	Medium	Low	Periodic
	4	Designate a staff person to be in charge of bicycle and pedestrian issues	Staff time.	Ensuring plan does not sit on a shelf; improve customer service.	Medium	High	High	Ongoing
	5	Seek Bicycle Friendly Community Designation	Staff time, BPAC involvement.	Recognition for efforts; assessment of current efforts.	Medium	Medium	High	Periodic
	6	Seek Walk Friendly Community Designation	Staff time, BPAC involvement.	Recognition for efforts; assessment of current efforts.	Medium	Medium	High	Periodic
	7	Adopt a Complete Streets Policy	Staff time; City Council support.	Formalize walking and biking as a priority; ensure walking and bicycling are considered in all future projects.	High	High	High	Ongoing
	8	Adopt Bicycle Parking Policy	Staff time; City Council support.	Increase bicycle parking at a low cost to the City; ensure bicycle parking is provided, just as car parking is provided.	High	High	Medium	Ongoing

		Recommendation	Resources needed	Outcomes	Reach	Impact	Effort	Frequency
Medium Term	9	Adopt a Traffic Calming Policy	Staff time; City Council support.	Establish a system for installing traffic calming to improve safety and reduce speeds.	High	Medium	High	Ongoing
	10	Institute a Bicycle and Pedestrian Checklist for projects	Staff time	Ensure bicycle and pedestrian needs are considered in all future projects.	High	High	Medium	Ongoing
Long Term	11	Establish pedestrian and bicycle zones, with strong infrastructure, form-based code, and mixed use to extend the vibrancy of downtown St. Charles.	Staff time, Council support, Comprehensive Planning.	Economic development; grow a culture of walking and bicycling; become a premiere city of choice in the U.S.	High	High	High	Ongoing
	12	Plan for "20 minute" neighborhoods to allow people to choose walking or bicycling for their daily needs.	Staff time, Council support, Comprehensive Planning.	Economic development; improve health; reduce traffic.	High	High	High	Ongoing

ENGINEERING RECOMMENDATIONS

Bicycle and Pedestrian Network Development

The bicycle and pedestrian recommendations were developed from public outreach meetings and guidance from the plan steering committee, city staff, and elected officials. The proposed recommendations focus on connecting and strengthening the existing walking and bicycling networks within the City of St. Charles. Each recommended segment evaluated how well it fulfills the infrastructure related principles of the plan:

- Connect to key destinations and address barriers in and near the City
- Set infrastructure and land use standards that lead to desirable streets and trails
- Strengthen connections to the Katy Trail
- Ensure accessibility for active transportation throughout the City

The plan recommendations focused on the desires from the public about what changes would encourage residents to walk and bike more. Residents shared more paths, upgraded infrastructure, and signage would improve and increase their use of biking or walking to destinations. People also recommended specific location improvements. The project team also evaluated past plans, existing facilities, improving intersection connections, topography, and existing street characteristics.

Recommended Bicycle and Pedestrian Network

The recommended bicycle and pedestrian network are proposed routes to increase safety and improve connectivity within the City. The bicycle network is composed of calm streets, shared lanes, bike lanes, climbing lanes, and multi-use paths. The pedestrian network is composed of calm streets, multi-use paths, and sidewalk additions. Both networks also have recommendations for connections to park/greenway and intersection improvements.

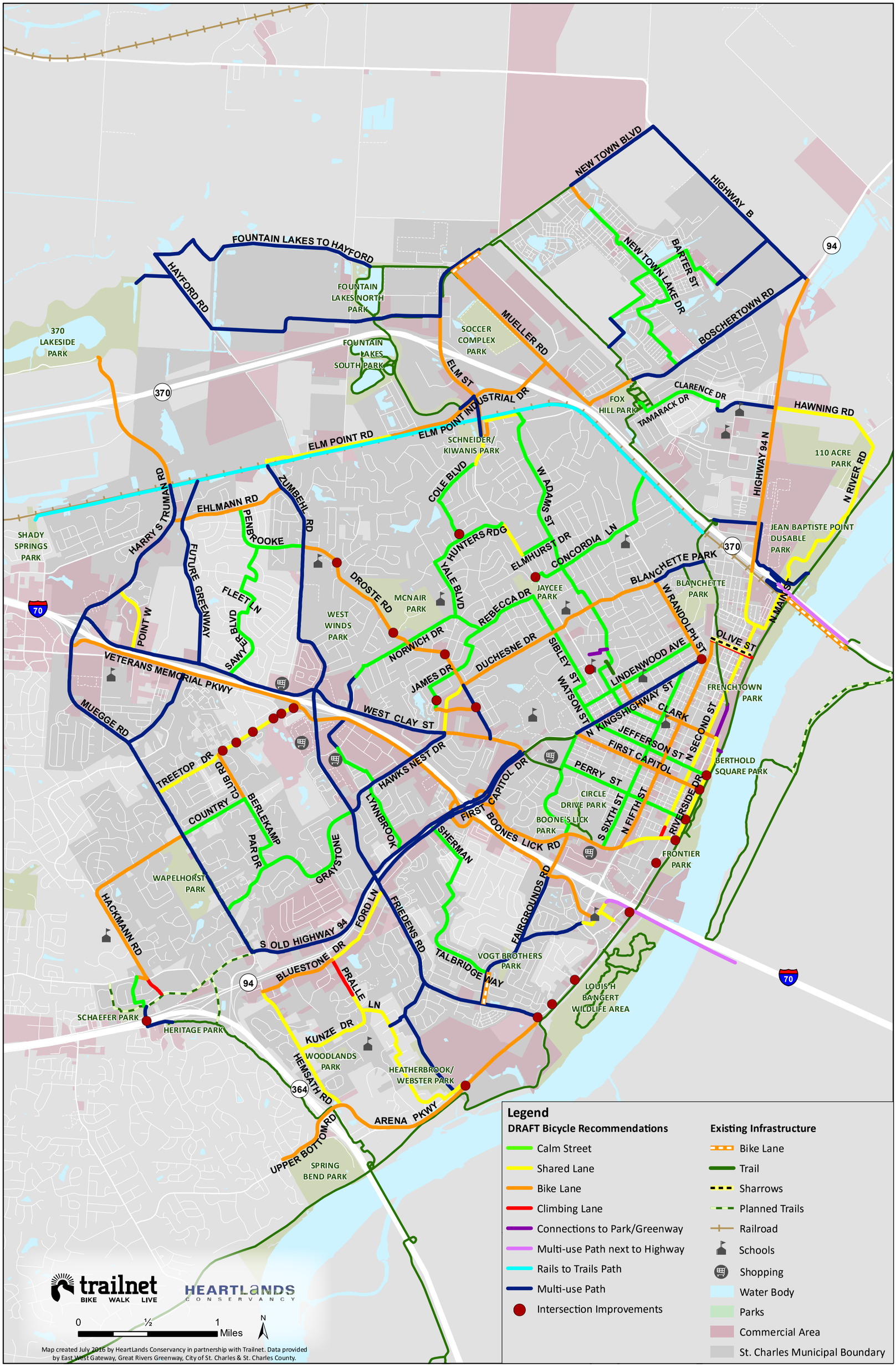
Calm streets are recommended for roadways that are less than 25 miles per hour (mph) posted speed limits, 1,500 or less average daily traffic (ADT) per day, and are on local streets. Calm streets are low stress routes that provide comfortable environments for people walking and biking because of the low speeds and volumes of people driving. The City of St. Charles has many residential neighborhoods for the calm streets approach to be a successful way to connect residents safely throughout the city. It is essential to the successes of calm streets that people traveling feel safe crossing arterial intersections.

Shared lanes are recommended for roadways with posted speed limits of 25 to 30 mph and that have 1,500 to 2,000 ADT. They are also recommended on roadways with right of way constraints, and on local and collector minor arterials.

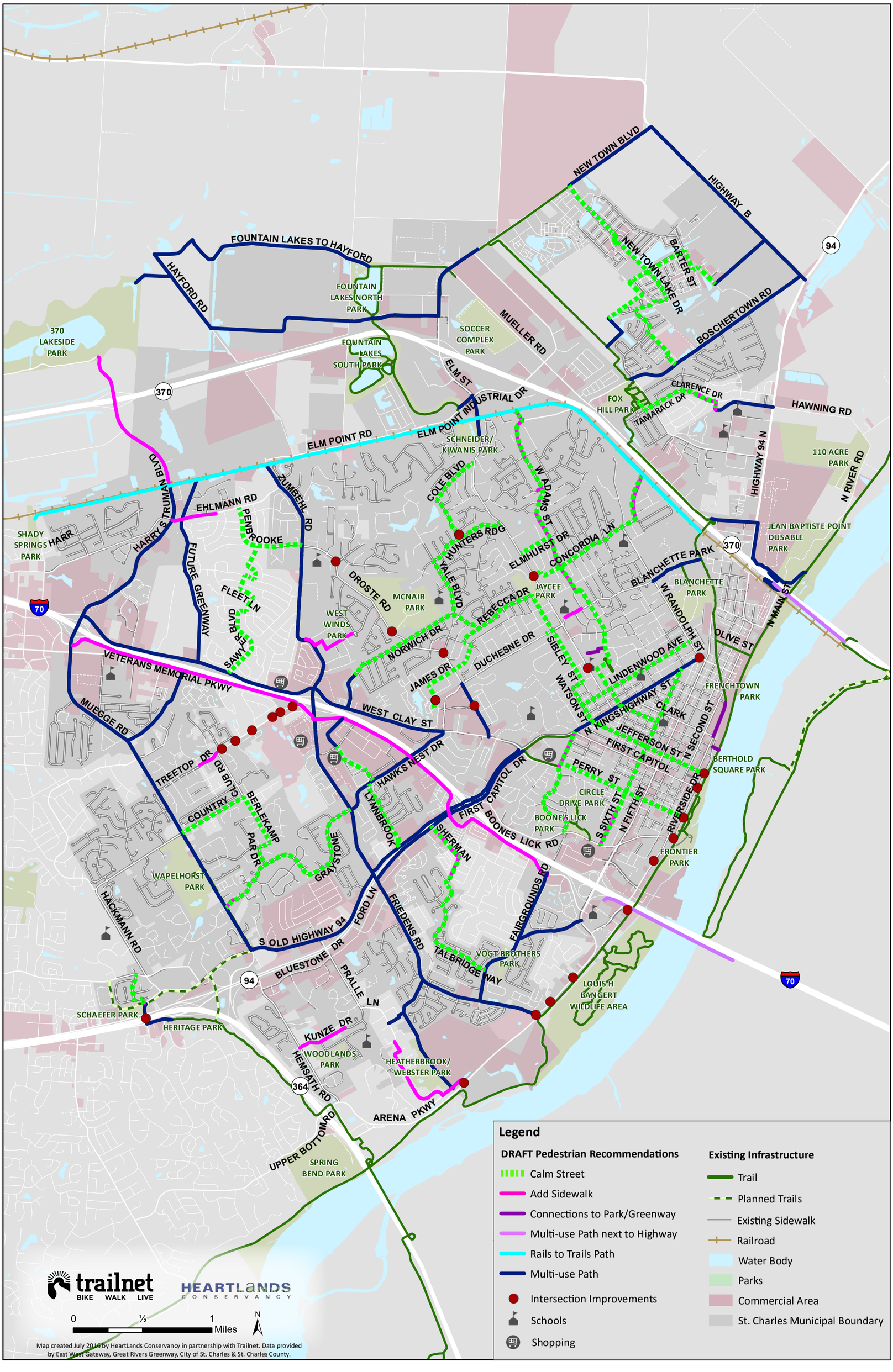
Bicycle lanes for the recommended bicycle network should be buffered if there is enough right of way and/or protected depending on ADT per day and street characteristics. Buffered bicycle lanes are recommended for roadways that are 30 to 35 mph and have less than 15,000 ADT per day. Climbing lanes are used on roadways that have steep hills and have 3,000 to 8,000 ADT per day. Climbing lanes are installed on one side of the roadway for people biking going uphill. Protected bicycle lanes are on roadways that are more than 35 mph and have 15,000 or above ADT per day.

Multi-use paths or shared-use paths are the highest pedestrian and bicycle facility to improve safety of people traveling. The multi-use paths can be used along any roadway and when feasible considered as a priority infrastructure improvement to improve walking and bicycling connectivity and safety.

City of St. Charles Bicycle Map



City of St. Charles Pedestrian Map



7 DESIGN GUIDELINES

The following chapter presents best practice design standards for constructing the recommended bicycle and pedestrian related infrastructure improvements. Each recommended improvement presents information on what, why, when, and how to use as well as provides additional references that offer further detail. The section ends with a discussion on traffic calming design options.

BICYCLE LANES

What

Bicycle lanes are defined by solid white lines 5′ or more from the edge of the roadway. Painted bicycle symbols show the lanes are reserved for the exclusive use of people on bicycles.

Why

Bicycle lanes improve safety and create a comfortable space for people biking at all levels.[17] Cities in the United States with more developed bike lane networks tend to have higher rates of cycling and lower bicycle crash rates.[18]

When

Bicycle lanes are most useful on streets with volumes over 3,000 ADT and speed limits less than 35 mph. They should not be placed right of right turn lanes.

How

Bicycle lanes should be 5′ or wider. Solid white lines with bicycle markings and arrows placed in the lanes define them. Bike lanes can be continued through intersections using dotted lines. They should not be placed to the right of right turn only lanes.

Bicycle lanes can be retrofitted onto existing streets that are below capacity through narrowing traffic lanes (a lane diet), or removing traffic lanes (a road diet).

Using the Street

People driving may not drive in the bicycle lanes. People driving should check for people on bikes when turning left or right.

People biking should be aware of motor vehicles turning at intersections. People biking are not required to ride in the bicycle lanes.

Additional References

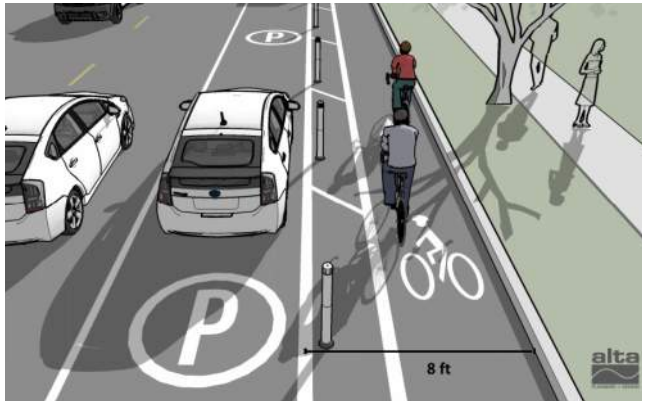
- *Manual on Uniform Traffic Control Devices, 2009* (US Department of Transportation):
  Section 9C.04 Markings for Bicycle Lanes

- *Guide for the Development of Bicycle Facilities, Fourth Edition* (American Association of State Highway and Transportation Officials):
  4.6 Bicycle Lanes
  4.7 Bicycle Lane Markings and Signs
  4.8 Bicycle Lane at Intersections
  4.9 Retrofitting Bicycle Facility on Existing Streets and Highways

- *Urban Bikeway Design Guide, Second Edition* (National Association of City Transportation Officials)

- http://nacto.org/cities-for-cycling/design-guide/bike-lanes/conventional-bike-lanes/

Bicycle Lane
Photo by: www.pedbikeimages.org / Jennifer Campos



Protected bike lanes provide the most comfort and safety
Photo by: Alta Planning & Design

BICYCLE PARKING

What
Bicycle racks provide a convenient, safe, and secure place for bicyclists to leave their bicycles.

Why
Secure bicycle parking is essential for people who use their bicycles for any kind of trip.

When
Bicycle parking should be considered for various destinations within the City such as:

- Civic buildings
- Parks
- Schools
- Trailheads
- Stores
- Restaurants
- Apartment buildings

How
Bicycle racks must support the bicycle frame and allow the user to lock both their frame and their front wheel to the rack simultaneously (two-point locking). Many bicycles feature "quick-release" tires that can be removed within seconds, so the best way to lock a bike is to use a two-point locking.

The safest, easiest, and most cost-effective design is the u-rack, shaped like an inverted U. One rack can support two bicycles. Creative racks typically cost far more money, and do not provide the safety or capacity of a standard u-rack. Wave racks, schoolyard racks, and comb racks do not support the frame, and can bend the tires on bicycles.

Placement
Racks should be placed at least 24" from the nearest building and 30" from the nearest rack. They should be placed near the entrances of buildings or other destinations to increase convenience for cyclists, without blocking doorways or presenting trip hazards to pedestrians. Racks should be placed in conspicuous, well-lit areas to discourage theft. And when possible, racks should be placed under roof overhangs or shelters to protect bicycles from weather.

Cost
Basic u-racks cost approximately $100 each; the labor for installation is approximately $200. For private development, the City can require developers to provide bicycle parking, just as it does with car parking.

Additional References
More information on site design and rack placement can be found in the Association of Pedestrian and Bicycle Professionals' "Bicycle Parking Guidelines." (c.ymcdn.com/sites/www.apbp.org/resource/resmgr/publications/bicycle_parking_guidelines.pdf)

U-racks are durable, afffordable, and popular

Decorative racks can be difficult to use and expensive

CALM STREETS

What

Calm streets, also known as neighborhood greenways or bicycle boulevards, are streets that are designed for people biking and driving to share the street safely. They are neighborhood streets with low-volume and low-speed where signs and traffic calming help people to feel safe walking and biking.

Why

Many neighborhood streets already serve as popular walking and biking routes. Calm Streets are a low-cost way to leverage these existing routes into a safe, connected network for people of all ages and abilities.

When

Calm streets are most appropriate for local streets with less than 3,000 vehicles per day. Ideally traffic will be less than 1,500 vehicles per day. The street should have good pavement and should be prioritized for repaving, as the quality of pavement impacts people on bicycles.

How

The essential features of a calm street are signs and pavement markings to designate the route and a posted speed of 25 mph or less, with traffic calming designed to reduce speeds to 25 mph or less. Traffic diversion can be used to ensure traffic volumes under 3,000 vehicles per day, but ideally calm streets will have traffic less than 1,500 vehicles per day. At intersections with neighborhood streets, a two-way stop should be used, giving priority to the calm street in order to allow bicyclists to proceed safely and comfortably. At intersections with major streets, protected crossing treatments should be used for safety and convenience.

Additional References

- *Urban Bikeway Design Guide, Second Edition* (National Association of City Transportation Officials)

- http://nacto.org/cities-for-cycling/design-guide /bicycle-boulevards/

Calm Streets
Photos by: www.pedbikeimages.org / Greg Raisman

Signs help designate calm streets and provide way-finding
Photo by: www.pedbikeimages.org / Adam Fukushima

DESIGNATED ROUTE SIGNAGE

What

Designated route signs, also known as wayfinding signs, help guide people walking and biking along safer, lower-traffic streets. Signs should include information on popular destinations and distance. Well-designed signs can enhance the aesthetics and sense of place.

Why

The best routes for driving are not necessarily the best routes for walking and biking. Many residents may not be familiar with navigating local streets beyond their own neighborhood. Wayfinding signs raise awareness of walking and biking as an option, and help people find destinations through local streets.

When

Route signs should be placed along safe streets for biking and walking. The frequency of signs depends on the number of turns in the designated route. At a minimum, signs should be placed before and after every turn or junction to ensure people are able to navigate the routes.

How

The Manual on Uniform Traffic Control Devices contains Bicycle Route signs (Section 9B.21). These signs can contain destination and distance information. Many cities choose to create customized signs, which enhance local identity, and/or contain pedestrian information as well. The Bike St. Louis wayfinding signs are a local example of custom wayfinding.

Using the Street

Route signs do not alter how people driving, walking, or biking use the street.

Additional References

- *Manual on Uniform Traffic Control Devices, 2009* (US Department of Transportation): Section 9B.20 Bicycle Guide Signs
- *Wayfinding System Study* (City of Portland, Maine, 2008)
- http://www.portlandmaine.gov/planning/wayfindingreport.pdf
- *Urban Bikeway Design Guide, Second Edition* (National Association of City Transportation Officials)
- http://nacto.org/cities-for-cycling/design-guide/bikeway-signing-marking/bike-route-wayfinding-signage-and-markings-system/

Wayfinding can be incorporated into bike route signs

Unique signs can help enhance the sense of place
Photo by: www.pedbikeimages.org / Laura Sandt

MULTI-USE PATH

What

Multi-use paths, also known as shared use paths are for people walking, bicycling, skating, or using other forms of non-motorized transportation. Paths can be in a separated right-of-way, such as the Boschert Greenway, or adjacent to a roadway.

Why

Multi-use paths create dedicated space for people walking and biking. Multi-use paths complement the on-street system by providing connectivity to destinations and sense of safety for many users.

When

Multi-use paths can be used to provide convenient access to destinations, such as parks and schools. Paths can be popular recreation destinations as well. However, acquiring the right-of-way and funding needed for paths can be quite challenging.

How

The design of the path should be based on the expected users and should be compliant with the Americans with Disabilities Act (ADA). For paths that are adjacent to a roadway, the path can follow the slope of the roadway. Trail crossing signs (MUTCD W11-15 and W11-15p) should be used in advance of all intersections. The Guide for the Development of Bicycle Facilities, Fourth Edition (AASHTO) provides a detailed engineering guide for the construction of paths.

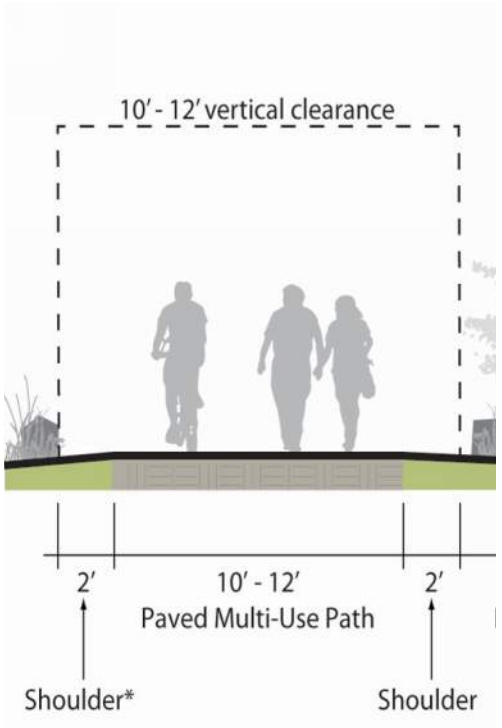
Using the Street

People driving must watch for through traffic coming from the left and right when making turns.

People on foot have the right of way, but should be aware of people on bikes. People walking must be careful when crossing streets and driveways.

People biking must yield to people on foot and give audible signal when passing. They must be careful when crossing streets and driveways.

Multi-use path



Multi-use paths should be designed for the expected users
Photo by: Alta Planning & Design

ROAD DIET

What

Four lanes of traffic are restriped to create two through lanes of traffic, with a median left turn lane. This creates space for bicycle lanes. The shoulder is used to build sidewalks to create safe and comfortable space for people walking.

Reducing the overall width of the vehicle driving lanes on the roadway can also provide extra space for the addition of bike lanes.

Why

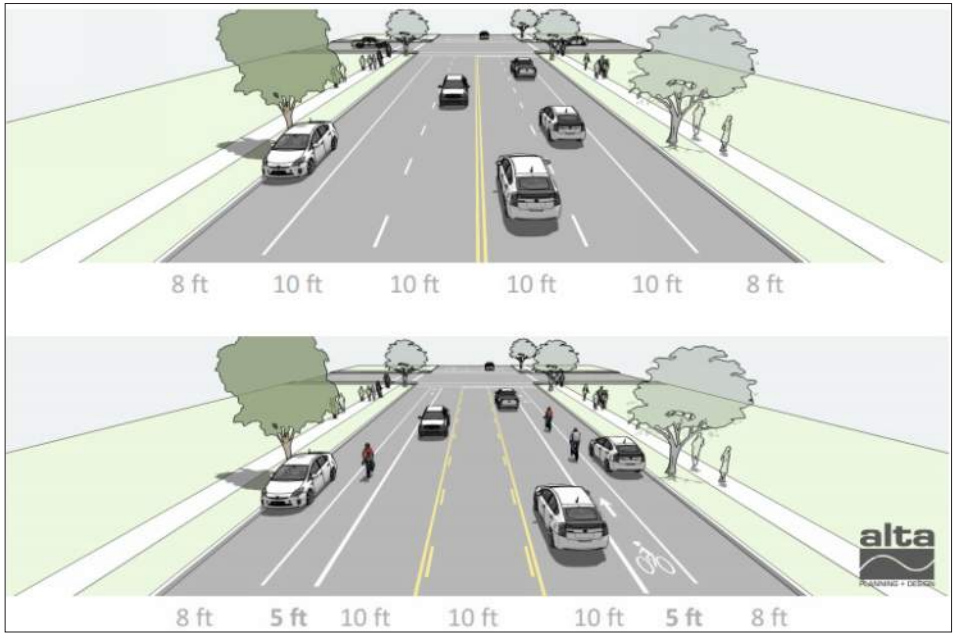
A road diet allows for easier left turns for people driving, reduces the number of individuals exceeding the speed limit, increases safety for all modes, and makes room for people walking and biking.

When

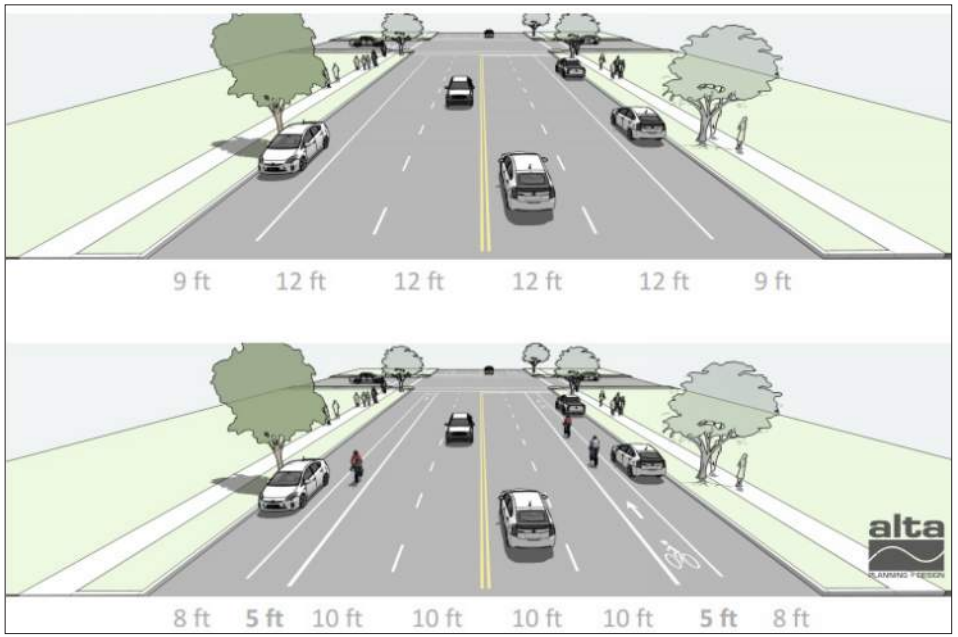
On four-lane roads with less than 20,000 ADT, a three lane road diet can improve traffic flow through the center turn lane, while giving room to people biking and walking

How

The 42′ pavement can be restriped into two 10′ through lanes, a 9′ center turn lane, and two 6′ bicycle lanes. The 5′ shoulders can be used for sidewalks on both sides. See bicycle lanes and sidewalk sections for further details.



Road diet from four to three lanes with addition of bike lane



Lane diet with addition of bicycle lanes

SHARED LANE MARKINGS

What
A white bicycle and two chevron arrows are painted in the middle of the traffic lane. The shared lane markings are applied along the entire bicycle route to help guide people biking.

Why
Shared lane markings alert people driving to the presence of people on bikes. The markings indicate proper lane position for people biking.

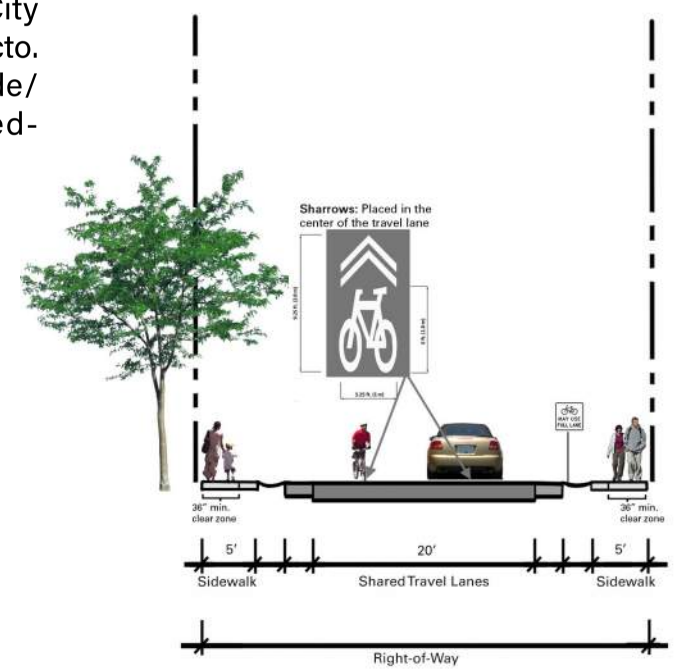
When
Shared lane markings should be used on streets with speeds under 30 mph and with less than 3,000 ADT. Streets with shared lane markings should not have centerlines, as they discourage the sense of shared space.

How
Shared lane markings should be placed every 100 to 250 feet or more along a street. More frequent placing is used to guide people biking along higher traffic routes or as wayfinding along routes with frequent turns.

Using the Street
People who drive should give people on bikes room to operate safely. If there is no opposing traffic, people driving may pass on the left, giving people biking at least 3 feet of passing distance. People biking should position themselves over the shared lane markings to increase safety, visibility, and predictability

Additional References
- *Manual on Uniform Traffic Control Devices, 2009* (US Department of Transportation): Section 9C.07 Shared Lane Marking
- *Guide for the Development of Bicycle Facilities, Fourth Edition* (American Association of State Highway and Transportation Officials): 4.4 Marked Shared Lanes
- *Urban Bikeway Design Guide, Second Edition* (National Association of City Transportation Officials):http://nacto.org/cities-for-cycling/design-guide/bikeway-signing-marking/shared-lane-markings/

Shared lane markings help to postion bicyclists on the road



Example road diet with shared lane markings and sidewalks on both sides
Photo by: Alta Planning & Design

SIDEWALKS

What
Sidewalks are elevated from the roadway by several inches, separated from the street by a curb, and made of concrete.

Why
Sidewalks improve safety and comfort for people walking.

When
Sidewalks give people walking safe and comfortable space on virtually any roadway. Play streets are an alternative to sidewalks for narrow residential streets with very low traffic and speed.

How
Sidewalks should be a minimum of 5′ wide. Street furniture or light posts should be placed to preserve at least a 48″ continuous through path. Each intersection should have a sidewalk ramp (see ADA guidelines for more information). When possible, sidewalks should be on both sides of the street. If it is only possible to provide sidewalks on one side of the street, it is important to ensure that the sidewalk is provided on the same side along the length of the street. Every time a person walking crosses the street, it increases the chances of a crash.

Additional References
- *Urban Street Design Guide* (National Association of City Transportation Officials)

- http://nacto.org/usdg/street-design-elements/sidewalks/

Sidewalk ramps make it easier for families and persons with disabilities to travel safely

Sidewalk furniture should preserve a continous throughway for pedestrians
Photo: www.pedbikeimages.org / Justin Pryzby

TRAFFIC CALMING

Traffic calming can improve safety, reduce noise in neighborhood streets, and enhance walking and biking friendliness when there is not enough right-of-way to add separate facilities.

Well-designed traffic calming should be implemented as the last step in a phased approach to lowering speeds on neighborhood streets. The following process outlines steps that should be taken before considering traffic calming:

1. **Establish need:** If residents perceive speeding on their streets, the first step is to establish that people driving are exceeding the speed limit. Speed should be monitored during peak hours and off-peak hours to determine if speeds exceed the speed limit, and by how much.

2. **Speed monitor trailer:** If speeding is determined to be a problem, the City should place their speed monitor trailer along the street, in order to raise awareness of speeding behavior. The trailers allow people driving to monitor their own speed and self-correct. The speed monitor can be placed on the street for as long as the City and the neighbors feel is appropriate. Three months after the speed trailer is removed, speeds should be monitored to determine if the trailer had a lasting effect.

3. **Neighborhood efforts:** Residents should work with city staff and elected officials to determine the purpose of the street and how to design the street to fit the characteristics of the neighborhood. If the purpose of the street is to connect residents as a non-arterial, traffic calming measures should be implemented if there is a speeding issue on the proposed street.

4. **Spot enforcement:** If speeding persists, an officer should monitor speeds on the street, and issue warnings or tickets as necessary. Speeds should be monitored three months after the spot enforcement activities in order to determine if they have had a lasting effect.

5. **Traffic calming:** If the previous steps have not had a lasting impact in reducing speeds, physical traffic calming should be considered. Traffic calming generally works to slow speeds by diverting people driving from a straight line of travel, either horizontally (like speed tables) or vertically (like an extra curve). This guide will list a number of possible traffic calming techniques that can be used. Many communities have funded traffic calming by combining it with green infrastructure, such as rain gardens.

Speed cushions designed for emergency vehicle access.
Photo by: www.pedbikeimages.org / Dan Burden

Decorative speed tables slow traffic and add character
Photo by: www.pedbikeimages.org / Kristen Langford

Options for Traffic Calming

The following traffic calming techniques can be considered on neighborhood streets. The options are listed in order of effectiveness. The first option is the lowest cost, while the cost of curb extensions or mini-roundabouts depends largely on the size and material used.

Centerlines

One of the simplest traffic calming approaches can be leaving streets free of centerlines unless they are warranted. When centerlines are not present, people driving tend to view the street as shared space, and slow down in order to be able to negotiate with oncoming traffic. As people driving often hesitate to cross centerlines when passing people on bicycles, streets without centerlines can be more bicycle-friendly as well. Currently, the City of St. Charles has many residential streets without centerlines that function well.

When streets are scheduled for resurfacing, it creates the opportunity to evaluate if streets meet the warrant for centerline striping. The MUTCD establishes that centerline markings shall be placed on streets with an ADT of 6,000 or greater (Section 3B.01). For collectors with less than 6,000 ADT and a traveled way of 20' or more, centerlines may not be necessary.

The City of Alameda has a summary of centerline removal approaches, which they consider a Level One traffic calming approach: http://www.acgov.org/pwa/programs/traffic/measures.htm#1A

Curb Extensions

The City of St. Charles has curb extensions in the downtown area. These curb extensions help to slow traffic by narrowing driving lanes and encouraging drivers to slow down in order to negotiate the tighter lanes. Curb extensions can also shorten pedestrian crossing distance and increase visibility of pedestrians crossing the street. Curb extensions can take multiple forms, from the bulb-outs to a simple extension that tightens the curb radii, in order to discourage fast turning movements.

The Urban Street Design Guide has a thorough inventory of curb extension types and applications: http://nacto.org/usdg/street-design-elements/curb-extensions/

Mini Roundabout

Mini Roundabouts are often used to enhance the aesthetics of a neighborhood, in addition to traffic calming. Mini roundabouts require people driving to turn slightly out of a straight path of travel, thereby slowing. Unlike full-size roundabouts, they do not require additional right-of-way. A mini roundabout, typically with planters or a rain garden, is placed in the middle of the intersection. Traffic circulates through the intersection in one lane, and yields upon entry to the intersection. Mini-roundabouts can reduce crashes and slow speeds on local streets.

The Urban Street Design Guide has a guide to the design of mini roundabouts: http://nacto.org/usdg/intersections/minor-intersections/mini-roundabout/

Mini-Roundabout in a neighborhood setting
Photo by: www.pedbikeimages.org / Dan Burden

Curb extensions make it easier for pedestrians to cross streets while slowing traffic
Photo by: www.pedbikeimages.org / Dan Burden

8 FUNDING SOURCES

POTENTIAL FUNDING SOURCES

Bicycle and pedestrian improvements can be funded through a variety of federal, local, and private sources. Federal funds are well suited for higher cost infrastructure projects, such as sidewalks or multi-use paths. Improvements that involve mainly paint, such as shared lane markings, could be implemented through routine maintenance, set-aside funds, or grouped as one federal funding application. The City of St. Charles should plan for the cost of ongoing maintenance, as grants for maintenance are rare.

FEDERAL FUNDING SOURCES

The current transportation bill, Fixing America's Surface Transportation (FAST) Act, provides federal transportation policy and funding for five years (Fiscal Years 2016-2020). The structure of the program remains unchanged from Moving Ahead for Progress in the 21st Century (MAP-21). In addition to funding sources through the FAST Act, there are other federal funding sources which are described below in more detail, including contact information for each source.

Federal Funding Opportunities Administered by East West Gateway Council of Governments

As part of the Transportation Improvement Plan, East West Gateway Council of Governments (East West Gateway), administers several federal transportation funds. The programs are described below.

Congestion Mitigation and Air Quality Improvement Program (CMAQ)

The CMAQ Program is a flexible funding source to State and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. Projects eligible for CMAQ include walking and biking transportation infrastructure and programs encouraging walking and biking. In order to apply for the funding, an agency must demonstrate a project's impact on emissions. Applications are made available in December and are due in February or March on an annual basis.

- http://www.fhwa.dot.gov/environment/air_quality/cmaq/
- http://www.ewgateway.org/trans/TIP/CMAQ/cmaq.htm

Surface Transportation Block Grant Program

The Surface Transportation Block Grant Program, also known as Surface Transportation Program, provides flexible funding that may be used by States and localities for projects to preserve or improve conditions and performance on any Federal-aid highway, bridge projects on any public road, facilities for non-motorized transportation, transit capital projects and public bus terminals and facilities. The funds can be used for walking and biking infrastructure, including on local roads. Applications are made available in December and are due in February or March on an annual basis.

- http://www.fhwa.dot.gov/fastact/
- http://www.fhwa.dot.gov/specialfunding/stp/
- http://www.ewgateway.org/trans/TIP/STP/stp.htm

Surface Transportation Block Grant Program Set-Aside - Transportation Alternatives Program (TAP)

Under the FAST Act, TAP is now set-aside within the Surface Transportation Block Grant Program (STBGP). The MAP-21 principle for TAP remains a highly competitive federal funding program for bike, pedestrian, and other non-automobile projects under the FAST Act. The Safe Routes to School Program and Recreational Trails program remain in TAP as well. TAP provides federal funding for a variety of alternative transportation projects. Pedestrian, bicycle, trails, and safe routes to school programs are eligible for TAP funding. Specifically,

- Construction, planning, and design of on-road and off-road trail facilities for pedestrians, bicyclists, and other nonmotorized forms of transportation.
- Construction, planning, and design of infrastructure-related projects and systems that will provide safe routes for non-drivers, including children, older adults, and individuals with disabilities to access daily needs.

The TAP set-aside does increase slightly over the life of the bill from $820 million in 2015 to $835 million in 2016 and 2017 and $850 million in 2018 through 2020.

- http://www.fhwa.dot.gov/fastact/factsheets/stbgfs.cfm
- http://www.ewgateway.org/trans/TIP/TAP/tap.htm

Federal Funding Opportunities Administered by State and Federal Agencies

Highway Safety Improvement Program (HSIP)

The HSIP emphasizes a data-driven, strategic approach to improving highway safety on all public roads that focuses on performance. Eligible projects include safety improvements for all roadway users.

- http://safety.fhwa.dot.gov/hsip/shsp/

State and Community Highway Safety Grant Program (Section 402)

Section 402 funds are used to support State and community programs to reduce deaths and injuries. Pedestrian safety has been identified as a national priority. Section 402 funds can be used for a variety of safety initiatives including conducting data analyses, developing safety education programs, and conducting community-wide pedestrian safety campaigns. The funds must be consistent with the State Highway Safety Plan.

- http://safety.fhwa.dot.gov/legislationandpolicy/policy/section402/
- http://epg.modot.mo.gov/index.php?title=132.4_Highway_Safety_Plan_and_Performance_Plan

Recreational Trails Program (RTP)

The RTP is reauthorized into FAST Act as a set-aside for funds from the Transportation Alternatives Set-Aside program under the Surface Transportation Block Grant Program (STBG). However, funding for this program is administered by the Missouri Department of Natural Resources, a division of the State Parks. Grants are available for trail development and renovation. Projects require a minimum of a 20% local match.

- http://www.fhwa.dot.gov/environment/recreational_trails/
- http://www.mostateparks.com/page/55065/outdoor-recreation-grants
- https://mostateparks.com/page/61220/recreational-trails-program-rtp-grants

Environmental Protection Agency

The Environmental Protection Agency offers a variety of grants that address community health. Grants may help fund green infrastructure that can also be used to enhance walkability and bikeability. These broad-based community grants require significant collaboration with local coalitions. Trailnet is available to partner and help with community engagement on this type of grant. As grants opportunities are always evolving, the EPA website should be checked regularly.

- https://www.epa.gov/grants

LOCAL FUNDING SOURCES

Local funding for bicycle and pedestrian projects and programs is an important component when considering developing new facilities. Many federal programs require a local match, the below funding sources can be used to fund projects in full or to be used as a local match when using federal funds.

Local Option Economic Development Sales Taxes

Cities in the State of Missouri have the option to impose a local sales tax of not more than one half per cent to be used to fund projects including pedestrian improvements related to stormwater management (sidewalks, curbs, gutters, etc.)

Capital Improvement Budget Set-Aside

The City of St. Charles could make a policy decision to set-aside a percentage of capital improvement budgets to fund bicycle and pedestrian projects. These projects could be incorporated into other roadwork being done or be stand-alone projects. These funds can be leveraged as a local match to secure federal funds.

Other Local Options

A few other local funding options including the creation of a Community Improvement District, Neighborhood Improvement District, or assessing development fees are also possible to fund improvements. Information on these funding options can be found at:

- https://ded.mo.gov/home.aspx

PRIVATE FUNDING SOURCES

Several national and state foundations provide grants for pedestrian and bicycle projects. These grants can play a significant role in funding projects and providing matchs for federal funds.

People for Bikes Grant Program

People for Bikes is a national organization dedicated to putting more people on bikes. The organization funds multi-use trails with a strong desire to leverage federal funding.

- http://www.peopleforbikes.org/pages/community-grants

Robert Wood Johnson Foundation (RWJF)

The RWFJ offers a wide range of funding opportunities to promote healthy and active living. The website offers details on various grants and calls for proposals.

- http://www.rwjf.org/en/how-we-work/grants/what-we-fund.html

TECHNICAL SUPPORT

National Park Service – Rivers, Trails, and Conservation Assistance Program

The National Park Service does not offer funding, but the city of St. Charles can apply to receive technical assistance and support for finding funding sources for recreational trails or conservation projects.

- http://www.nps.gov/orgs/rtca/index.htm

9 CONCLUSION

The City of St. Charles is a great place to bike or walk. Destinations like the Katy Trail, historic Main street, and Missouri River, welcome residents and visitors alike to experience the City outside of a car. The City has superb potential to develop in a way that promotes and encourages alternative modes of transportation. With the completion of this Master Plan the City has taken the first steps towards this future, and the enthusiasm for a safer, better connected, and more accessible St. Charles was evident throughout the planning process. Going forward it will be important for the City to monitor and evaluate the progress of the plan especially as any special conditions, opportunities, or challenges arise over the next 20 years.

ENDNOTES

[1] "Foot Traffic Ahead." Walkable Urban Places Report. Page 29 of Appendices

[2] *Community and Transportation Preferences Survey*. National Association of Realtors. July 2015.

[3] Marohn, Charles. *Guerrilla Painting*. Strong Towns, April 2012.

[4] Drennan, Emily. *Economic Effects of Traffic Calming on Small Businesses*. Department of Public Administration, San Francisco State University, December 2003.

[5] Geller, Roger. *Build it and they will come*: *Executive Summary*. City of Portland, April 2011.

[6] United States Census Bureau. *2010 Census. ;* United States Census Bureau. *1990 Census of Population and Housing.* August 1993. http://www.census.gov/prod/cen1990/cph2/cph-2-1-1.pdf

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[8] Leinberger, Christopher B and Mariela Alfonzo.*Walk This Way*. Brookings Institution. Web. 23 July 2014.

[9] US Federal Highway Administration, *Vehicle Miles Traveled*, retrieved from FRED, Federal Research Bank of St. Louis. https://research.stlouisfed.org/fred2/series/TRFVOLUSM227SFWA/

[10] East West Gateway Blog. *The roads less traveled- vehicle miles traveled on the decline in the St. Louis region*. East West Gateway Website, 28 May 2013.

[11] East West Gateway, August 2015

[12] American Community Survey 2010-2014 5 Year Estimate of Sex of Workers by Means of Transportation for City of St. Charles.

[13] American Community Survey 2010-2014 5 Year Estimate of Age and Sex for City of St. Charles.

[14] Center for Neighborhood Technology, *H+T Affordability Index*. http://htaindex.cnt.org/

[15] U.S. Department of Housing and Urban Development. Location Affordability Portal. U.S. Department of Housing and Urban Development. Web. 23 July 2014.

[16] American Community Survey 2009-2013 5 Year Estimate of Median Household Income for City of St. Charles.

[17] Reynolds, Conor CO, M Anne Harris, Kay Teschke, Peter A Cripton, and Meghan Winters. "The Impact Of Transportation Infrastructure On Bicycling Injuries And Crashes: A Review Of The Literature." Environmental Health (2009): 47. Web. 13 Aug. 2014.

[18] Marshall, Wesley E., and Norman W. Garrick. "RESEARCH ARTICLE: Evidence on Why Bike-Friendly Cities Are Safer for All Road Users." Environmental Practice (2011): 16-27. Web. 13 Aug. 2014.

APPENDIX A:
PUBLIC OUTREACH COMMENTS

FIRST ROUND OF PUBLIC OUTREACH

Poster Poll

The informal poster poll asked residents to place stickers along a scale with seven marks between two opposite choices. Each choice was illustrated with a photo. At the end of the event, the stickers were counted and assigned to the mark it was closest to. When the stickers were halfway between two marks, they were assigned to the mark to the right on the poster (lower on the scale on these graphs). Both the survey collection and counting methodology can only give a general impression of the opinions expressed. They do not represent a rigorous survey process.

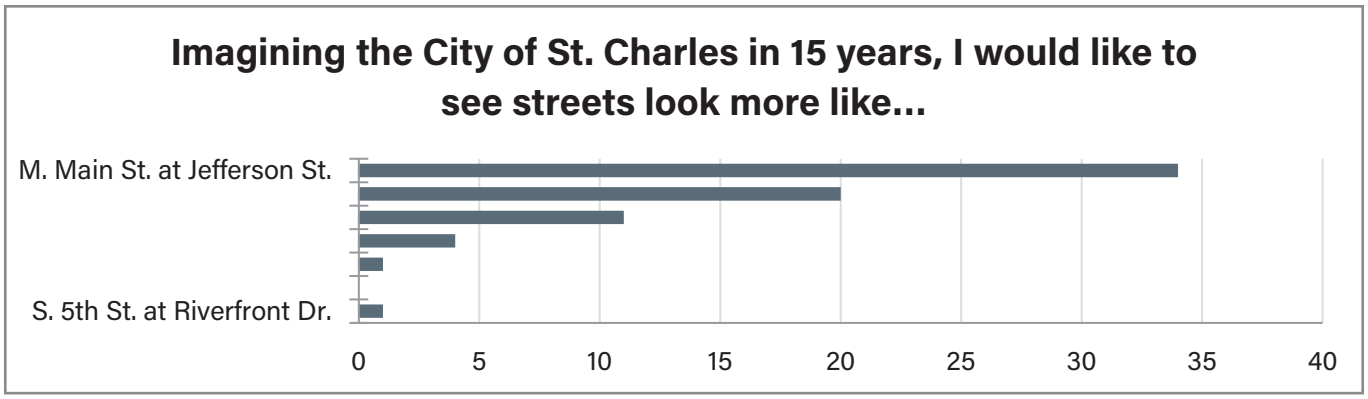


Figure A-1: Imaging the City of St. Charles in 15 years

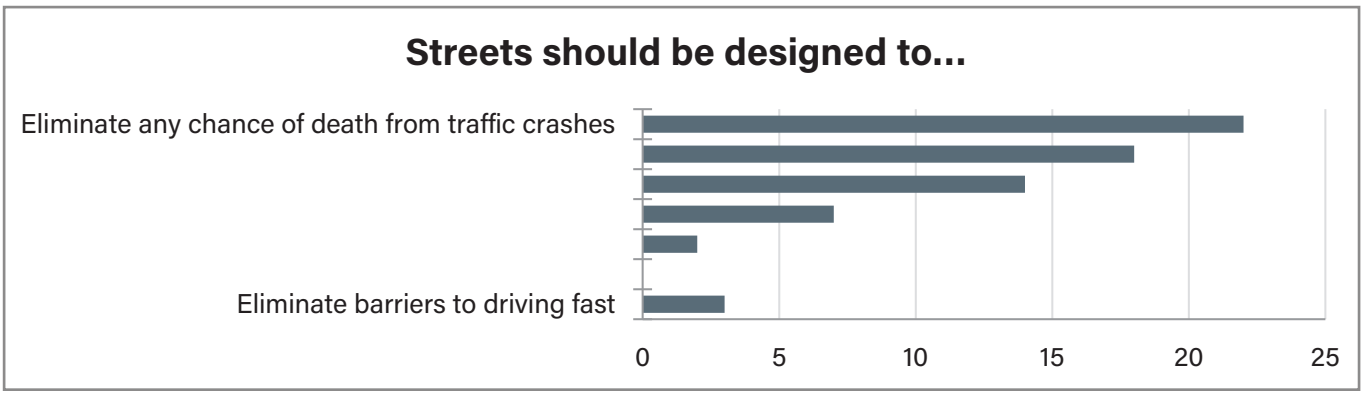


Figure A-2: Street safety

Figure A-3: Street width

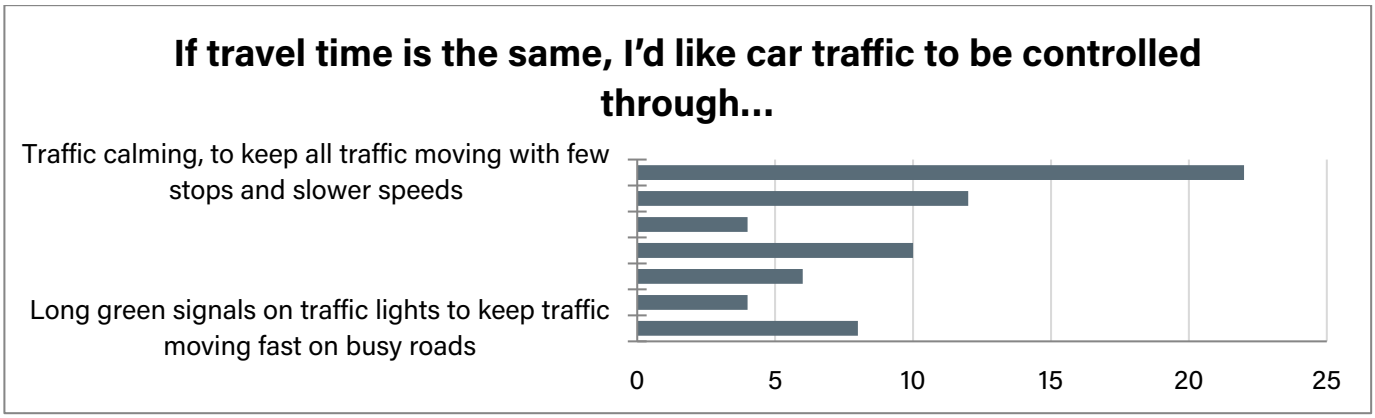


Figure A-4: Travel time

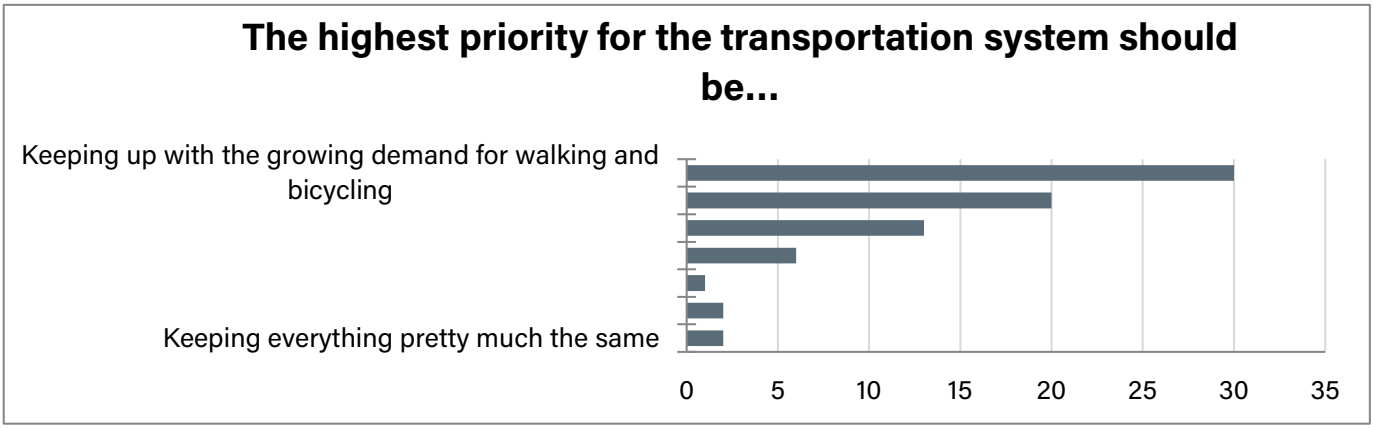


Figure A-5: Priorities

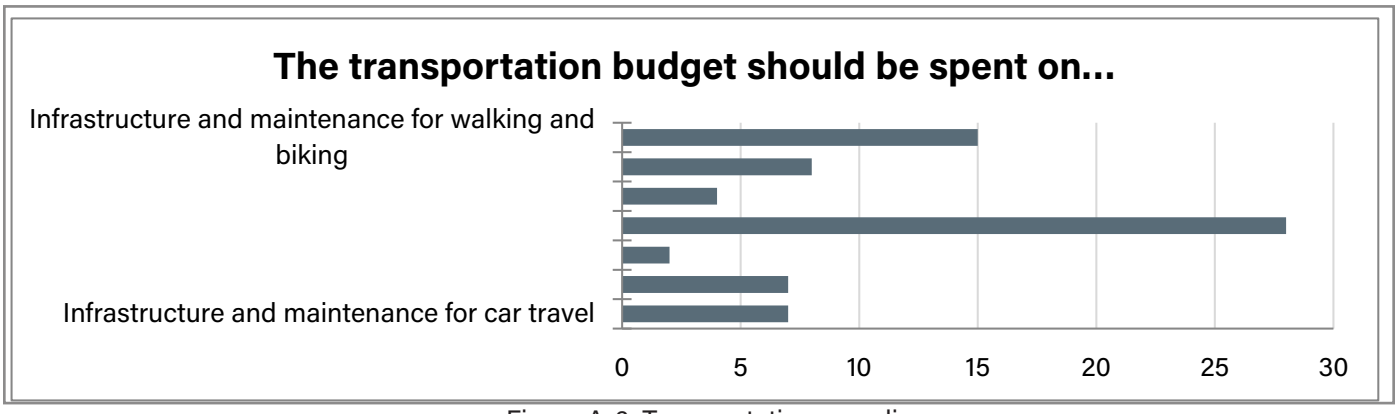


Figure A-6: Transportation spending

Comment Cards

Comment cards were provided at all of the events. For the most part, residents preferred to note their comments on the maps. The two comments received were:

- To add public transit as an option on the poster poll for the question on "The transportation budget should be spent on..."
- Picture on "Streets should be..." is comparing a highway with photo of Main Street – not comparable. Maybe you should send a mailer to residents of St. Charles asking them what they would like to see – I am a 30 year resident
  (Editor's note- the pictures compared Main Street and South 5th Street at Veterans Memorial Parkway).

Mapping Comments

Residents were invited to give written comments through a map of City of St. Charles and through comment cards. When residents were hesitant to draw on the maps, the planning team recorded the residents' comments on the maps. In order to improve clarity, residents were asked to use color-coded markers, though not all residents did.

Foods Truck in Frontier Park Map Comments:

- Northeast of Page Avenue Extension Trail into the City of St. Charles a resident shared the shoulder is filled with rumble strips
- A resident shared the Katy Trail path by the arena needs to be cleared of trash
- A resident suggested Friedens Road between S Old Highway 94 and S River Road to become a multi-use path
- A resident said the Katy Trail path needs regular clean up "bridge to bridge"
- A resident indicated River Road needs better cycling treatments down to bridge
- A resident said the bike lane by Highway 370 E is horrible with trash and dead animals
- N Kingshighway St road diet project – Check bicycle design
- A resident said Boschert Drive to the Schnucks in between Boone Ave and First Capitol Drive is hard to get to without a car
- College students need a safer way to cross First CapitolDrive to the Schnucks
- A resident shared a trail needs to be built on West Clay Street from the unincorporated space to Boone's Lick Road. A trail path would need to be built through Boone' s Lick Park to Boone's Lick Road.
- A resident said there needs to be connections throughout the city
- A resident noted there needs to be better connections through Lindenwood University
- A resident stated motorists need to slow down
- A resident wants better connections through parks
- A resident asked for connecting greenways to Huster Road into the St. Charles County to the Lakeside 370 Park

Kids Block Party/Public Works Day Map Comments:

- A resident asked for a sidewalk to connect the City of St. Charles into the county southwest suburb south of Woodlands Park
- Residents shared they would like to see better connections on the border of the city and county
- A resident shared there needs to be a bike trail to connect to Katy Trail from Fairgrounds Road and Talbridge Way to Friedens Road to S River Road
- A resident wanted the city parks to connect to Katy Trail
- A resident asked what will happen to Fairgrounds with 5th Street when the interchange changes?
- A resident said more connections need to be made from the "Streets of St. Charles" to the Katy Trail
- A resident said to add a trail between N Benton Avenue to the Katy Trail so we do not have to run or bike on the road
- Residents shared there are poor connections in the area around

Lindenwood University towards the Katy Trail
- Resident said there needs to be better connections to Blanchette Park
- Resident asked the planning team to walk the area north of Little Hills Expressway between Boschertown Road to New Town Boulevard
- A resident asked to have a sidewalk added on Mueller Road between Walsh Court to New Town Boulevard
- New Town Boulevard going north of Mueller Road has no shoulder to make it difficult to connect ways to bike to other bike lanes
- A resident said there is no shoulder or sidewalk on Elm Point Road towards Elm Point Baseball Fields
- Adding in trail around St Charles West High School Athletic Fields subdivision
- Resident shared there is no sidewalks by Lowe's in between West Clay Street on Zumbehl Road
- The subdivision by Hackmann Road and Diekamp Farm Trail comments:
  - Missing sidewalks and bike lanes
  - A child was hit in this area recently by a car
  - Better streets lights are needed and crossing signals

Food Trucks in Frontier Park and Illumi Run 5K Map Comments:

- A resident asked to see connections to Lakeside 370 Park from New Town
- A resident said there needs to better wayfinding signs from the Boschertown trail
- A resident would like to see trails improved around Fountain Lakes Park
- A resident said it not accessible between Elm Street On and Elm Street Off to Elm Street
- Resident shared there is no sidewalks or bike paths to grocery stores off of First Capitol Drive
- A resident said bike lane needs to paved between Boone's Lick Road to Riverside Drive to the Katy Trail
- A resident said their needs to be a children's park in Frontier Park
- The Mel Wetter Parkway trail stops early and needs to be connected to the Katy Trail
  - The planning team thought this could be a good first priority project
- A resident shared there is no connection between sidewalks on 5th Street to the Katy Trail

Open House at City of St. Charles City Hall Map Comments:

There were no comments received at the Open House at the City of St. Charles City Hall Public Outreach event.

SUMMARY OF EARLY ACTION PROJECT – RIVERSIDE DRIVE DEMONSTRATION

The early action pop-up traffic calming demonstration was held on Tuesday June 21 along three portions of Riverside Drive: Riverside and Jefferson, Riverside and Tompkins, and Riverside and Perry. The demonstration consisted of the removal of parallel parking spaces so that temporary curb bump outs could be installed using tires and cones. The demonstration was held from 3pm-7pm, and coincided with the June Food Truck Festival.

The purpose of the early-action pop-up traffic calming demonstration was a chance to raise awareness and capture public comments on the draft Bicycle and Pedestrian Master Plan, while showing temporary changes the City would like to pursue as permanent changes to enhance the safety of people walking and biking along Riverside Drive.

Trailnet staff, with the assistance of a few steering committee members, set up a public outreach table to capture public comments on the draft Bicycle and Pedestrian Master Plan at the Riverside and Perry location, outside of the Bike Stop Café.

The public outreach table captured public

comments in the following ways:

- Maps of the proposed bicycle and pedestrian routes for residents to leave comments and draw upon
- Copies of the 4 E (education, encouragement, enforcement, and evaluation) recommendations
- Comment cards for feedback
- Paper copies of the online survey

Overall, Trailnet staff and steering committee members spoke with over 20 different public participants and captured the interest of many more curious onlookers who witnessed the pop-up traffic calming demonstrations in action while enjoying the City's food truck event.

The early action project was publicized on Trailnet's website and the City of St. Charles' website, as well as in emails and newsletters. On the pop-up demonstration day various signs were placed throughout Riverside Drive informing people of the demonstration and where to go to provide input and feedback on the draft Bicycle and Pedestrian Master Plan.

The food truck event drew residents and visitors of all ages and had a large turn out which helped draw attention to the pop-up demonstration. The temperature outside was hot and sunny with few clouds in the sky.

Feedback

Residents preferred to discuss their comments with Trailnet staff and steering committee members and preferred to take the survey online. Trailnet staff and steering committee members noted the various comments received from the public on a large sheet of paper. The comments received relate to the Bicycle and Pedestrian Master Plan as well as the pop-up traffic calming demonstration.

Comments received on the draft Bicycle and Pedestrian Master Plan:

- Treetop Drive is a dangerous road for bikers and should be addressed in the bicycle and pedestrian plan.
- The I-70 Bridge needs to be more bicycle friendly.
- The crosswalk in front of the Bike Shop Café (Riverside and Perry) should have rapid flashing beacons, as this is one of the most dangerous locations for walkers and bikers. (Resident stated: "I have almost been hit by more than 20 cars in this area.")
- More stop signs along Riverside Drive would make it safer for pedestrians and bikers to cross. A stop sign by the Trailhead Brewery is especially needed.

Comments received on the traffic-calming pop-up event:

- I agree 100% with this.
- I wish the traffic calming demonstrations were permanently left in place.
- 30 mph along Riverside Drive is too fast.
- Car drivers do not pay attention in the area.
- Lots of pedestrians yield to cars in the crosswalks, it really should be the other way around.
- The yield signs need to be placed further back from the crosswalks to warn drivers earlier.
- People need to know the rules of the road.

APPENDIX B:
PLAN STEERING COMMITTEE MEETING MINUTES

The following contains the minutes taken from the five Plan Steering Committee meetings, which met on the following dates:

Meeting #1: September 10, 2015
Meeting #2: December 2, 2015
Meeting #3: May 31, 2016
Meeting #4: July 14, 2016
Meeting #5: August 15, 2016

PLANNING ADVISORY COMMITTEE MEETING #1: SEPTEMBER 10, 2015

Location: City of St. Charles City Hall

Time: 5:30pm to 7:00pm

Attendees:

Name		Affiliation
Sandy	Bichel	Resident, City of St. Charles Parks and Recreation Board
Tony	Caruso	Resident, Bike Shop Café
Vito	Lucido	Resident, Delta Center for Independent Living
Tara	Myers	Resident
Brad	Nowak	Resident, City of St. Charles Parks and Recreation Board
Alan	Suit	Resident
Patrick	Owens	Great Rivers Greenway
Jim	Wright	MoDOT
Kristen	Rhodes	St. Charles County Engineer
Mike	Myers	City of St. Charles Fire Department
Chris	Atkinson	City of St. Charles Parks and Recreation
Maralee	Britton	City of St. Charles Parks and Recreation
Kevin	Corwin	City of St. Charles Public Works
Jerry	Hurlbert	City of St. Charles Public Works
JoAnn	Peebles	City of St. Charles Public Works
Shannon	Rojas	City of St. Charles Public Works
Brad	Temme	City of St. Charles Public Works
Marielle	Brown	Trailnet
Grace	Kyung	Trailnet

Meeting Agenda:

1. Introduction
2. Overview of Planning Process
3. Ground Rules
4. Committee Roles and Responsibilities
5. Existing Conditions and Maps
6. Next Steps

Summary:

Marielle Brown, Bicycle and Pedestrian Planning Manager at Trailnet, opened the meeting and welcomed the committee members to the Plan Steering Committee. Jerry Hurlbert gave further information on how the City of St. Charles and Trailnet came together to work on the Bicycle and Pedestrian Master Plan. Marielle led a presentation on the planning process and public engagement for the master plan.

During introductions, individuals shared why they choose to be involved on the plan steering committee. The committee mentioned the following concerns:

- Safety

    - Concern of how people driving do not always stop at crosswalks and look both ways
- Curb cuts
    - Not consistent throughout the city
- Parks
    - There are 22 of them but not enough access to get to them safely without a car
- Linking businesses to other businesses by walking or biking
    - Examples: Students at Lindenwood do not have direct access to walk or bike to Main Street
- Visibility
    - Lighting at Curbs
- ADA
    - Ensuring there is accessibility for all individuals within the community
- Connectivity
    - Creating less isolation
    - Increasing options for walking paths
- Understanding where to make improvements
- Creating a community that encompasses the motto: Live.Work.Play

After introductions, Marielle continued with her presentation to share the presentation on the project timeline, ground rules, and roles and responsibilities.

Ground Rules the committee has agreed on are:

1. Test assumptions and inferences
2. Share all relevant information
3. Use specific examples and agree on what important words mean
4. Explain your reasoning and intent
5. Focus on interests not positions
6. Combine advocacy and inquiry
7. Jointly design steps and ways to test disagreements
8. Discuss undiscussable issues
9. Use a decision-making rule that generates the level of commitment needed
10. Commit to coming to meetings

Committee Roles and Responsibilities the committee has agreed on are:

- Attend four meetings and help with public engagement events
- Represent yourselves and your communities
- Help us share information with the community
- Make sure the plan works for the City of St. Charles

The committee also discussed existing conditions in the City of St. Charles, including popular destinations and barriers. Committee members and the planning team wrote and drew on a map of the City of St. Charles to help inform the existing conditions maps and report, with the following notes:

Map Comments

Parks and Recreation parked the following areas on the map in Yellow to signify existing trails:

- Fairgrounds Rd between Friedens Rd
- A trail in Webster Park around the lake
- A trail going along 364 from Page Avenue Extension Trail to the border Northwest of City of St. Charles
- Around Schaffer Park
- Hackman Rd to S Old Highway 94
- Along S Old Highway 94 to Muegge Rd and south towards Highway 364E
- A trail around Wapelhorst Park
- A trail in Boonslick Park
- A trail in Frontier Park
- A trail in Blanchette Park

- A trail along Mel Wetter Parkway south then east to Blancette Landing Access
- A trail in City of St. Charles Open Space and Bales Park
- A trail in Melody Lane Park
- A trail along Little Hills Expressway up towards Fox Hill Park to New Town
- A trail in St. Charles Soccer Complex
- A Trail going through Fountain Lakes Park
- A trail in McNair Park

The following areas were marked in red to signify problems:

- Missing Sidewalk along S Main Street between Ameristar Blvd to halfway to Boones Lick Road
- Link to Katy Trail needed on Lombard Street to S Main Street and along S River Road to Webster Park
- Schaeffer Park to S Old Highway 94 to Muegge Road and North on Muegge Road to Wapelhorst Park
- Missing Link between New Town to Harry S Truman Blvd
- Along Riverside Dr there are two red circles to signify missing connections off of Pike Street and Jefferson Street
- There needs to be more connections North of Highway 370 E and there are planned 110 Acres park here

The following areas were marked in blue to signify potential connections:

- S Fifth Street to Fairground Road to Boonslick Park
- Neighborhood Greenway Potential
    - Yale Blvd & Dorste Road to Yale Blvd & Hunters Road to Hunters Road to Elm Street
- Harry S Truman Blvd and Ehilmann Rd to West Clay Street is a postponed trail

The following comments were written on the map:

- Need sidewalk connections from businesses to destination point
    - Lindenwood University → Main Street
    - Streets of St. Charles → Katy Trail
    - Ameristart → Katy Trail
    - New Town → Lakeside
- Poor connections to Katy Trail along Historic Main Street Corridor (simple fix)
- Lack of adequate wayfinding signs
- Look at accident concentrations – especially in Main Street Area
- Cars parked too close to corners, blind sighting cyclists and pedestrians
- Connections from/to park trail (access)
- Confusion at Boschertown Road and Fox Hill Road
- Lindenwood University students use Watson Street to Jefferson Street to go Main Street and Katy Trail

Committee members also discussed:

- Area around First Capitol is difficult to access the Schnucks and has a very short count down for pedestrians.
- Behavior Element
    - Clear in Missouri that pedestrians do not have the right of way
    - People are jaywalking and not respecting roadway designs
    - Route H and Z are dangerous because of cyclists on the roadway
- How do cities receive dedicated funding for bicycle and pedestrian projects?
    - City Budget
    - Federal Money
    - Great Rivers Greenway
- Difficult to get to downtown from Streets of St. Charles for pedestrians
    - Sidewalk ends and requires people to go through grass to find connection
    - No wayfinding signs
    - No link for Ameristar to other areas of town
- Lindenwood University

    - How to connect students to the city without a car
- Lakeside (By 370)
    - New Town residents are not able to reach Lakeside or other trails without a car
- Education
    - Boschertown Greenway before Fox Hill has a lot of confusion on the right of way
- Riverside Drive
    - Cars are not stopping at crosswalks
    - Terrible blind spots
- Liked to see flashing beacon crosswalks at dangerous crossing zones
- Signage
    - Better wayfinding signs needed throughout city

The committee meeting ended with a brief discussion of next steps:

- Big Goal
    - What is the big goal?
    - Can a person walk or bike to get groceries?
    - A healthy community?
    - Should we pick a segment to focus on as priority?
    - Do we start with measureable goals?
- Walk Score
    - What is City of St. Charles' walk score?
    - Do we use this as our measureable goals?
    - Should we rate the city on 1-10 scale of walkability?
- GIS Shapefiles
    - Kevin Corwin said he could share shapefiles on sidewalks, conditions of sidewalks, and inventory that was done in 2013
- Building upon existing plans, including:
    - Pathways Plan
    - Gateway Bike Plan
    - Long Range Transportation Plan
    - Sidewalk Transition Plan

Next Steps

- Getting GIS files for all of the existing plans
- Looking at our walk score for City of St. Charles
- Need to invite someone to the committee to have a more business development perspective
    - Scott Tate
    - David Leezer
- Making sure we are connecting to previous work and overlaying all the GIS data together to find missing connections
- Funding is key issue

The next meeting will be arranged within the next couple of weeks.

PLANNING STEERING COMMITTEE MEETING #2: DECEMBER 2, 2015

Location: City of St. Charles City Hall

Time: 5:00pm to 6:30pm

Attendees:

Name		Affiliation
Julie	Carter	Lindenwood University - Head Cycling Coach
Tony	Caruso	Resident, Bike Shop Café
Vito	Lucido	Resident, Delta Center for Independent Living
Tara	Myers	Resident
Allen	Suit	Resident
Scott	Tate	Greater St. Charles County Chamber of Commerce
Patrick	Owens	Great Rivers Greenway
Mike	Myers	City of St. Charles Fire Department
Chris	Atkinson	City of St. Charles Parks and Recreation
Maralee	Britton	City of St. Charles Parks and Recreation
Kevin	Corwin	City of St. Charles Public Works
Brad	Temme	City of St. Charles Public Works
Marielle	Brown	Trailnet
Grace	Kyung	Trailnet

Meeting Agenda:

1. Review of public input
    a. Poster Poll
    b. Surveys
    c. Comments from maps and cards

2. Community priorities
    a. Identification
    b. Prioritization

Objectives:

1. To review the results of the first round of public input
2. To identify community priorities for the plan

Summary:

Marielle Brown, Bicycle and Pedestrian Planning Manager at Trailnet, opened the meeting and welcomed the committee members to the second Planning Steering Committee meeting. She started the meeting by reviewing the roles and responsibilities of the committee and the ground rules, which are detailed below.

Planning Steering Committee Roles and Responsibilities:

- Attend four meetings and help with public engagement events
- Represent yourselves and your communities
- Help us share information with the community
- Make sure the plan works for the City of St. Charles

Ground Rules

1. Test assumptions and inferences
2. Share all relevant information
3. Use specific examples and agree on what important words mean
4. Explain your reasoning and intent
5. Focus on interests not positions
6. Combine advocacy and inquiry
7. Jointly design steps and ways to test disagreements
8. Discuss undiscussable issues
9. Use a decision-making rule that generates the level of commitment needed
10. Commit to coming to meetings

Economic Analysis Market Value Maps
The maps and description can be seen in Section I of the Appendix.

Survey and Public Outreach Comments
Marielle presented the results from the survey and public outreach event. The presentation slides will be attached separately from the summary. The presentation slides can be seen in Section II of the Appendix.

Marielle shared there were 170 on the short form and 150 on the long form. Trailnet and the City of St. Charles advertised the surveys and public outreach events through social media, other online platforms, emails to city council and community members, and throughout city hall.

The committee then discussed who walks and bikes now and who will walk and bike in the future. The committee expressed interest in infrastructure and policies related to modes of travel beyond using a motor vehicle for travel. Attendants noted that people are looking for more opportunities to walk in their neighborhoods for leisure and exercise.

There was a question raised if it would be beneficial to look at interest in biking and walking among the age groups, but it was decided that it might not be the best use of resources.

Other questions the committee would like to consider while developing the plan are:

- Who are we building this plan for?
- What are the age respondents and what age groups want what for the future?

When reviewing the survey question related to bicycle now and bicycling in the future , there were questions as to whether the feedback suggests people do not want to set-aside time for fitness and instead would like walking and biking options to be apart of their daily lifestyle. The committee decided we could not say people are not interested in fitness trips necessarily, but the question remains as to whether St. Charles residents want to see more. It is confident to say residents do want more access to biking and walking. Marielle reminded the committee mode drives the trip as well as the destination. People are looking for a fun and active ways to travel to local designations.

Committee members were excited to learn 64 people do want to bike to transit stops in the future, which is a sign there is demand for transit.

There were discussions on what changes would help individuals walk more often. It was surprising to the committee to see topography was the least cited barrier in terms of biking and walking and time was the largest barrier. People were also surprised to see that slower traffic was considered to be a lesser barrier.

The committee agreed that some of the changes would be perceived as a cultural change for the community. Nevertheless, the City of St. Charles is already making some positive changes. For example, the city's health wellness programs focuses on increasing the number of people who walk to work. It was agreed this will be a long process, and the best way to make these changes would be to create walkable places for healthier food options that are easily accessible and quick to pick up.

- Committee members agreed there would need to be more mix used and higher density development
- Committee member shared the idea of changing the nature of the workday to not being a 9am – 5pm hour day. Some committee members for example shared if work places allowed their employees to leave work earlier to bike or walk home during daylight that more people would feel comfortable not driving to work. In addition, there was a brief discussion how individuals work more efficiently if there is more flexibility to a workday.

The committee conversed about what type of changes would encourage people to bicycle more often. Some committee members said individuals' wanting safer ways to cross the street is similar to the idea of them wanting slower streets as well. Overall, it is important to remember most people taking this survey are focusing on recreation rather than commuting.

Below are comments from the committee on the public outreach events

- Convention center to Streets of St. Charles needs a better path
- The amount of activity from Lindenwood University and Main Street has shown their needs to be better transportation options.
    - Ideas people shared were:
        - A trolley system
        - Increased mixed use development along First Capitol to Main Street
- Transit options
    - Need to create one good bus line then it could pay for itself through bus fare
    - Need to rethink how to improve our transit lines to turn a profit. There were discussions on a better bus system and/or a trolley system on the major streets.
- Individuals who have taken this survey might've taken it from an individual perspective and not thinking about the larger picture
- Lindenwood University does not have a transportation manager

Community Priorities for Plan

Each member was asked to make a list of his or her top five priorities for the bicycle and pedestrian plan in the City of St. Charles. The steering committee was then split into two groups and each group then worked to come to a consensus on their top five priorities for the plan. Finally, the whole committee reconvened and worked together to create a top five priorities list for the plan. Trailnet will use these priorities as a guide for all of the plan recommendations and prioritizations. The discussion of priorities directly addressed the recurring themes found in the survey and public outreach. The individual group's priorities are detailed below.

First Group's Priorities:

- Connectivity

    - Key designations and trails
        - Schools, Businesses, Stores
- Safety
    - Infrastructure and education
- Marking walking and biking part of standards and zoning
- Encouraging active lifestyles
    - Messaging
    - Access
    - Outreach
    - Affordability
- Attractive and welcoming facilities and amenities

Second Group's Priorities:

- Connecting critical connections within city and outside city
    - Connect the Dots
        - Connecting key designations to other key locations
    - Transit
- Infrastructure standards
    - Wayfinding
    - Accessible universal design
    - Traffic calming/safety
- Communicate, educate, encourage
    - Target audience: community, elected officials
- Link Katy Trail
- Minimum Grid
    - Sidewalk Connectivity
    - Sidewalk Transition Plan
    - Accessibility

Both groups had similar concepts and ideas. Infrastructure standards were combined with zoning to encompass the idea of creating hospitable lovable places for attractive and welcoming facilities and amenities. Encouraging active lifestyles was combined with "communicate, educate, and encourage" with safety and outreach through demonstration. Minimum grid was changed to minimum level of accessibility and viewing the walkability score. The finalized priorities are:

- Connecting critical connections within city and outside city
- Hospitable lovable infrastructure standards and zoning
- Communicate, educate, encourage, and demonstrate for safety and outreach to community and elected officials
- Link to Katy Trail
- Minimum Level of Accessibility

The next meeting will be arranged when Marielle returns to the office.

Appendix

Section I

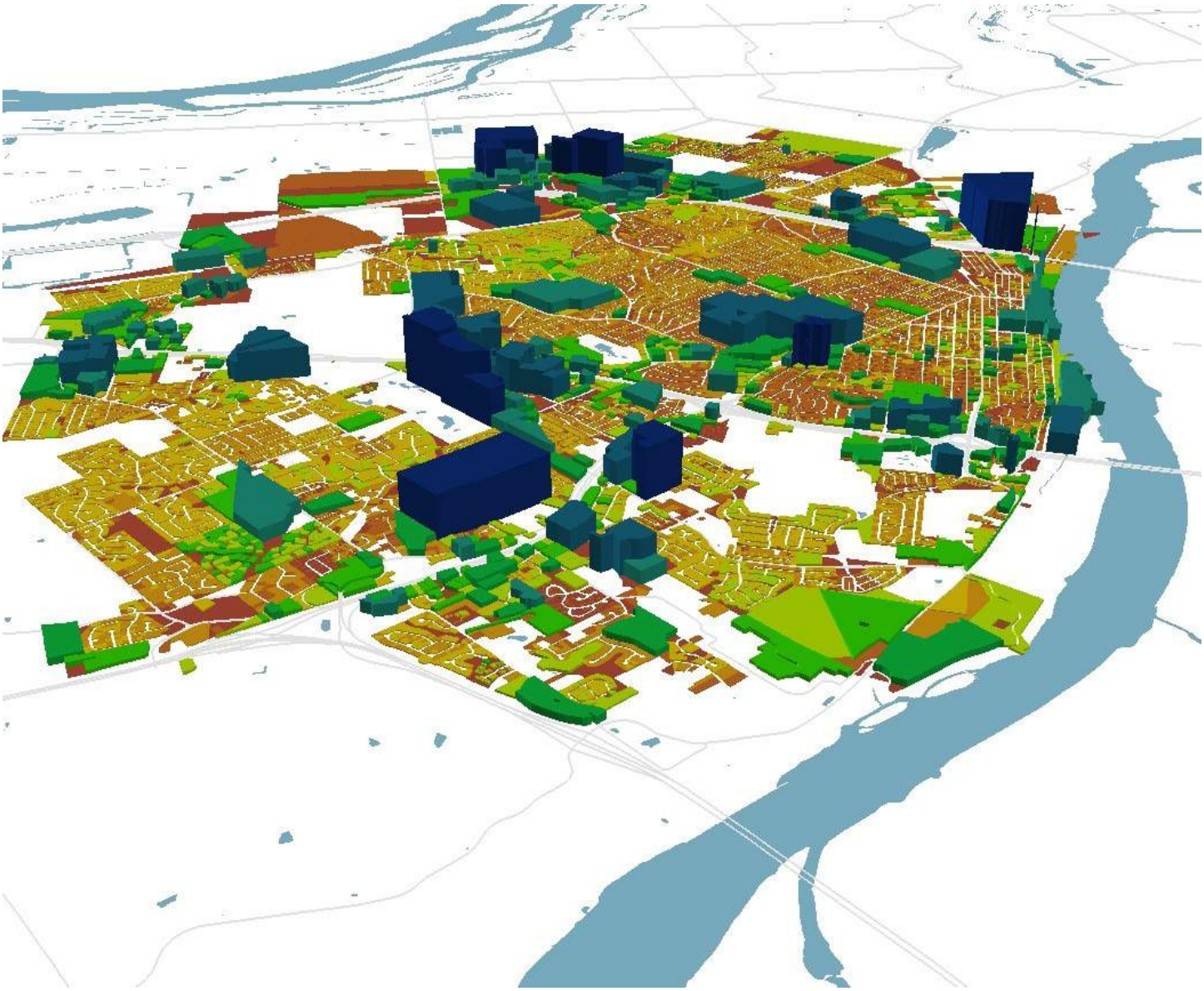


Figure 1: Total Market Value by Parcel (Looking north)

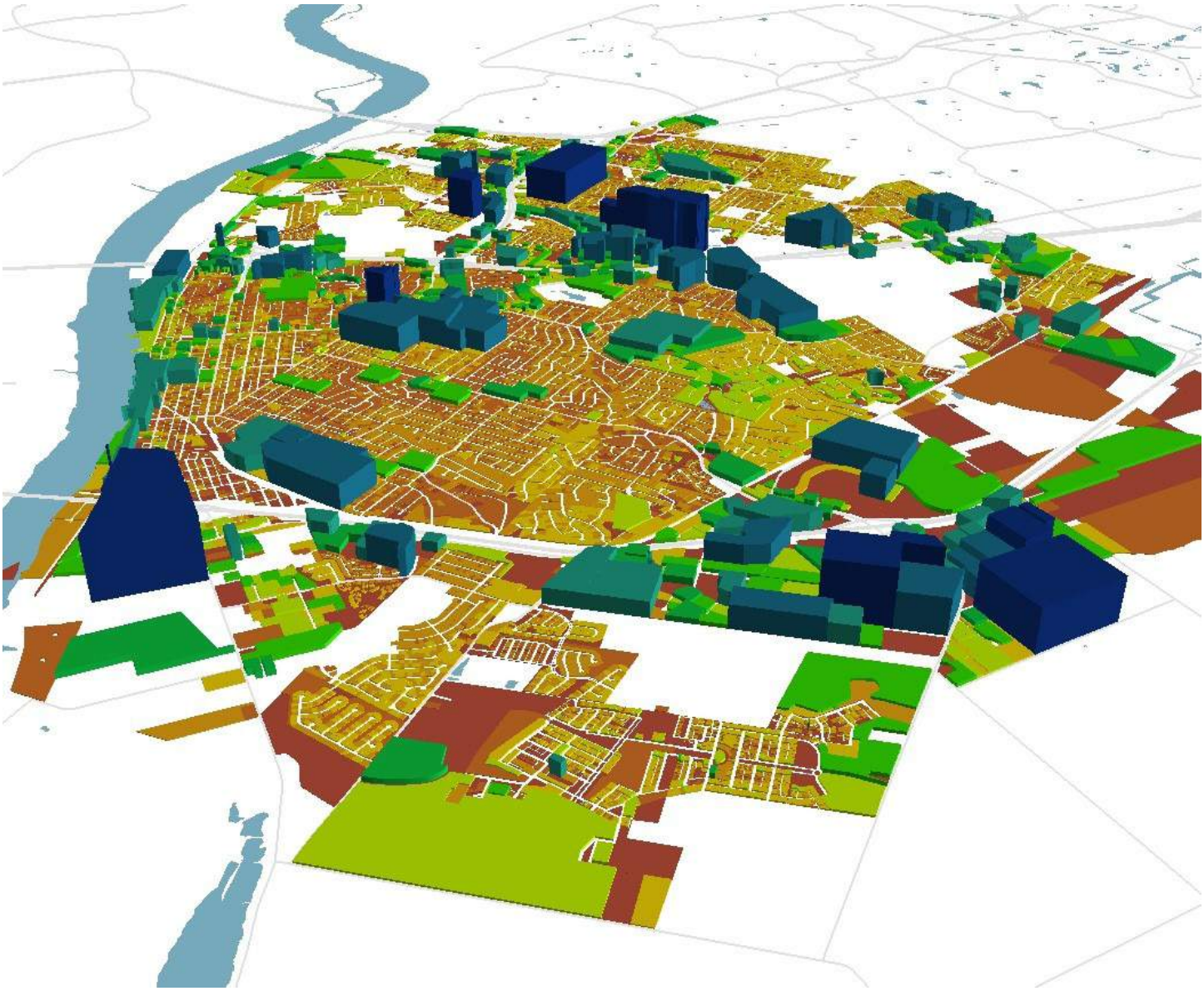


Figure 2: Total Market Value by Parcel (Looking south)

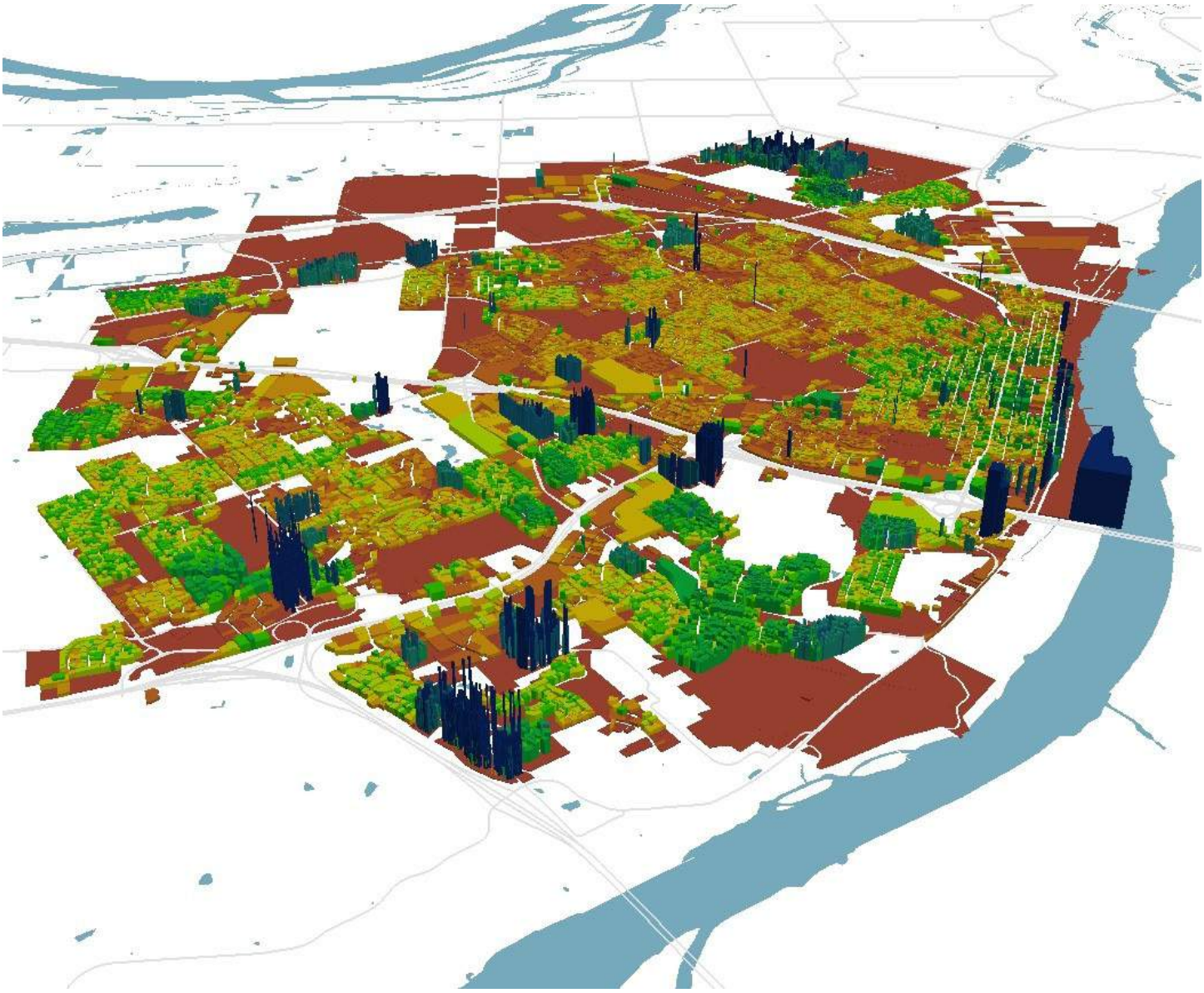


Figure 3: Total Market Value by Parcel / Parcel Area (Looking north)

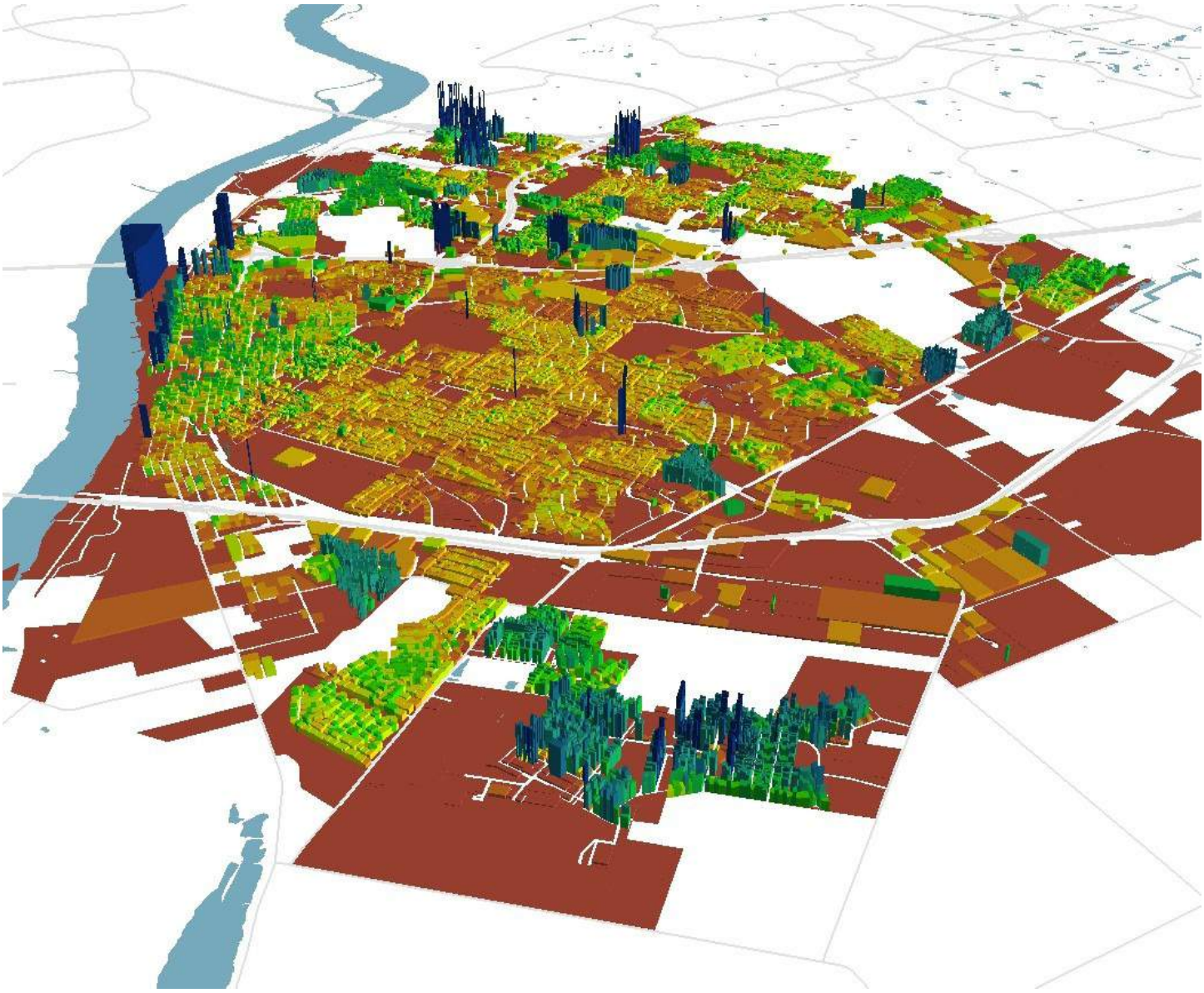


Figure 4: Total Market Value by Parcel / Parcel Area (Looking south)

Description of Maps:

The maps shown above were created using the shapefile of parcels provided by St. Charles County Government. Within the shapefile are numerous variables, including Total Market Value and a measure for the parcel area. According to the County Government's definition of terms, the Total Market Value represents the full-appraised value of the parcel.

Figures 1 and 2 represent the Total Market Value of each parcel in the City of St. Charles. Parcels that appear to be higher in elevation and have 'cooler' colors (ie blue and green) have higher relative Total Market Value compared with other parcels in the City of St. Charles. Immediately apparent from these first two maps is the fact that parcels with higher market value are also very large, which is also a probably determinant of their value. In these figures, we can see large and valuable parcels such as Lindenwood University, the industrial center near MO-370 and Elm, and some larger parcels on First Capitol south of I-70.

Unfortunately, because these maps do not take into account the size of the parcel as a determinant of market value, smaller parcels appear to have limited market value by comparison. We know that properties in or near Main Street and in New Town are not invaluable, yet the first two maps would suggest otherwise.

Figures 3 and 4 correct for this mistake by dividing the Total Market Value of each parcel by its size. In these maps, many of the once highly elevated parcels are now flat and are colored red, signifying their market values are less relative to other parcels in the City of St. Charles. In this map, smaller parcels that were previously hidden now pop out in elevation and with cooler colors. Some areas of interest that pop out in these last two maps include the Ameristar Casino, Main Street, New Town, and a neighborhood near a trailhead with connections to the Katy Trail and the Creve Coeur Lake trail.

PLANNING STEERING COMMITTEE MEETING #3: MAY 31, 2016

Location: City of St. Charles Police Headquarters

Time: 5:30pm to 6:30pm

Attendees:

Name		Affiliation
Chris	Atkinson	St. Charles Parks and Recreation
Sandy	Bichel	St. Charles Parks and Recreation
Kristen	Rhodes	St. Charles County Highway
Craig	Scott	St. Charles City Engineer
Grace	Kyung	Trailnet
Cindy	Mense	Trailnet
Nate	Silverstein	Trailnet

Meeting Agenda:

1. Trailnet Staff Changes
2. Review of Plan Priorities
3. Schedule and Update
4. Early Action Project
5. Draft Plan 4 E Recommendations
    a. Education
    b. Encouragement
    c. Enforcement
    d. Evaluation
6. Draft Products
7. Draft Maps
8. City Council Presentation

Objectives:

1. To review sections of the draft plan
2. To update the planning steering committee and proposed changes to schedule

Summary

Grace Kyung, Bicycle and Pedestrian Planning Manager at Trailnet, led the meeting. She started the meeting by reviewing the roles and responsibilities and the ground rules of the steering committee, which are detailed below. Grace then shared information about the progress of the plan and solicited input on the direction and content of the draft plan. A discussion of next steps for finalizing and presenting the plan closed out the meeting.

Planning Steering Committee Roles and Responsibilities:

- Attend four meetings and help with public engagement events
- Represent yourselves and your communities
- Help us share information with the community
- Make sure the plan works for the City of St. Charles

Ground Rules

1. Test assumptions and inferences
2. Share all relevant information
3. Use specific examples and agree on what important words mean
4. Explain your reasoning and intent
5. Focus on interests not positions
6. Combine advocacy and inquiry
7. Jointly design steps and ways to test disagreements
8. Discuss undiscussable issues
9. Use a decision-making rule that generates the level of commitment needed
10. Commit to coming to meetings

Trailnet Staff Changes
Grace discussed the Trailnet staff changes with the steering committee and apologized for the delay in the planning process. Grace shared that she has been working with the City of St. Charles since Marielle's departure to develop a plan that the city staff felt comfortable sharing with the community. Grace also shared that Trailnet hired Nate Silverstein to assist with the development of the plan and he will be working full-time at Trailnet for the summer. Grace reminded the committee on the decision to hire Paul Wojciechowski from Alta Planning+ Design (Alta) to aid in the consultation of the planning development.

The City of St. Charles had a staff change as well and JoAnn Peebles is no longer with the city. Craig Scott will be the new project manager from Public Works to work with us in the development of the plan. Welcome Craig!

Review of Plan Priorities

- Connect to key destinations and address barriers in and near the City
- Set infrastructure and land use standards that lead to desirable streets and trails
- Communicate and share the safety and health benefits of active transportation
- Strengthen connections to the Katy Trail
- Ensure accessibility for active transportation throughout the City

There were no comments on the plan priorities.

Schedule and Update
Grace shared schedule updates with the committee and there were no comments on the proposed changes. The new schedule shows the plan will be complete by mid-September and will be reviewed by the City Council Work Session, October 11th, and City Council, October 18th.

Grace shared the proposed schedule changes with committee members. She noted that the dates shown in the schedule are subject to change, and some dates were used as a point of reference to schedule meetings within the week of the proposed date.

Early Action Project Comments
Grace presented the details and the map of locations along Riverside Dr. where the early action pop-up demonstrations will be held. City staff chose the location of the early action project because there are proposed changes to Riverside Dr. to improve the safety of those who walk. The recommended improvements are curb bump outs near crosswalk intersection to improve the sight distance, speed tables, and rapid flashing beacons. The committee asked whether the end vision for the proposed changes on Riverside Dr. was to remove all parking spaces along Riverside Dr.. Grace shared that there are no plans to remove all of the parking spaces along Riverside Dr. and the parking spaces that will be removed will improve the safety of those using the crosswalk. There will be parking spots removed during the demonstrations, but they will not be removed permanently.

Grace requested that city staff and steering committee members participate in the early action project if possible. For more information on the demonstration, please review the early action project flyer.

4 E Recommendations
Please review the 4 E recommendations attached with meeting minutes to learn more about the recommendations being proposed.

Below are comments during the steering committee meeting about the 4 E recommendations:

1. Education
The committee commented that the School District is listed as a "Responsible Department" for some of the recommendations however, no one from the school district has been involved at or present for the meetings. The committee discussed ideas on who would be good points of contact for the three different school districts in St. Charles:

- The superintendent of the St. Charles school district was thought to be a good person to contact.
- PE teachers could be a good point of entry for talking with the school districts.

Cindy then discussed the Safe Routes to School program with the committee and suggested it could be a program to begin looking into for funding sources and networking with school districts.

2. Encouragement
The committee commented that constructing bike racks at various businesses and restaurants would be a good encouragement recommendation that was not listed within this section.

3. Enforcement
The committee brought up the presence of signs along 6th street which say: "Bikes May Use Full Lane" and were wondering why there are only signs like these along 6th street and nowhere else. Grace discussed best practices for bicycle signs suggesting "Bicycles on Road" signs should be installed which are often easier for cars and pedestrians to understand and read.

4. Evaluation
The committee had no comments.

Draft Products
Grace shared the proposed draft products with the steering committee. There were no comments.

- Bicycle and walking safety brochures for distribution at City Hall, parks, and local License Office
- Develop a curriculum for school officers to use in teaching walking and bicycling safety
- Walking and bicycling maps showing less routes for navigating the City of St. Charles
- "Bikers's rights" and "Walker's rights" cards for distribution by officers

Draft Maps
The committee reviewed and commented on the draft bicycle and pedestrian maps. Grace explained how the proposed multi-use paths will only be along one side of the street. Overall, the committee was very excited about the maps.

Committee Members' Comments:

- There is an existing sidewalk/multi-use path that connects the Bangert wildlife area to Friedens Rd. which needs to be added to the map.
- A connection between Fountain Lake Park and 370 Park is something that people would be very excited to see, but currently there is nothing planned for this.
- The path along Highway 370 is protected by a short barrier that makes bicyclist feel unsafe.
    - Plans to raise the barrier and separate the path from the road are already underway with GRG. MODOT is not involved in the process.

- There is a requirement of 4-6 feet of shoulder to be constructed along county roads; the committee questioned whether bike lanes could be constructed in this area. It was concluded that bike lanes could be constructed and the county would consider this as a shoulder.
- Many of the projects and routes planned on the bicycle and pedestrian maps will need to be tied to the city's street improvement schedule in order to accomplish the construction of the recommendation.
- The committee questioned the percentage of the recommendations which were upgrading existing infrastructure versus constructing new infrastructure.
    - Most of it will be new facilities
    - Calm streets will only have sharrows and wayfinding signs and will not need more infrastructure than this.
    - Multi-use path infrastructure will be the most expensive for the city
- Will the plan addresses ADA compliance of the existing infrastructure?
    - It is not an ADA transition plan.
    - Engineering background is needed for that sort of work, but Trailnet will add a note into the plan that the city's engineering should evaluate ADA compliance.
        - After the meeting, Trailnet found that the city does have a plan called the City of St. Charles Long Range ADA Transition & Sidewalk Plan by the public works department. Trailnet will review this and incorporate helpful information into the bike and pedestrian plan.
    - Compliance with ADA is necessary to receive any funding for new projects.
- What will the cost of the plan would be?
    - Trailnet will have a ballpark figure before the June 14th meeting
    - Overall, the routes proposed in this plan should be less expensive than the previous plan.
    - It is all about trade-offs and where you want to be as a community in 10-20 years.

City Council Presentation

Trailnet will be presenting with city staff to the Council Work Session on Tuesday, June 14th. The steering committee is invited to join us on that day for the presentation, but there may not be a public comment session.

Information on the work session –

- 7 p.m.
- City Hall Council Chambers
  200 N. 2nd St.
  St. Charles, MO 63301

The next Planning Steering Committee meeting will be held the week of July 13th.

PLANNING STEERING COMMITTEE MEETING #4: JULY 14, 2016

Location: City of St. Charles Police Headquarters

Time: 5:30pm to 7:00pm

Attendees:

Name		Affiliation
Maralee	Britton	St. Charles Parks and Recreation
Craig	Scott	St. Charles Public Works
Brad	Temme	St. Charles Public Works
Scott	Tate	Greater St. Charles County Chamber of Commerce
Tony	Caruso	Bike Stop Cafe
Patrick	Owens	Great Rivers Greenway
Grace	Kyung	Trailnet
Nate	Silverstein	Trailnet

Meeting Agenda

1. Review of Plan Priorities
2. Public Comment Period
    a. Early Action Project
    b. Neighborhood Tours
3. Survey Results
    a. Key takeaways
    b. Bicycle Routes
    c. Pedestrian Routes
    d. Intersection Improvements
    e. Draft Maps
4. Next Steps
    a. Schedule

Objectives:

1. To review sections of the draft plan and draft products.
2. To provide initial summary analysis of survey results.

<u>Planning Steering Committee Roles and Responsibilities:</u>

- Attend four meetings and help with public engagement events
- Represent yourselves and your communities
- Help us share information with the community
- Make sure the plan works for the City of St. Charles

Ground Rules

1. Test assumptions and inferences
2. Share all relevant information
3. Use specific examples and agree on what important words mean
4. Explain your reasoning and intent
5. Focus on interests not positions
6. Combine advocacy and inquiry

7. Jointly design steps and ways to test disagreements
8. Discuss undiscussable issues
9. Use a decision-making rule that generates the level of commitment needed
10. Commit to coming to meetings

Summary of Meeting
Grace Kyung and Nate Silverstein led the meeting. Grace opened the meeting by providing an overview of the plan's priorities. She then discussed the early action pop-up traffic calming demonstration and the insight and information that the event provided. Next, Nate presented the results of the public comment survey and laid out bicycle and pedestrian maps displaying suggested improvements to the routes based on the public feedback. The committee was given the opportunity to discuss the suggested changes and provide insight into the feasibility or credibility of the changes. The meeting ended with a reminder of the draft products being creating and an overview of next steps as the plan begins to come to a close.

Review of Plan Priorities
The committee was reminded of the plan priorities:

- Connect to key destinations and address barriers in and near the City
- Set infrastructure and land use standards that lead to desirable streets and trails
- Communicate and share the safety and health benefits of active transportation
- Strengthen connections to the Katy Trail
- Ensure accessibility for active transportation throughout the City.

Early Action Project
The committee was thanked for its help in setting up the event. Overall, the event had gone smoothly and while there were not as many public comments received as desired, the comments that were received were of high quality and helpful in shaping the plan.

Neighborhood Tour
The committee was informed that there would no longer be a neighborhood tour event due to time constraints and lack of volunteers.

Survey Results
The initial analysis of the 59 survey responses received during the month long public comment period was presented to the committee. The committee expressed their concern that there was a low response rate from the survey. Trailnet agreed that the numbers of responses for the survey were low, but Trailnet staff and St. Charles staff reached out to local businesses, the City, and committee members to further outreach efforts. The survey responses overall provided valuable insight and quality feedback from residents.

The main takeaways from the survey were that residents of St. Charles are a). Very excited about a more walkable and bikeable St. Charles b). Overwhelmingly agree the plan will encourage them to walk or bike more often, c). Believe education for walkers, bikers, and especially *drivers* are important to foster a safer and more bike friendly environment, and d). Clearly marked lanes and signage is important for helping encourage people to walk or bike and helps people feel safe.

Survey Results—Suggested Route Changes
The survey asked whether there were walking and biking routes that should be suggested in addition to those already proposed. The following section summarizes the route suggestions the committee discussed (first bullet) and their comments on the suggestion (indented bullet).

Bicycle Route Suggestions

- Connect Lindenwood University
    - This was an important destination that the plan had already taken into account.
- Climbing lanes on Ehlman between Truman and Zumbehl

    - Trailnet will evaluate whether climbing lanes will be needed.
- Route to cross over the Norfolk and Southern Railway at Elm Street.
    - There had been a project in the works to realign Elm Point with the floodplain. This would provide a better connection.
    - This route will need to go over or under the railroad.
- Library at Duchesne and Elm
    - Intersection was just redone with a crosswalk and signal.
- Bike lane on Duchesne
    - Respondent stated this is not a good street to have a calm street on and would rather see a bike lane on it.
        - Steering Committee agreed with this statement
    - The street is tight towards Randolph but adjacent to Lindenwood it's pretty wide open
- Bridges in and out of St. Charles, especially 370 bridge
    - There are already existing paths along some of the bridges and there are already existing plans to enhance these bridge connections.
    - "Boeing Trail" will provide connection and access for 370
- Heritage crossing south of 364
    - GRG already has plans for this area and has already done extensive background research on the crossing which determined the placement and type of connection that is being proposed.
- Connect routes with St. Peter's Trails.
    - Pedestrian bridges already in place and already planned to help address this.

Pedestrian Route Suggestions

- Connect Lakeside 370 Park to the Katy Trail.
    - Trailnet will look into the possibility of a walking route to connect the Park.
- No Walking path/sidewalk next to the road in McNair Park
    - Trailnet will look into areas where a sidewalk may be missing, the committee was unsure where there was sidewalk/path problems in this area
- Clark to Kingshighway
    - Desire from some officials to put something on this route.
    - Trailnet will look into the possibilities of a pedestrian path/ bicycle path in this area.
    - There was an Old route (the 118) that went over the river.
- 5th St. over I-70
    - There is an existing path underneath the bridge already.
    - This area is currently under construction.

Intersection Improvement Suggestions

- Olive and 5th Street
    - Easement and trail already exist.
- Highway B and 94
    - Bad intersection
    - There had been previous talks of redoing this intersection.
- I-70 and 5th Street
    - There is an existing path underneath the bridge.

Existing trails that should be shown on the maps:

(The committee pointed out trails that need to be updated on the maps):

- Wapelhorst Park
    - There is a connector to the park and an existing sidewalk
- Highway 94 to Boone multi-use path
    - Future plans to hook up to Fairgrounds interchange.
- Diagonal planned trail across downtown railroad tracks connecting to Boschert Trail.

Additional Notes

Bicycle parking

- There is not a lot of room for bicycle parking downtown
    - The committee was curious to know if there was any ROW space that could be used. They also considered parking space near the railroad, the foundry, and Replica Church.
- Ways to make bike parking fit into the historic design of downtown St. Charles.
    - Trailnet will look into historic bike parking designs.
- The bicycle maps do not show where bike parking is.
    - Should there be signs/maps showing people where to lock up bikes?
- Bicycle parking placement is moving very slowly
-

Lightning

- Improve current lighting situations especially in intersection improvement areas.
- Make sure calm-streets have adequate lighting

Sidewalk needed

- The city spends money each year to build and maintain sidewalks but it is never enough to catch up to the need.
- Grants such as SRTS and others can work on this.

Other plans to consider

- GRG Study looking at Walkability: Trust of Public Land
    - High scores for bikeability in the area, walkability is much worse.
- Public Works – Sidewalk Transition Plan
    - Sidewalk closer to Activity Centers are higher priorities
    - Sidewalk priority to at least one side of the street
    - 100 million dollars worth of sidewalk fixes and don't know how the funding will catch up

Next Steps

The committee was reminded that the final meeting would take place in Mid-August 2016. Before this time Trailnet will be working on, and will have the following products ready to present to the committee:

- Updated Draft Plan
- Updated Draft Products
- Summary Document/Transition Plan

PLANNING STEERING COMMITTEE MEETING #5: AUGUST 15, 2016

Location: City of St. Charles Police Headquarters

Time: 5:30pm to 7:00pm

Attendees:

Name		Affiliation
Craig	Scott	City of St. Charles Public Works
Chris	Atkinson	City of St. Charles Parks and Recreation
Scott	Tate	City of St. Charles Chamber of Commerce
Jim	Wright	Missouri Department of Transportation
Kristen	Rhodes	St. Charles County Highway
Brad	Nowak	City of St. Charles Parks and Recreation Board
Tony	Caruso	Resident, Bike Stop Cafe
Alan	Suit	Resident
Grace	Kyung	Trailnet
Nate	Silverstein	Trailnet

Meeting Agenda

1. Presentation and Review of Finished Draft Products
2. Total Plan Cost Estimates
3. Final review of Bicycle and Pedestrian Route Maps
4. Prioritization Review
5. Next steps

Objectives

1. To review final sections of the draft plan and finished draft products.

Summary
Grace Kyung and Nate Silverstein opened the meeting and thanked the steering committee for their guidance throughout the planning process. The meeting started with a discussion and presentation of the draft products that were created for the City of St. Charles. The committee was then guided through the plan cost estimates. Grace explained how the numbers were derived for each type of facility and presented the total cost of plan implementation. Next, the committee was provided a short sample of the final plan's prioritization, and Trailnet explained the methodology for prioritizing bicycle and pedestrian facilities. After this, the committee was given the opportunity to review the bicycle and pedestrian route maps to provide any last comments or suggestions. Samples of what the finished St. Charles Bike and Pedestrian Master Plan will look like were shown along with examples of how the plan foldout summary will be displayed.

Presentation and Review of Finished Draft Product
The final draft products were presented to the plan steering committee for approval. A total of five draft products were created for the City which include:

a. **Level of Traffic Stress (LTS) maps**

b. **Drivers guide to sharing the road informational brochure**
c. **Biker/walker ordinance cards**
    - There was concern voiced that these bicycle and pedestrian ordinance cards may not be enforceable, particularly the law that bicyclists must ride in the street and not the sidewalk. A committee member relayed how police had told bicyclists to use the sidewalk along 5th Street even though it was not a designated sidewalk bicycle route.
d. **Educational resources list and bike safety brochure**

Overall, the draft products were received well by the committee. Trailnet will be accepting comments and suggestions on these draft products until Friday, September 9th.

Total Plan Cost Estimates
The cost estimates were based on cost data from Trailnet's *Streets for Everyone* (2013) and FHWA's *Costs for Pedestrian and Bicyclist Infrastructure Improvements* (2013) and were adjusted for inflation for 2015. The cost of the plan was reviewed and three projects were highlighted: I-70 Bridge project, Missouri Route 370 Bridge project, and the Rails to Trails path as the highest costing projects. The two bridge projects are already in progress and the city has been actively working finding funding and planning for the improvements.

The cost estimate breakdowns for each recommended bicycle and walking route were divided by facility type, which are listed below with any comments received during the meeting.

a. **Sidewalks**
b. **Shared Lanes**
c. **Bicycle Lanes**
    a. Grace noted that the plan will recommend buffered bike lanes at a minimum of 5' with a 3' buffer, however if there is enough space and funding then the City should look into making a protected bike lane, which is one of the best on-street bicycle facility.
d. **Multi-use paths**
e. **Rails to Trails**
    a. A concern was raised as to the progress and feasibility of this proposed path/facility. It was noted that it has taken a very long time to secure a very small portion of this route.
f. **Calm Streets**
g. **Intersection Improvements**

Final Review of Bicycle and Pedestrian Route Maps
The committee was given time to review the final bicycle and pedestrian maps and the following comments were raised:

- Remove "Add sidewalk" section along Pralle Lane to Kunze Drive as it is undergoing sidewalk construction.
- There is an existing connection from Blanchette Park to adjacent development in the north that should be shown on the map.
- In addition, Trailnet will number all of the routes on the maps as per the City's request.

Prioritization Review
A sample of the final prioritization section was given to the committee to review. The methodology for prioritizing the routes was a score derived from three main categories based on the plan priorities: Connectivity, Accessibility, and Feasibility. Each street with a proposed walking or bicycling facility was given a score and weighted based on these criteria. Trailnet will provide the Excel spreadsheet with the scoring and calculations along with the final plan to the City.

The committee did not raise any comments on the prioritization section or methodology.

Additional Comments

- The committee was interested to know who, out of all of the communities Trailnet has worked with, how has the implementation of previous their bike/ped plans been successful or not successful.

    - This is a topic Trailnet has and will continue to look into. Information will be provided when a review/update of Trailnet's completed bicycle and pedestrian plans is completed.
- How did St. Charles' public outreach compare to other communities?
    - The pre-plan survey response rate was very good, but it was unfortunate that there was not a similar number of responses for the draft plan survey.
- How in-depth will the plan's presentation to city council be and will city council discuss the plan in-depth?
    - City Council has discretion on how long and how in depth they would like to discuss the plan.
        - It was mentioned that there are ***speaker cards*** that can be turned in if people would like to speak on the plans behalf and perhaps even encourage the city council to adopt the plan officially.
            - There was interest raised in the possibility of getting the bicycle community to come to the city council meeting and put in speaker cards to share their thoughts on the plan.
            - Should the steering committee submit speaker cards to speak on the plan's behalf?
                - Craig/Brad will look into the possibility of submitting speaker cards.
- Do cities typically adopt bike/ped plans officially?
    - Craig/Brad will look into St. Charles' normal procedures for adopting plans.

Next Steps

The committee was shown examples of what the final St. Charles Bicycle and Pedestrian Master Plan will look like as well as the plan overview foldout. Trailnet is in the process of designing the plan and foldout and will also be updating the bicycle and pedestrian maps to reflect the comments received from the committee. Trailnet will also be available to make changes as needed to the draft products or plan sections.

SUPPLEMENT

PRIORITIZATION AND COST ESTIMATES

Bicycle & Pedestrian Master Plan

CITY OF ST. CHARLES, MISSOURI

Final Plan | September 2016

Produced by: Trailnet

TABLE OF CONTENTS

1 PRIORITIZATION

The City of St. Charles Bicycle and Pedestrian Master Plan is a long range vision. As such, it is necessary to prioritize which improvements the City should begin with first. This section establishes the top ten recommendations for implementation according to each type of bicycle and pedestrian infrastructure improvement type as displayed on the bicycle and pedestrian route maps. These maps can be found on pages 47 and 48 of the St. Charles Bicycle and Pedestrian Master Plan.

METHODOLOGY

The bicycle and pedestrian recommendations were prioritized based on the highest aggregate score calculated from three different categories: Connectivity, Accessibility, and Feasibility. Each category had subcategories that were scored and weighted based on how well they accomplished the planning priorities (see chart 1).

Connectivity	Accessibility	Feasibility
■ Trails ■ Parks ■ Schools ■ Commercial District	■ Furthers existing bicycle/pedestrian infrastructure ■ Facilitates crossing over busy roads ■ Improves safety on high level of stress streets	■ under $30,000 ■ $30,001 to $100,000 ■ $100,001 to $200,000 ■ $200,001 to $500,000 ■ over $500,000

Chart 1: Prioritization scoring categories and subcategories

The bicycle and pedestrian recommendations were scored as street segments which prioritize the part of the route that should be developed first. Ideally, the whole route will be developed in conjunction with the segment, but in cases where funding is prohibitive, developing only these segments will provide the greatest improvement in relation to the goals of the planning priorities. The exact location of the segment is listed in the prioritization table and can also be found through the GIS map provided to the City.

The street segments were all scored separately according to the associated recommended improvement upon it: multi-use path, bicycle lane, calm street, shared street, and add sidewalk. The top ten highest scoring segments for each recommended improvement are listed in this section.

TOP TEN RECOMMENDATIONS

The prioritization tables below provide the City with only the top ten recommendations, however, if funding or other opportunities allow development of different recommendations, the City should still pursue them. The long range vision of the plan can only be accomplished through incremental steps. As such, any opportunity, regardless of conformity with the prioritization tables and regardless of how small, is better for the future than nothing at all.

MULTI-USE PATHS

Street Name	Speed Limit (mph)	Value
Boschertown Rd (Between Fox Hill Park and Highway B)	35	190
New Town Blvd (Between New Town Dr and Highway B)	35	170
Highway B (Between New Town Blvd and Highway 94 N)	55	170
New Town Blvd (Between Fountain Lakes Blvd and Boschert Greenway)	35	165
Fountain Lakes Blvd (Between Huster Rd and New Town Blvd)	25	160
Hayford Rd Connection (Between Hayford Rd and Huster Rd)	5	160
Boschert Greenway to Stowe Landing	0	160
Highway B to Sublette St	0	160
Fountain Lakes to Hayford Rd (Between Fountain Lakes N. Park and Hayford Rd)	0	160
Hayford to 370 Lakeside Park	0	160

BICYCLE LANES

Street Name	Speed Limit (mph)	Value
Clark St (Between Lindenwood Ave and N Kingshighway St)	25	195
Clark St (Between N Kingshighway St and Riverside Dr)	25	185
Nichols Rd (Riverfront Dr) (Between S Fifth St and Beale St)	25	175
Veterans Memorial Pkwy (On/Off Ramp from First Capitol Dr)	25	175
First Capitol Dr (On/off ramps to First Capitol Dr after roundabout)	25	165
First Capitol Dr (On/Off Ramp from Veteran's Memorial Pkwy)	45	165
Boschertown Rd (Between Mueller Rd and Boschert Greenway)	35	160
First Capitol Dr (Between N Kingshighway St and Riverside Dr)	30	155
Mueller Rd (Between New Town Blvd and Boschertown Rd)	35	150
Olive St (Between N Fifth St and Katy Trail)	25	150

CALM STREETS

Street Name	Speed Limit (mph)	Value
Jefferson St (Between N Kingshighway St and Riverside Dr)	25	145
Homewood Ave (Between Elm St and Concordia Ln)	25	135
N Sixth St (Between Jefferson St and N Kingshighway St)	25	130
Concordia Ln (Between Homewood Ave and W Randolph St)	25	125
W Randolph (Northeast of Condordia Ln)	25	125
Nathan Ave (Between Nathan St and Boone Ave)	15	125
Nathan St (Between Dardenne St and Nathan Ave)	25	125
Dardenne (Between Nathan St and Rose Brae Dr)	20	125
Rose Brae Dr (Between Dardenne St and Boone's Lick Dr)	25	125
Perry St (Between Boone Ave and Riverside Dr)	25	125

SHARED LANES

Street Name	Speed Limit (mph)	Value
N Main St (Between Tecumseh St and Missouri Route 370)	25	190
Boone's Lick Rd (Between S Fifth St and Riverside Dr)	25	165
Riverside Dr (Between Boone's Lick Rd and Clark St)	30	165
S Second St (Between McDonough St and Jefferson St)	25	160
N Second St (Between Jefferson St and Tecumseh St)	30	150
N Main St (Between Missouri Route 370 and Jean Baptiste Point Dusable Park)	25	145
Lombard St (Between Beale St and S Main St)	25	120
Beale St (Between S Fifth St and I-70)	25	120
Beale Parking Lot (East of Beale St)	0	120
Country Club Rd (Between Treetop Dr and Veteran's Memorial Pkwy)	35	115

ADD SIDEWALK

Street Name	Value
Veterans Memorial Parkway (Muegge Rd to Fairgrounds Rd)	135
Harry S Truman Blvd (370 Lakeside Park to Norfolk Southern Railroad)	105
Rose Brae Dr (South of Dardenne St to Boone's Lick Park)	90
S River Rd (Pralle Ln to Arena Pkwy)	85
Boone Ave (Between West Clay St and First Capitol Dr)	80
Clarence Dr (West of Mamelles Dr)	65
Sherman Dr (West of Lincoln Dr)	60
Wilshire Valley Blvd (Wilshire Valley Dr to Schaefer Park)	60
Dee Ave (Susan Dr to Ruth Dr)	60
Susan Dr (Zumbehl Rd to Dee Ave)	60

TOP TEN SCORES OUT OF ALL RECOMMENDED IMPROVEMENTS

Street Name	Type	Speed Limit (mph)	Value
W Clark St	Bike Lane	25	195
Cave Springs Dr	Multi-use Path	25	190
N Main St	Shared Lane	25	190
Clark St	Bike Lane	25	185
Nichols Rd	Bike Lane	25	175
Veterans Memorial Pkwy	Bike Lane	25	175
New Town Blvd	Multi-use Path	35	170
94 to Jean Baptiste	Multi-use Path	0	170
N Kingshighway St	Multi-use Path	25	165
First Capitol Dr	Bike Lane	25	165

2 COST ESTIMATE

INFRASTRUCTURE RECOMMENDATIONS AND PRE-ENGINEERING ESTIMATES OF COST

The following section proposes recommendations for how to connect and strengthen the existing walking and bicycling network. The recommendations are presented by infrastructure type, with pre-engineering estimates of cost and notes on existing right-of-way. Right-of-way (ROW) was based on St. Charles County parcel data.

Pre-engineering estimates of costs are based on conceptual design evaluation of the facilities and pre-engineering design development. The unit cost numbers are based on cost data in Trailnet's Streets For Everyone (2013) and FHWA's Costs for Pedestrian and Bicyclist Infrastructure Improvements (2013). The costs were adjusted for inflation to reflect the year 2016 construction market. They are subject to traditional market place fluctuations. These estimates do not include an estimate of land acquisition, due to the high variability of costs.

$55,067,140 — Total Cost of Plan

$25,952,040 — Total Cost of I-70 Bridge project, Missouri Route 370 Bridge project, and Rails to Trails Path

$29,115,100 — Total Cost of Plan *without* the I-70 Bridge project, Missouri Route 370 Bridge project, and Rails to Trails Path

MULTI-USE PATHS

Multi-use paths (MUPs) are at least 10′ wide and used for walking and bicycling in both directions. The City of St. Charles currently has a network of multi-use paths that are popular and safe.

The costs do not include the cost of right-of-way acquisition due to the high variability in costs. The notes address the changes needed in order to accommodate a multi-use path. The ROW information is based on the St. Charles County Online Parcel Viewer and is meant only as a guide to prioritization and feasibility.

Street	Length (Miles)	Estimated Cost	Notes
Main Center to Parking (East of N Second St)	0.26	$70,200	Connections to Park/Greenway - ROW available
Riverside to Katy Trail (East of Riverside Dr)	0.05	$13,300	Connections to Park/Greenway - ROW needs to be determined
Blackhurst Elm Connection (West of W Adams St)	0.15	$40,700	Connections to Park/Greenway – Widen sidewalk
Boschertown Rd (Between Fox Hill Park and Highway B)	1.46	$394,000	North side, 10' MUP, ROW limited in sections
New Town Blvd (Between New Town Dr and Highway B)	0.73	$196,700	East side, 10' MUP, ROW available
Highway B (Between New Town Blvd and Highway 94 N)	1.56	$420,700	South side, 10' MUP
New Town Blvd (Between Fountain Lakes Blvd and Boschert Greenway)	0.62	$166,100	East side, 10' MUP through lane diet and continuing through existing ROW to connect existing trail
Fountain Lakes Blvd (Between Huster Rd and New Town Blvd)	0.65	$176,400	South side, 10' MUP
Hayford Rd Connection (Between Hayford Rd and Huster Rd)	1.07	$288,000	ROW needed for unincorporated County vacant agricultural land.
Boschert Greenway to Stowe Landing	0.29	$78,400	ROW needs to be determined; 10' MUP
Highway B to Sublette St	0.48	$129,700	ROW needs to be determined; 10' MUP
Fountian Lakes to Hayford Rd (Between Fountain Lakes North Park and Hayford Rd)	1.73	$467,100	ROW needs to be determined in unincorporated County
Hayford to 370 Lakeside Park	0.28	$74,800	ROW needs to be determined in unincorporated County and City will need to work with the City of St. Peters
Hayford Rd (Between Fountain Lakes to Hayford Rd and Hayford Rd Connection)	0.67	$181,100	ROW needs to be determined in unincorporated County

Street	Length (Miles)	Estimated Cost	Notes
Catalpa to Hwy 94 N (Between Clarence Dr and Hawning Rd)	0.45	$120,500	ROW needs to be determined; 10' MUP
Droste Rd (Between S Duchesne Dr and West Clay St)	0.43	$117,200	North side, widen sidewalk to 10' MUP, ROW limited in sections
Zumbehl Rd (Between Elm Point Rd and First Capitol Dr)	3.30	$889,900	East side, 10' MUP using lane diet, and widening existing sidewalk
Olde Saybrook Dr to West Clay St	0.27	$71,600	ROW needs to be determined
Forest Hill Dr to Veterans Memorial Pkwy	0.28	$76,000	ROW needs to be determined
N Kingshighway St (Between First Capitol Dr and W Randolph St)	1.05	$281,900	North side, widen sidewalk to 10' MUP
Blanchette Park (East of N Duchesne Dr)	0.39	$104,000	ROW needs to be determined
Little Hills Expy (Between Mel Wetter Pkwy and just east of N Third St)	0.32	$87,300	North side, 10' MUP through existing shoulder and available ROW
94 to Jean Baptiste (Between Highway 94 and N Main St)	0.20	$54,400	ROW needs to be determined
Jean Baptiste to Katy Trail (Between N Main St and Katy Trail)	0.20	$53,100	Existing trail that needs to be updated
Missouri Route 370 to Katy Trail North	0.15	$40,200	Existing trail that needs to be updated
Missouri Route 370 to Katy Trail South	0.21	$56,800	Existing trail that needs to be updated
West Clay St (Between Harry S Truman Blvd and S Duchesne Dr)	2.82	$759,300	North side, 10' MUP by widening sidewalk, lane diet, ROW limited in some sections
Harry S Truman Blvd (Between Cave Springs Dr and Norfolk Southern Railroad)	1.24	$335,400	East side, 10' MUP using lane diet, ROW available
Future Greenway (Norfolk Southern Railroad to West Clay Street, east of Harry S Truman Blvd)	1.37	$368,700	ROW needs to be determined in unincorporated county
Muegge Rd (Between Mexico Rd and S Old Highway 94)	2.60	$700,100	East side, 10' MUP using lane diet
Cave Springs Dr (Between West Clay St and Mexico Rd)	0.28	$76,600	East side, 10' MUP using lane diet, and widening existing sidewalk

Street	Length (Miles)	Estimated Cost	Notes
Hawks Nest Dr (Between Friedens Rd and West Clay St)	0.92	$247,100	South side, 10' MUP using lane diet
S Old Highway 94 (Between Friedens Rd and Sherman Dr)	0.60	$161,200	North side
First Capitol Dr (South side, between Friedens Rd and West Clay St)	1.45	$392,000	South side, 10' MUP, widen existing sidewalk in some places; ROW limited in some sections
First Capitol Dr (North Side, between Sherman Dr and West Clay St)	0.81	$219,500	North side, 10' MUP, widen existing sidewalk in some places; ROW limited in some sections
Friedens Rd (Between First Capitol Dr and Arena Pkwy)	1.67	$448,800	East side, 10' MUP using lane diet, and widening existing sidewalk
Fairgrounds Rd (Between Friedens Rd and Veterans Memorial Pkwy)	1.10	$295,400	East side, 10' MUP through lane diet and continuing through existing ROW
S Fifth St (Between Fairgrounds Rd and Beale St)	0.48	$128,500	South side 10' MUP, widen existing sidewalk in some places, ROW limited in sections.
Heatherbrook Park (Between Friedens Rd and Pralle Ln)	0.43	$116,300	ROW needs to be determined
Heatherbrook Park (North of S River Rd)	0.66	$177,900	ROW needs to be determined
S Old Highway 94 (Between Muegge Rd and Zumbehl Rd)	1.14	$306,500	South side, widen existing sidewalk
St. Peters Pkwy (Between Heritage Crossing and Heritage Park)	0.19	$50,000	South side, 10' MUP using lane diet
Heritage Crossing (Between Schaefer Park and St. Peters Pkwy)	0.15	$39,300	East side, 10' MUP using lane diet
Muegge Rd to Veterans Memorial Pkwy	0.68	$183,200	ROW needs to be determined
Elm Point Industrial Dr (Between Moore Lake trail and Elm St)	0.13	$35,900	North side, widen existing sidewalk in some places, ROW limited in some areas.
Highway 94 N (Between Little Hills Expy and 94 to Jean Baptiste)	0.27	$73,300	North side, 10' MUP using lane diet and existing shoulder
94 to Jean Baptiste (Between Highway 94 N and 94 to Jean Baptist)	0.08	$22,100	ROW needs to be determined
Elm St (West side, between Elm Point Industrial Dr and Old Elm St)	0.29	$78,200	West side, 10' MUP using lane diet

Street	Length (Miles)	Estimated Cost	Notes
I 70 Bridge	1.04	$16,600,000	MUP next to Highway - Cantilevered paths
I 70 Right of Way		$1,721,600	ROW - ROW available, crossings will be a challenge
Missouri Route 370 Bridge (funded)	0.66	$3,100,000	MUP next to Highway - 6' barrier separated bike lanes
Rails to Trails Path	5.27	$1,420,800	Rails to Trails Path - South/west side of rail proposed route
Norfolk Southern Rail Right of Way		$3,109,640	ROW
Total	**43.58**	**$35,817,440**	**--**

BICYCLE LANES

The following cost estimates are based on grinding out and restriping existing lanes. Often, bicycle lanes can be painted after a street is repaved, greatly reducing the cost of bicycle lanes. Bicycle lanes should be a minimum of 5′ when adjacent to parking. Buffered bicycle lanes should be a minimum of 5′ with a 3′ buffer from parking or travel lanes. Buffered bicycle lanes or protected bicycle lanes should be considered as a priority bicycle facility before installing a bicycle lane without a buffer.

The notes address how the bicycle lanes can be created within the existing roadway. Most of the bike lanes can be created through a lane diet, or narrowing existing lanes to 10′, which can also reduce crashes in urbanized areas. Road diets, or reducing four lane roads to three lanes, are also recommended for some streets. Road diets have been shown to reduce crashes and have been used extensively in the region.

An advisory bicycle lane improves safety without having to widen the roadway. People driving may drive in advisory bicycle lanes, but must yield to people on bikes. In practice, advisory bicycle lanes are similar to shared routes with shared lanes markings and help draw additional awareness to people biking.

Street	Length (Miles)	Estimated Cost	Notes
New Town Dr (Between New Town Blvd and New Town Dr Roundabout)	0.20	$25,600	Buffered bicycle lane - 10.5′ driving lane, two lanes
Mueller Rd (Between New Town Blvd and Boschertown Rd)	1.40	$129,500	6' bicycle lane - 10.5′ driving lane, 9′ center turn lane, three lanes - future considerations for a lane diet from three to two and upgrade bicycle facility
Boschertown Rd (Between Mueller Rd and Boschert Greenway)	0.36	$45,000	Buffered bicycle lane - 10.5′ driving lane, 10′ center turn lane, three lanes
Highway 94 N (Between N Third St and Highway B)	2.15	$268,200	Buffered bicycle lane - 10.5′ driving lane, two lanes
New Town Blvd (Between Missouri Route 370 and Fountain Lakes Blvd)	0.23	$28,800	Buffered bicycle lane - 10.5′ driving lane, 10′ center turn lane, four lanes (two lanes (northbound), center turn lane, one lane (southbound))
Elm St (Between Missouri Route 370 and Elm Point Industrial Dr)	0.44	$54,800	Buffered bicycle lane - five lanes (10.5' driving, 11' center turn lane)
Elm St (Between Elm Point Industrial Dr and Old Elm St)	0.30	$18,700	Buffered bicycle lane - 10.5′ driving lane, two lanes
Old Elm St (Between Elm St and Elm Point Rd)	0.16	$19,900	Buffered bicycle lane – 10′ driving lane, 10′ center turn lane, three lanes
Elm Point Rd (Between Kennett Dr and Deerfield Dr)	0.21	$26,300	Buffered bicycle lane to Shared Lane – 10′ driving lane, two lanes
Elm Point Industrial Dr (Between Deerfield Dr and Mueller Rd)	1.10	$137,600	Buffered bicycle lane - 10.5′ driving lane, two lanes
Lakeside Park Dr (Between Lakeside Park Dr and Premier Pkwy S)	0.58	$72,600	Buffered bicycle lane - 10.5′ driving lane, four lanes, portions two lanes

BICYCLE LANES COST ESTIMATE (CONTINUED)

Street	Length (Miles)	Estimated Cost	Notes
Harry S Truman Blvd (Between Premier Pkwy S to Norfolk Southern Railroad)	0.54	$67,000	Buffered bicycle lane - 10.5′ driving lane, four lanes
N Duchesne Dr (Between Sibley St and Randolph St)	0.89	$82,100	6' bicycle lane – 10′ driving lane, two lanes
S Duchesne Dr (Between Droste Rd and Sibley St)	0.70	$65,100	6' bicycle lane – 10′ driving lane, two lanes
Sun Lake Dr (West of S Duchesne Dr and Droste Rd)	0.29	$27,100	6' bicycle lane – 10′ driving lane, two lanes
Droste Rd (Between Zumbehl Rd and S Duchesne Dr)	1.63	$150,900	6' bicycle lane – 10′ driving lane, two lanes
West Clay St (Between S Duchesne Dr and First Capitol Dr)	0.60	$74,500	Buffered bicycle lane - 10.5′ driving lane, 10′ center turn lane, current: five lanes, consider road diet from five lanes to three lanes
W Randolph St (Between N Duchesne Dr and N Kingshighway St)	0.70	$64,300	6' bicycle lane – 10' driving lane, two lanes
Clark St (Between N Kingshighway St and Riverside Dr)	0.65	$60,400	6' bicycle lane – 10′ driving lane, two lanes - portions have on-street residential parking so will need to determine shared lanes vs. removal of on-street parking
Clark St (Between Lindenwood Ave and N Kingshighway St)	0.14	$12,900	6' bicycle lane – 10′ driving lane, two lanes
First Capitol Dr (Between N Kingshighway St and Riverside Dr)	0.97	$89,900	5' bicycle lane – 10′ driving lane, current: four lanes --> will need to do road diet from four to three. Portions will need to remove on-street parking or become shared lane. Should take into consideration elevation changes on roadway
N Fifth St (Between Jefferson St and Olive St)	0.92	$84,700	5' bicycle lane – 10′ driving lane, two lanes with parking. Will need to determine shared lanes vs. removal of on-street parking
S Fifth St (Between Boone's Lick Rd and Jefferson St)	0.73	$67,000	6' bicycle lane – 10′ driving lane. Number of lanes varies block by block so traffic study will need to be conducted to determine best approach of adding bike lanes. Consideration for a road diet from four lanes to three lane might be needed
Boone's Lick Rd (Between St. Charles Ave and Fairgrounds Rd)	0.42	$38,400	6' bicycle lane – 10′ driving lane, two lanes
Boone's Lick Rd (Betweeen Fairgrounds Rd and S Fifth St)	0.66	$60,600	6' bicycle lane – 10′ driving lane, two lanes

Street	Length (Miles)	Estimated Cost	Notes
Boone's Lick Rnd (roundabout)	0.06	$7,700	6' bicycle lane
First Capitol Dr (On/off ramps to First Capitol Dr after roundabout)	0.29	$26,500	Buffered bicycle lane - 10.5′ driving lane, two lanes. Roundabout merging will need to be taken into consideration
Ehlmann Rd (Between Harrry S Truman Blvd and Zumbehl Rd)	0.83	$77,000	6' bicycle lane, 10′ driving lanes, when there is a center turn lane change to 10′. Roadway ranges from two lane to three lane on various segments
Country Club Rd (Between Treetop Dr and Berlekamp Dr)	0.37	$34,500	5' bicycle lane, 10′ driving lane, two lanes
Hackmann Rd (Between McClay Road and Muegge Rd)	1.47	$135,700	6' bicycle lane, 10′ driving lanes, 10′ center turn lane
Fairgrounds Rd (Between Veterans Memorial Pkwy and Boone's Lick Rd)	0.32	$40,000	Buffered bicycle lane, when not feasible then 6' bicycle lane, 10′ driving lane, two lanes
Veterans Memorial Pkwy (Between Muegge Rd and S Fifth St)	4.42	$552,000	Buffered bicycle lane, when not feasible then 6' bicycle lane, 10′ driving lane, changes from three lanes to two lanes
Nichols Rd (Riverfront Dr) (Between S Fifth St and Beale St)	0.09	$8,100	5' bicycle lane, 10′ driving lane, two lanes (eastbound), one lane (westbound)
Arena Pkwy (Between Hemsath Rd and Friedens Rd)	1.83	$229,100	Buffered bicycle lane - 10.5′ driving lane, four lanes, portions five lanes
Upper Bottom Rd (West of Hemsath Rd)	0.56	$70,100	Buffered bicycle lane - 10.5′ driving lane, four lanes, bicycle lane enters St. Peters, so will need to work with St. Peters on this project
Bluestone Dr (Between Hemsath Rd and Pralle Ln)	0.56	$70,000	Buffered bicycle lane – 10′ driving lane, two lanes
McClay Rd (Between Rodeo Dr and Hackmann Rd)	0.08	$9,700	Buffered bicycle lane – 10′ driving lane, lanes vary from two to four
Veterans Memorial Pkwy (On/ Off Ramp from First Capitol Dr)	0.21	$19,800	Will need to determine approach when changes are made
First Capitol Dr S On/Off (On/Off Ramp from Veterans Memorial Pkwy)	0.10	$9,300	Will need to determine approach when changes are made
S Second St (Between Boone's Lick Rd and McDonough St)	0.09	$4,100	Climbing Lane - 5' bicycle lane, 10′ driving, two lanes
Olive St (Between N Fifth St and Katy Trail)	0.31	$14,500	Climbing Lane - 5' bicycle lane, 10′ driving, two lanes, shared lanes or on-street parking removed in portions of the street

Street	Length (Miles)	Estimated Cost	Notes
Pralle Ln (Between Bluestone Dr and Bayonne Dr)	0.29	$13,600	Climbing Lane - Advisory 6' bicycle lane
Hackmann Rd (Between McClay Rd and N Outer Rd)	0.15	$7,100	Climbing Lane - Advisory 6' bicycle lane within existing roadway, change to 6' bicycle lane when repainting roadway
Total	**29**	**$3,100,700**	**--**

CALM STREETS

Calm streets consist of treatments such as diverters with bike crossings, wayfinding signs on both sides of the street, and shared lane markings on both sides of the street. Calm streets can also include, but are not limited to, curb extensions with no landscaping, curb extensions with rain gardens, traffic circles, and chokepoints. Wayfinding signage should have information about nearby destinations and mileage, but can otherwise be customized to enhance the neighborhood's sense of place.

Shared lane markings do not change how people drive or bicycle, but they help to raise awareness of the presence of bicycles. The following cost estimates are based on shared lane markings being placed every 250 feet. Signed bicycling and walking routes use the existing roadway, so there are no notes on right-of-way.

Street	Length (Miles)	Estimated Cost
Sublette St (Between Barter St and Island Harbor Dr)	0.04	$2,600*
Rue Royal (Between Civic Cir and New Town Lake Dr)	0.02	$1,100*
S New Town Ave (Between New Town Dr and Domain St)	0.24	$14,800*
N New Town Ave (Between New Town Dr and Domain St)	0.24	$14,800*
New Town Dr (Roundabout)	0.29	$39,300
New Town Lake Dr (Between Rue Royal and Granger Blvd)	0.55	$33,600*
Domain St (Between S New Town Ave and N New Town Ave)	0.02	$1,400*
Barter St (Between Granger Blvd and Sublette St)	0.15	$9,400*
Simeon Bunker St (Between Stowe Landing and New Town Lake Dr)	0.10	$6,000*
Civic Cir (Between Domain St and Rue Royal)	0.11	$6,700*
Wainwright Alley (West of Stowe Landing)	0.46	$61,600
Granger Blvd (Between Wainwright Alley and Barter St)	0.42	$25,400*
Charlestown Village Dr (Between Stowe Landing and Cog Wheel Sta)	0.21	$28,700
Cog Wheel Sta (Between Charlestown Village Dr and Pathfinder Trl)	0.24	$14,300*
Pathfinder Trl (Between Cog Wheel Sta and Boschertown Rd)	0.09	$12,600
Stowe Landing (Between Charlestown Village Dr and Simeon Bunker St)	0.15	$9,400*
Island Harbor Dr (Sublette St)	0.17	$10,500*
Catalpa Dr (South of Clarence Dr, west of Discovery Middle School).	0.05	$7,000
Kister Dr (South of Fox Hill Park, north of Tamarack Dr)	0.09	$5,400*
Clarence Dr (Between Tamarack Dr and Catalpa Dr)	0.25	$15,500*
Tamarack Dr (West of Clarence Dr)	0.31	$18,900*
Elm Point Rd (North of W Adams St)	0.09	$11,400
W Adams St (Between Elm Point Rd and N Sixth St)	2.68	$357,800

Street	Length (Miles)	Estimated Cost
Lindenwood Ave (Between Watson St and W Randolph St)	0.90	$55,400*
Gamble St (Between Watson St and Sibley St)	0.09	$5,400*
Watson St (Between Gamble and N Kingshighway St)	0.28	$37,300
Sibley St (Between Rebecca Dr and Gamble St)	0.73	$97,800
Homewood Ave (Between Elm St and Concordia Ln)	0.06	$7,600
Concordia Ln (Between Homewood Ave and W Randolph St)	0.71	$43,000*
W Randolph (Northeast of Condordia Ln)	0.43	$57,800
Elmhurst Dr (Between Elm St and W Adams St)	0.24	$32,600
Hunters Rdg (Between Yale Blvd and Elm St)	0.59	$78,900
Principia Ave (South of Cole Blvd)	0.28	$16,800*
Cole Blvd (West of Elm St)	0.38	$51,400
Yale Blvd (Between Hunters Rdg and Norwich Dr)	0.43	$26,200*
Norwich Dr (Between Olde Saybrook Dr and Rebecca Dr)	0.96	$58,500*
Olde Saybrook Dr (West of Norwich Dr)	0.10	$13,100
Rebecca Dr (Between Mayer Dr and Sibley St)	0.61	$37,300*
Mayer Dr (Between Rebecca Dr and S Pam Ave)	0.06	$3,600*
S Pam Ave (Between Droste Rd and Mayer Dr)	0.23	$30,600
James Dr (Between Paul Ave and Droste Rd)	0.22	$28,900
Paul Ave (South of James Dr)	0.11	$14,600
Sun Lake Dr (South of Paul Ave)	0.05	$7,100
N Sixth St (Between Jefferson St and N Kingshighway St)	0.62	$82,900
S Sixth St (Between Boone's Lick Rd and Jefferson St)	0.79	$105,000
Nathan Ave (Between Nathan St and Boone Ave)	0.17	$10,100*
Nathan St (Between Dardenne St and Nathan Ave)	0.13	$7,700*
Dardenne (Between Nathan St and RoseBrae Dr)	0.19	$11,400*
Rosebrae Dr (Between Dardenne St and Boone's Lick Dr)	0.13	$7,900*
Boone Ave (Between Nathan Ave and First Capitol Dr)	0.30	$39,700
Jefferson St (Between N Kingshighway St and Riverside Dr)	0.89	$119,300
Perry St (Between Boone Ave and Riverside Dr)	0.97	$129,200
Penbrooke Ln (Between Ehlmann Rd and Droste Rd)	0.67	$89,400
Embleton Ln (Between Essex St and Ipswich Ln)	0.12	$7,600*

Street	Length (Miles)	Estimated Cost
Ipswich Ln (Between Embleton Ln and Camden St)	0.07	$4,400*
Fleet Ln (Between Camden St and Bolton St)	0.12	$7,200*
Bolton St (Between Fleet Ln and Regent Dr)	0.11	$6,900*
Campden St (Between Ipswich Ln and Camden Ln)	0.11	$6,500*
Essex St (Between Penbrooke Ln and Embleton Ln)	0.16	$9,700*
Regent Dr (Between Bolton St and Sawyer Blvd)	0.07	$4,300*
Sawyer Blvd (Between Regent Dr and W Clay St)	0.54	$71,700
Country Club Rd (Between Muegge Rd and Berlekamp Dr)	0.52	$69,000
Berlekamp Dr (Between Treetop Dr and Bogey Estates Dr)	0.38	$23,100*
Bogey Estates Dr (Between Berlekamp Dr and Par Dr)	0.09	$5,500*
Par Dr (Between Bogey Estates Dr and Graystone Dr)	0.14	$8,500*
Graystone Dr (Between Muegge Rd and Zumbehl Rd)	1.48	$197,900
Forest Hill Dr (Between Regency Pkwy and Rosewall Dr)	0.11	$15,000
Rosewall Dr (Between Forest Hill Dr and Forest Gate Dr)	0.17	$22,300
Forest Gate Dr (Between Rosewall Dr and Hawks Nest Dr)	0.10	$13,600
Lynnbrook Dr (Between Hawks Nest Dr and S Old Highway 94)	0.52	$69,900
Sherman Dr (Between First Capitol Dr and Lincoln Dr)	0.31	$40,900
Lincoln Dr (Shorewinds Trl and Sherman Dr)	0.17	$10,100*
Talbridge Way (Between Shorewinds Trl and Fairgrounds Rd)	0.72	$96,100
Shorewinds Trl (Between Talbridge Way and Lincoln Dr)	0.25	$15,300*
Wilshire Valley Blvd (South of Wilshire Valley Dr)	0.04	$2,400*
Wilshire Walley Dr (Between Rodeo Dr and Wilshire Valley Blvd)	0.06	$3,700*
Rodeo Dr (Between McClay Rd and Wilshire Valley Rd)	0.19	$11,800*
Total	**25.84**	**$2,138,000**

*Calm street cost estimate only includes wayfinding signs, sharrows, and curb extension with no landscaping

SHARED LANES

Shared lanes consist of treatments such as shared lane markings on both sides of the street, signed bicycle routes, and possible reductions in speed limits. Shared lanes should evaluate current speed limit of the roadway and reduce speed limit if necessary to be 30 miles per hour or less. Shared lanes should be monitored as street characteristics change to update facilities if needed. Shared lanes are not considered a bicycle facility and provide minor safety improvements for people biking.

Street	Length (Miles)	Estimated Cost
N Third St (Between Norfolk Southern Railroad and Emmons Ave)	0.15	$5,500
Hawning Rd (Between Highway 94 N and N River Rd)	0.71	$26,200
N Main St (Between MO Route 370 and Jean Baptiste Point Dusable Park)	0.80	$29,400
N River Rd (After Jean Baptiste Point Dusable Park to Hawning Rd)	0.61	$22,300
Elm Point Rd (Between Zumbehl Rd and Kennett Dr)	0.90	$33,100
Zumbehl Rd (Between Elm Point Rd and Rails to Trails Path)	0.04	$1,400
Elm Point Rd (Between Old Elm St and W Adams St)	0.23	$8,400
Elm St (Between Hunters Rdg and Elmhurst Dr)	0.27	$10,000
Elm St (Between Old Elm St and Cole Blvd)	0.21	$7,900
S Duchesne Dr (Between West Clay St and Droste Rd)	0.40	$14,700
N Main St (Between Tecumseh St and Missouri Route 370)	0.33	$12,100
Tecumseh St (Between N Third St and N Main St)	0.16	$5,900
N Third St (Between Tecumseh St and Barthel Ave)	0.19	$7,000
N Second St (Between Jefferson St and Tecumseh St)	1.13	$41,300
S Second St (Between McDonough St and Jefferson St)	0.46	$17,000
Boone's Lick Rd (Between S Fifth St and Riverside Dr)	0.41	$15,000
Riverside Dr (Between Boone's Lick Rd and Clark St)	0.81	$29,600
Point West Blvd (Between Harry S Truman Blvd and West Clay St)	0.49	$17,900
Country Club Rd (Between Treetop Dr and Veterans Memorial Pkwy)	0.68	$24,800
Treetop Dr (Between Muegge Rd and Country Club Rd)	0.52	$19,100
Lombard St (Between Beale St and S Main St)	0.11	$4,200
Beale St (Between S Fifth and I-70)	0.18	$6,500
Beale Parking Lot (East of Beale St)	0.08	$3,000
Hemsath Rd (Between Bluestone Dr and Arena Pkwy)	1.00	$36,600
Kunze Dr (Between Hemsath Rd and Pralle Ln)	0.59	$21,800
Prralle Ln (Between Bayonne Dr and S River Road)	1.22	$44,800
Bluestone Dr (Between Pralle Ln and Ford Ln)	0.29	$10,600
Ford Ln (East of Bluestone Dr to Friedens Rd)	0.34	$12,500
S River Rd (Between Pralle Ln and Arena Pkwy)	0.20	$7,500
Total	**13.1**	**$496,100**

ADD SIDEWALK

The following costs estimates are based on adding curb and 5′ sidewalk on one side of the street.

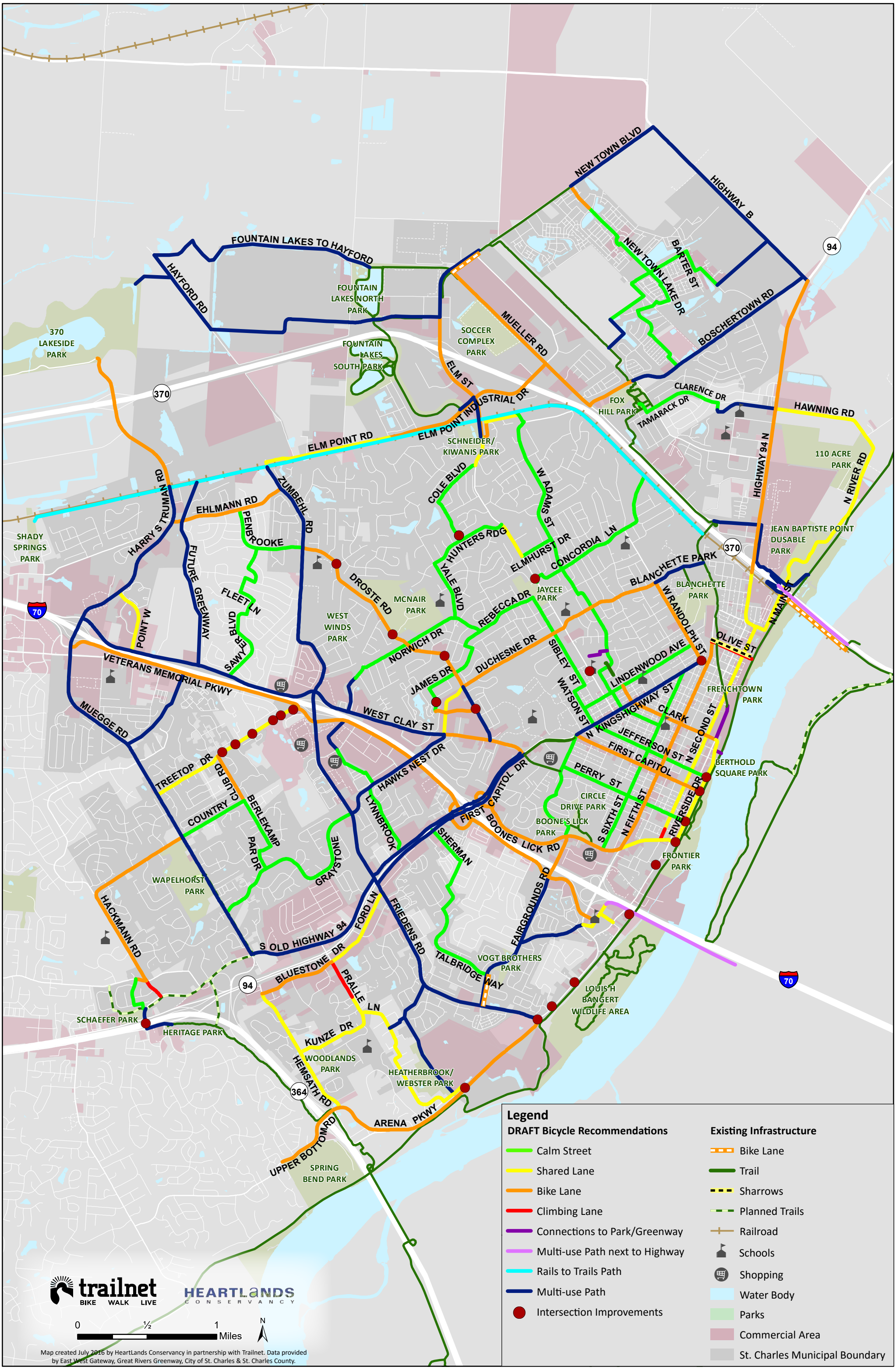
Street	Length (Miles)	Estimated Cost	Notes
Pralle Ln (Kunze Dr to S River Rd)	1.06	$1,119,100	East/West
Graystone Dr (East of Muegge Rd)	0.08	$82,700	North side
Ruth Dr (Between Dee Ave and Southwick Dr)	0.21	$224,700	North side
Ehlmann Rd (Between Harry S Truman Blvd and Sylvan Ln)	0.32	$339,100	South side
Boone Ave (Between West Clay St and First Capitol Dr)	0.27	$282,200	West side
Rose Brae Dr (South of Dardenne St to Boone's Lick Park)	0.04	$44,000	North side
W Adams St (Between Elm Point Rd and Ken Dr)	0.30	$314,400	West side
W Randolph St (N Wheaton Dr to Norfolk Southern Railroad)	0.33	$351,300	East side
Rauch Dr (West of W Adams St)	0.03	$33,100	North side
W Adams St (Indian Trail Dr to Ashland Pl)	0.64	$678,200	West side
W Adams St (North of Indian Hills Dr)	0.03	$33,200	West Side
N Duchesne Dr (St Robert Ln to Duchesne High School)	0.13	$140,700	North side
Clarence Dr (West of Mamelles Dr)	0.04	$42,700	North side
S Sixth St (Boone's Lick Rd to Schaefer Pl)	0.29	$303,700	West side
Sherman Dr (South of St. Robert Bellarmine Church)	0.07	$75,500	North side
Sherman Dr (Sherman Park Dr to Lincoln Dr)	0.08	$87,200	South side
Sherman Dr (West of Lincoln Dr)	0.03	$28,300	North side
Lincoln Dr (Grant Dr to Sherman Dr)	0.17	$182,500	West Side
Clarence Dr (Memelles Dr to Catalpa Dr)	0.14	$149,400	South side
Wilshire Valley Blvd (Wilshire Valley Dr to Schaefer Park)	0.03	$33,900	East side
Veterans Memorial Parkway (Muegge Rd to Fairgrounds Rd)	4.13	$4,361,800	South side
Zumbehl Rd (East of Paula Dr to Susan Dr)	0.08	$87,200	North Side
Dee Ave (Susan Dr to Ruth Dr)	0.07	$70,100	East side
Susan Dr (Zumbehl Rd to Dee Ave)	0.06	$65,000	North side
Elm Point Rd (W Adams St to Norfolk and Southern Railroad)	0.09	$89,900	East side
W Adams St (North of Rauch Dr)	0.02	$25,200	West side
Catalpa Dr (South of Clarence Dr)	0.06	$60,600	East side
Treetop Dr (Greenleaf Dr to Country Club Rd)	0.16	$164,200	North side
Kunze Dr (East of Hemsath Dr)	0.37	$385,800	North/South
S River Rd (Pralle Ln to Arena Pkwy)	0.20	$208,600	North/South
Harry S Truman Blvd (370 Lakeside Park to Norfolk Southern Railroad)	1.11	$1,173,100	East/West
Total	**10.64**	**$11,237,400**	**--**

INTERSECTION IMPROVEMENTS

Bicycle and pedestrian enhancements are recommended at the following intersections in order to improve connectivity and accessibility. The estimates are based on installing high-visibility crosswalks, curb bumpouts to shorten the crossing distance for people walking and bicycling, and crossing islands as appropriate. Detailed engineering studies need to be undertaken for each intersection to ensure safety enhancements are appropriate.

Street	Length (Miles)	Estimated Cost	Notes
South River Road/Arena Parkway	N/A	$64,200	
Friedens Road/Arena Parkway	N/A	$64,200	
Reservoir Ave/ S Main St	N/A	$64,200	
S. Riverside Dr/Katy Trail	N/A	$64,200	
Droste Rd/Huntington Park	N/A	$64,200	
Droste Rd/Lyons	N/A	$64,200	
Droste Rd/Yale Blvd	N/A	$64,200	
Raymond Dr/Droste Rd	N/A	$64,200	
Elm Street/Homewood Ave	N/A	$72,400	consider adding MUP - 0.03 miles
Elm St between Francis St and Gamble St	N/A	$64,200	
Fairways Circle/Country Club Rd	N/A	$64,200	
Huckfinn Dr/ Country Club Rd	N/A	$64,200	
Country Club Rd (Between Becky Thatcher and Huck Finn Dr)	N/A	$64,200	
Country Club Rd/Bogey Club Dr	N/A	$64,200	
Country Club Road/Elks Trail	N/A	$64,200	
Country Club Rd/Kristopher Bend	N/A	$64,200	
S Riverside Dr/Perry St	N/A	$64,200	
S Riverside Dr/Jefferson St	N/A	$64,200	
S Riverside Dr/First Capitol Dr.	N/A	$64,200	
Heritage Crossing across 364	N/A	$64,200	
W Randolph St/N Kingshighway St	N/A	$64,200	
South River Road – possible connection point to Katy Trail	N/A	$64,200	
Orchard Lane/S River Road – possible connection point to Katy Trail	N/A	$64,200	
S Main Street / near I-70 – possible connection point to Katy Trail	N/A	$64,200	
Principia Ave/Buckskin Path	N/A	$64,200	
Paul Ave/Sun Lake Dr	N/A	$64,200	
Total	**--**	**$1,677,400**	

City of St. Charles Bicycle Map



City of St. Charles Pedestrian Map