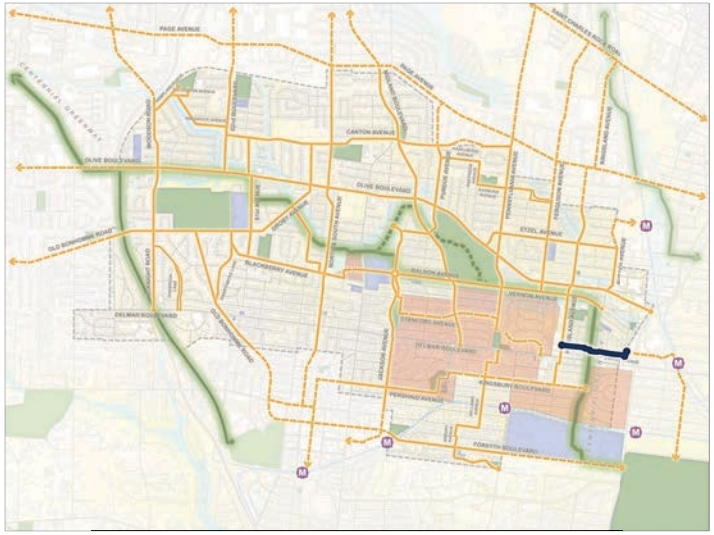
PROJECT EXTENTS

Enright Avenue Connector

Sharrows



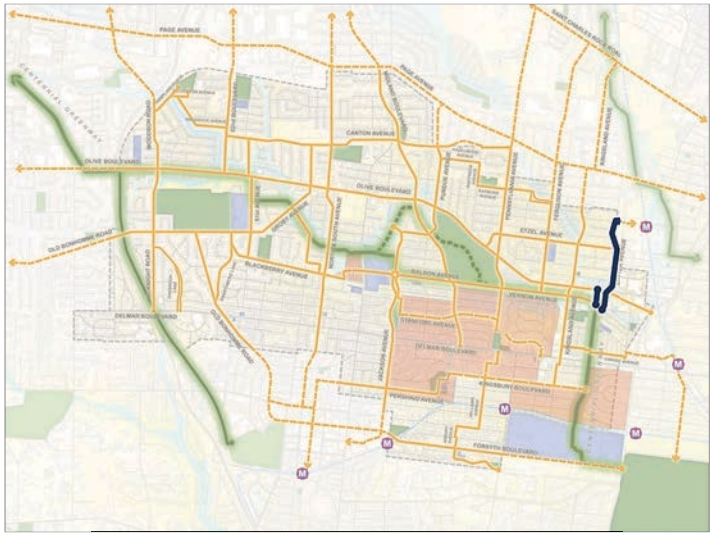
STREETS

- Enright Avenue
- Loop North

PROJECT EXTENTS

Sutter Avenue Connector

Sharrows



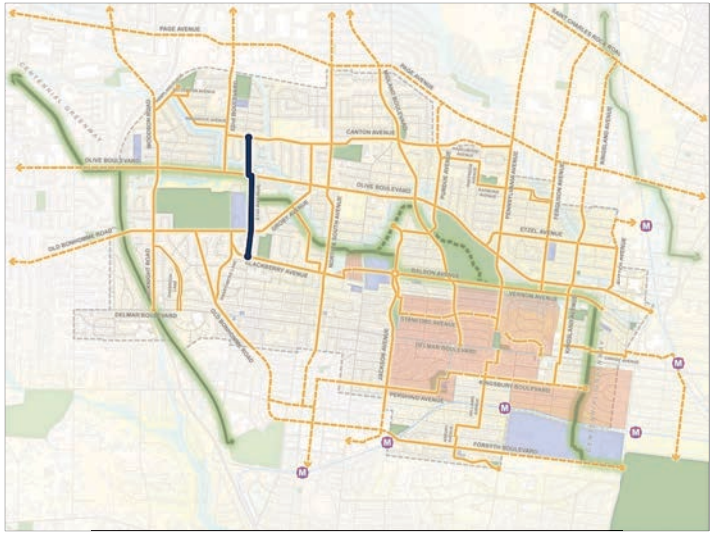
STAGE 1

- Sutter Avenue
- Plymouth Avenue

PROJECT EXTENTS

81st Avenue

Sharrows



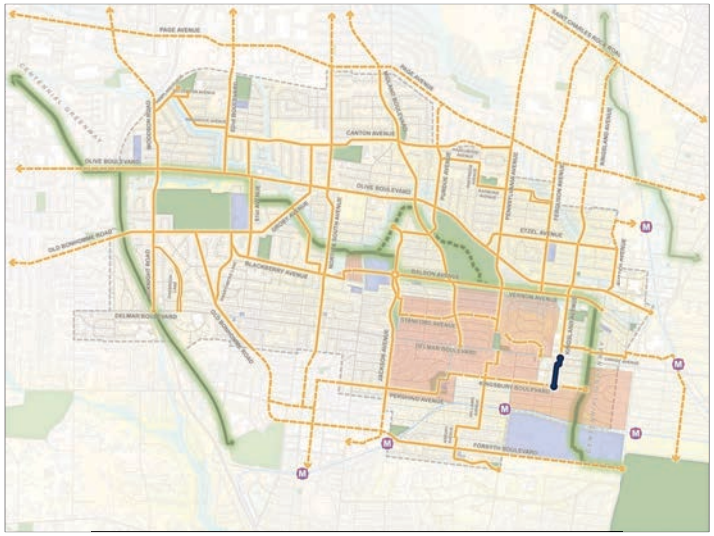
STREETS

- 81st Avenue
- Hafner Avenue

PROJECT EXTENTS

Kingsland Avenue

Sharrows



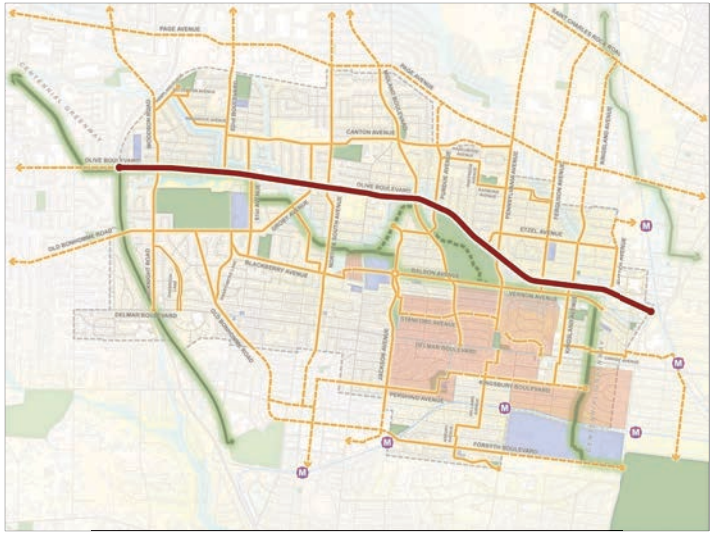
STAGE 1

- Delmar Boulevard south to Kingsbury Boulevard

PROJECT EXTENTS

Olive Boulevard

Bike Lanes



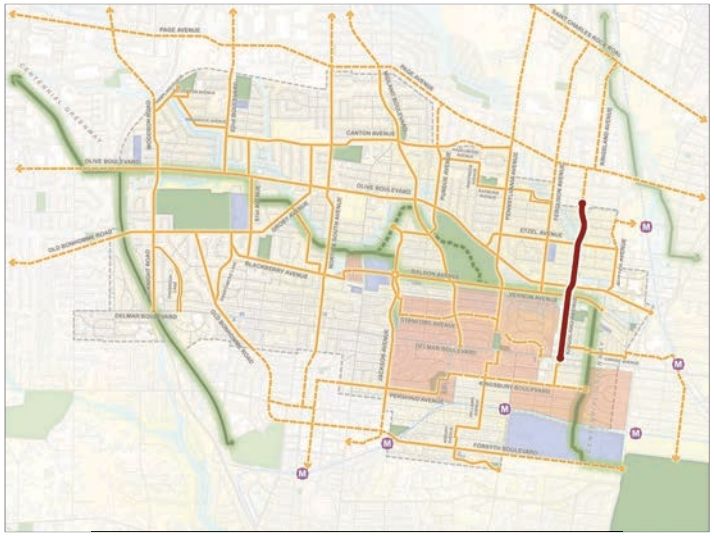
STREETS

- West City Limits east to Kingsland Boulevard

PROJECT EXTENTS

Kingsland Avenue

Bike Lanes



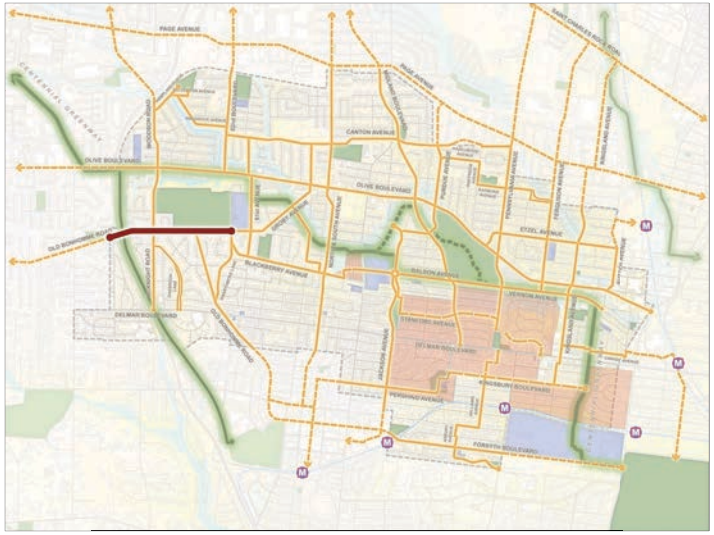
STREETS

- North City Limits south to Delmar Boulevard

PROJECT EXTENTS

Old Bonhomme Road

Bike Lanes



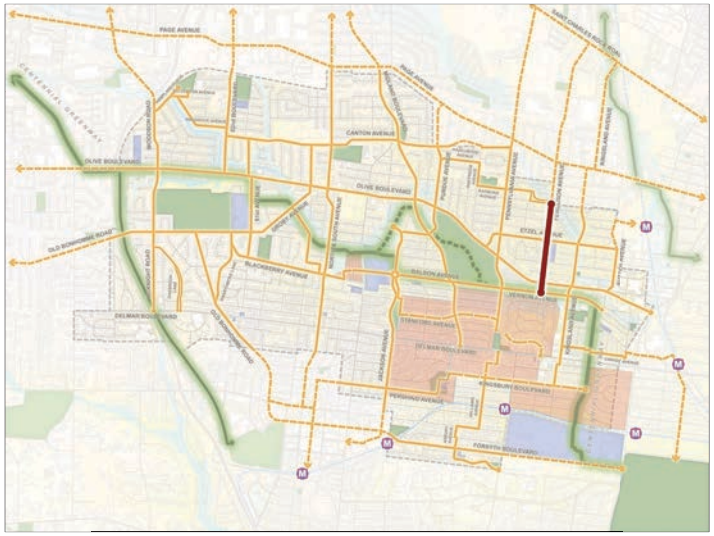
STREETS

- West City Limits east to 81st Avenue

PROJECT EXTENTS

Ferguson Avenue

Bike Lanes



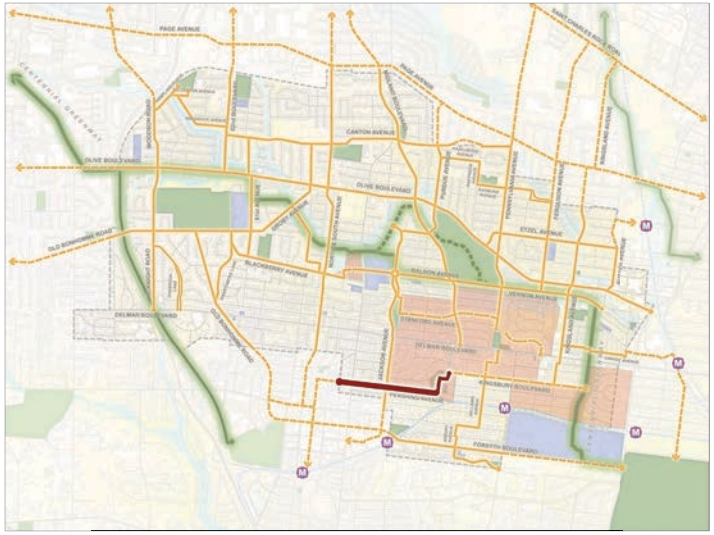
STREETS

- North City Limits south to Vernon Avenue

PROJECT EXTENTS

Pershing Avenue

Bike Lanes



STREETS

- West City Limits east to Flynn Park

PROJECT EXTENTS

St. Louis County Arterials

Pedestrian & Streetscape Improvements

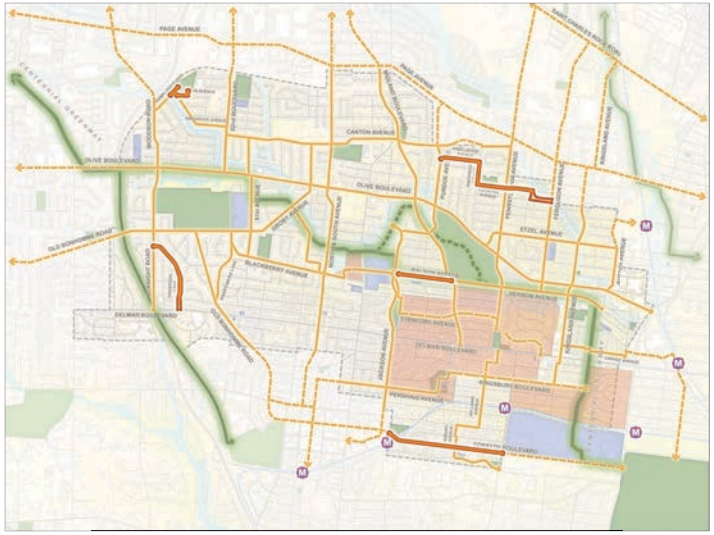
STREETS

- McKnight Road
- Midland Boulevard
- North & South Avenue
- Olive Boulevard (East City Limits to Kingsland Boulevard)
- Pennsylvania Avenue
- Vernon Avenue
- Woodson Road

PROJECT EXTENTS

Neighborhood Streets and Connectors

Pedestrian & Streetscape Improvements



STREETS

- Balson Avenue
- Forsyth Boulevard
- Fullerton Avenue
- Hazelwood Lane
- Kempland Place
- Melrose Avenue
- Oakbrook Lane
- Partridge Avenue
- Polk Avenue
- Purcell Avenue
- Raymond Avenue
- Roberts Avenue

PROJECT EXTENTS

All Bicycle Facility Streets

Pedestrian & Streetscape Improvements

STREETS

- All streets identified for Bicycle Facilities shall recieve Pedestrian & Streetscape Improvements as *Phase 2* or *Phase 3* Implementation Items

Appendix

Resolution 2013 - 17

A RESOLUTION ADOPTING THE BICYCLE AND PEDESTRIAN MASTER PLAN AS A SUPPLEMENT TO THE 2005 COMPREHENSIVE PLAN UPDATE

WHEREAS, a Bicycle and Pedestrian Master Plan was presented to the Plan Commission of the City of University City for consideration in accordance with the University City Charter, Section 62 which states that "*... The plan commission shall have the authority to prepare and submit to the council for its approval a master plan for the physical development of the city, including the general location, character and extent of streets, bridges, parks, waterways, and other public ways, grounds and spaces, together with the general location of public buildings and other public property, public utilities, and the extent and location of any public housing or slum clearance projects, and shall recommend such modifications of said plan, from time to time, as it deems in the city's interest..*" ; and

WHEREAS, a public hearing was held at the April 8, 2013 City Council meeting with public comments expressed and received; and

WHEREAS, at the same April 8, 2013 City Council meeting, the City Council passed a motion "to send the Draft Bicycle and Pedestrian Plan along with the comments from the just held Public Hearing and the comments from this Council back to the Plan Commission to be read, analyzed with regard to compliance with the Charter and University City Municipal policies, and considered for incorporation into the new Comprehensive City Plan that is in process of being developed"; and

WHEREAS, on August 27, 2013 the Plan Commission held a second public meeting that included wide public dissemination of the meeting notice as well as an Open House and distribution of a comprehensive set of questions and answers; and

WHEREAS, upon consideration of the public comments received, certain revisions have been made to the original Master Plan; and

WHEREAS, the Plan Commission, at their September 25, 2013 meeting, as the result of the review of the relevant sections of the City Charter of University City and University City Municipal Ordinances, unanimously voted to return the Revised Bicycle and Pedestrian Master Plan to the City Council with a recommendation that said plan be adopted as a supplement to the Comprehensive Plan Update of 2005; and

WHEREAS, the Plan Commission agrees to consider for incorporation the analysis and conclusion of the Revised Bicycle and Pedestrian Master Plan into the development of the next Comprehensive Plan Update.

NOW, THEREFORE, BE IT RESOLVED that the Bicycle and Pedestrian Master Plan, attached as Exhibit A, is hereby adopted as a supplement to the Comprehensive Plan Update of 2005 by the City Council of University City, Missouri.

BE IT FURTHER RESOLVED that the City Council of University City recognizes that its adoption of the Bicycle and Pedestrian Master Plan does not immediately commit City funds toward project implementation, and recommends that the City Manager explore funding opportunities for any relevant aspect of the Plan.

BE IT FURTHER RESOLVED that before a private subdivision is included with the implementation of the Bicycle and Pedestrian Master Plan, the City Manager will secure all necessary approvals from the trustees or other relevant authority associated with the impacted private subdivision.

BE IT FURTHER RESOLVED that the City Council of University City directs the City Manager to develop a priority and feasibility list of the bike/walk projects including accessible sidewalks for Council approval and implementation.

ADOPTED THIS 14th DAY OF OCTOBER, 2013.

Shelley Welsch

Shelley Welsch, Mayor

ATTEST:

Joyce Pumm

Joyce Pumm, City Clerk

PARKVIEW
HISTORIC NEIGHBORHOOD
Est. 1905

September 24, 2013

Richard Wilson, Director of Public Works and Parks
6801 Delmar
University City, MO 63130
Re: University City Bicycle & Pedestrian Plan

Dear Mr. Wilson:

We are writing on behalf of the property owners/residents and Agents of the Parkview Neighborhood regarding the proposed University City Draft Bicycle and Pedestrian Plan ("Plan"). Our neighborhood has many avid cyclists and we support the idea of a bicycle plan for University City in general, however we have significant concerns about the current Plan. These concerns in no way alter the goal of every UCity resident being within a five minute walk of a bike path as we all reside within that distance to the newly constructed path on Melville.

The current Draft of The Plan includes the designation of Waterman Boulevard in Parkview as a Bike/Walk Street. Bike/Walk Streets are described in the plan as: "Also known as 'bicycle boulevards', these are shared-use streets that give preference to bikes over vehicular traffic. They are indicated with markings, signage, and optional traffic calming devices."

As you are aware, Parkview is a Private Subdivision and a National Historic Neighborhood. The legal ownership and use of the streets in Parkview is rather complex. Each homeowner's property extends to the middle of the street on which their home is situated. Every owner/resident of the neighborhood has an easement granted in their favor for the use and enjoyment of the streets, sidewalks and alleys by each property owner.

The Board of Agents of Parkview is an elected group of neighbors with powers limited by the 1905 Indenture that runs with the land. The Agents do not have the authority to grant permission for the use of any street, sidewalk or alley of Parkview as a Bike/Walk Street. This permission could only be granted by the residents of Parkview by a vote of the entire neighborhood with 2/3 majority voting in favor of such designation.

P.O. Box 300518, St. Louis, Missouri 63130

The potential designation of Waterman, or any other street in Parkview as a Bike/Walk Street raises significant issues. The first major issue is liability. While The Plan calls for University City to take over maintenance and liability of the bike/walk path, they cannot take ownership of a private street and thus the residents of Waterman, the Neighborhood and the Parkview Agents remain potentially liable for any injury to persons or property.

The second issue is the congestion on Waterman. Of all the five streets, Waterman is the most travelled. Due to the lack of driveways, street parking is essential. This is one reason we do not plow our streets. University City would be required to plow Waterman creating more difficulty for the residents. The presence of so many cars parked on Waterman normally limits two-way traffic. Westbound cars must pull to the side for eastbound and vice versa. Adding a flow of bikes to this would not be safe.

Further, the stretch of Waterman suggested flows from University City to the City of St. Louis. This creates a number of maintenance issues for the Neighborhood. A detailed maintenance agreement would need to be presented to the residents. If University City opted to maintain both the 6200 and 6300 blocks of the Path, that again creates issues for the remainder of our streets.

It is possible that an alternate route through Parkview might reduce the congestion issue, but the path/street maintenance and liability issues remain concerns.

Since the announcement of the Bicycle/Pedestrian Plan, we have been contacted by residents of Waterman and Westgate with concerns about traffic flow, restricted access, liability, safety, quiet enjoyment and property values.

Based on these concerns and your assurances at the August 27th meeting that no private street will be included in the Plan without their consent, we request that no streets in Parkview be designated as, considered for designation as, or be shown as such on any future Plan or Draft Plan, without the legally appropriate consent of the property owners/residents of Parkview.

Thank you for your anticipated consideration and cooperation in this matter.

Sincerely,

Mary Broun, President Parkview Agents
mbbroun@sbcglobal.net

Lee Lawless, Vice-President Parkview Agents

Cc: University City Plan Commission
Stephen Kraft, City Council First Ward
Terry Crow, City Council First Ward
Ann Rivers Mack, Trailnet

City of University City

Public Works and Parks
6801 Delmar Boulevard, University City, Missouri 63130, Phone: (314) 505-8560, Fax: (314) 862-0694

October 7, 2013

Ms. Mary Broun, President Parkview Agents
Lee Lawless, Vice President Parkview Agents
PO Box 300518
St. Louis, MO 63130

Dear Ms. Broun and Mr. Lawless;

I have received your letter dated September 24, 2013 requesting Parkview Neighborhood to be removed from the University City Walk and Bike Plan.

We will include your letter in the final draft of the report as well as remove your section of the bike path from the plan. To spend City funds wisely, we will not make any changes to the map until all subdivisions have had a chance to weigh-in. And as we move forward with the new Comprehensive City wide plan, there may be more changes to come.

If at some time in the future, you would like to sit down and discuss the various issues you brought up, we would be glad to set aside some time. If you have any questions, please let me know.

Sincerely,

Richard L. Wilson PE
Director

CC: Mr. Lehman Walker
Mr. Stephen Kraft
Mr. Terry Crow
Ms. Lynnette Hicks
Ms. Ann Rivers Mack

APPENDIX
Case Studies

BICYCLE PLAN 2030
Portland, Oregon

CASE STUDY OVERVIEW

OBJECTIVES
- Equity Analysis: Residents within ¼ mile of a bikeway
- Bicycle Network: ~400 miles of developed bicycle trails and boulevards
- Support local economy

DESIGN ELEMENT
- **Bicycle Boulevards**

OUTCOMES
- More than 50% of residents within ¼ mile of a bikeway after build-out
- Nearly 300 miles of bike network developed
- 2007: Bicycle network contributed $90 million to local economy and employed 1,150 people

IMPLEMENTATION TOOLS

JARC Program (Federal Program)
- "Job Access and Reverse Commute"
- Portland's "Create a Commuter"
  - Bicycle availability
  - Bicycle infrastructure
  - 10% of funds used for planning
- Eligible Recipients: states and public bodies, private non-profit organizations, and local governments.

CMAQ (Federal Program)
- **"**Congestion Mitigation /Air Quality" Improvement Program
- Funds bicycle/pedestrian paths and facilities to reduce motor vehicle dependence

CITY OF UNIVERSITY CITY FEASIBILITY

JARC Program (Federal/State)
- Match funding from U.S. Department of Labor Workforce Investment Act
- Creates opportunities for residents to safely get to work
- Example: Southeastern Missouri's "Missouri Goes to Work" program
- Use funds to connect eligible areas to MetroBus & MetroLink

MFH (State)
- "Missouri Foundation for Health"
- ***Example: PedNet Coalition recipient of a $300,000 grant to construct accessible bicycle paths that connect to regional ADA-accessible trails and improve existing conditions***

BICYCLE TRANSPORTATION PLAN 2000

Madison, Wisconsin

CASE STUDY OVERVIEW

OBJECTIVES

- Increase bicycle storage and parking
- The "5 E's"
  - *Education*
  - *Encouragement*
  - *Enforcement*
  - *Engineering*
  - *Education*
  -
- Bicycle-friendly development and street design

DESIGN ELEMENT

- **Bicycle parking/storage facilities**

OUTCOMES

- Bicycle parking and storage for both trip origin and destination points now included in Transportation Master Plans (TMPs)
- Comprehensive design criteria successfully implemented
- 7.6% increase in new bicycle commuters
- Decrease in annual bike crashes

IMPLEMENTATION TOOLS

WisDOT SMIP (State)

- "Statewide Multi-Modal Improvement Program"
- Funds allocated to bicycle and pedestrian paths and maintenance

STP (Federal)

- "Surface Transportation Program"
- Used for:
- bicycle/pedestrian facilities
- planning
- education programs

CITY OF UNIVERSITY CITY FEASIBILITY

MO STIP (State)

- "Missouri Statewide Transportation Improvement Program"
- Funding for non-motorized transportation

MARC STP (State)

- "Mid-America Regional Council's Surface Transportation Program"
- ***Example: Vivion Road Enhancement (U.S. 69), Riverside, MO: Connecting residential areas to nearby parks***
- Includes bicycle and pedestrian paths and wide medians

APPENDIX
Case Studies

TRANSPORTATION MASTER PLAN

Boulder, Colorado

CASE STUDY OVERVIEW

OBJECTIVES
- Complete Streets implementation
- Safe Routes to School initiative
- Inviting and safe urban design

DESIGN ELEMENTS
- **Complete Street design**

OUTCOMES
- 23% of commuters bicycle to work
- 32 miles of new sidewalks
- SOV decrease 19.2%
- 12 public and 4 private schools participate in Safe Routes To School (SRTS)
  - Award for involving 70% of students in biking and walking activities

IMPLEMENTATION TOOLS

CDOT (State)
- "Colorado Department of Transportation"

SAFETEA-LU (Federal)
- "Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users"

CITY OF UNIVERSITY CITY FEASIBILITY

MAP-21 (Federal)
- "Moving Ahead for Progress in the 21st Century"
- Replaces former SAFETEA-LU funding programs

TAP (Federal)
- "Transportation Alternatives Program"
- The TAP replaces the funding from pre-MAP-21 programs including Transportation Enhancements, Recreational Trails, Safe Routes to School, and several other discretionary programs, wrapping them into a single funding source.
- An amount equal to 2% of the total amount authorized from the Highway Account of the Highway Trust Fund for Federal-aid highways each fiscal year (FY) is to be reserved for the TAP.

MoDOT (State)
- Contribute funds to Complete Streets

MFH (State)
- Missouri Foundation for Health
- ***Example: Jefferson County Health Department awarded $159,661 to fund Complete Streets***

Grants (National)
- ***Example: Active Living by Design developed "Walking School Buses" in Columbia, MO***

APPENDIX

Programming Opportunities

Creating a bicycle and pedestrian-friendly community requires a holistic approach, of which physical improvements are just one component. Education, encouragement, and enforcement programs play a vital role in changing the way people move about their community. In addition to developing programs and activities through the Public Works and Parks Department, the Community Development Department, which houses the Recreation Department, responsible for all recreation programs, the City should reach out to develop partnerships with agencies, organizations, institutions, and associations already present in the community. This section of the plan details current activities underway in University City to support healthy and active lifestyles and safer environments for walking and biking; summarizes community input regarding programming opportunities for education, encouragement, and enforcement; and provides potential programs for University City to pursue.

CURRENT PROGRAMS AND ACTIVITIES

The City of University City has for years offered a variety of recreational programs and facilities to provide residents with opportunities for healthy and active living. With 17 parks, 15 ball diamonds, 10 soccer and football fields, 15 play equipment areas, the Heman Park Swimming Pool, the Community Center, and the Centennial Commons Recreational Facility, University City provides an abundance of recreational facilities for residents and visitors. The variety of recreational facilities allows the City to provide a diverse range of programs and activities, including youth summer recreation programs, teen activities programs, personal and group training sessions, senior fitness classes, and many more. With the development of an on-street bicycle facility network and improvements to the pedestrian environment, the City can expand its health and fitness-related offerings through programs designed to encourage residents to choose active transportation—walking, cycling, and public transit—to reach destinations in and around the community.

COMMUNITY INPUT

Throughout the planning process, community members shared their thoughts regarding programs that support, walking, bicycling, and active living through the online plan survey. A number of questions in the survey related to potential education, encouragement, and enforcement programs. While individual responses varied considerably,

APPENDIX

Programming Opportunities

Potential Education, Encouragement and Enforcement Programs	
Program	**Average Score (5 = highest score; 1 = lowest)**
Programs that encourage children to walk and bike to school.	4.05
Greater police enforcement of motor vehicle, bicycle and pedestrian laws.	3.71
Education programs that teach residents and businesses the benefits of walking and bicycling.	3.29
Education programs that teach children basic cycling skills.	3.77
Education programs that teach adults basic road cycling skills.	3.40
Programs that encourage residents to walk and/or bike to local businesses.	3.89
Programs to improve motorist awareness of cyclists, pedestrians and other road users.	4.24

there were a number of programs and ideas that received significant positive support. The table above represents average scores various programming opportunities and their potential effectiveness in the community. Motorist awareness campaigns, Safe Routes to School programs, programs to encourage residents to walk and bike to local businesses, and bicycle education courses for children were the program opportunities that received the greatest positive feedback from survey respondents.

POTENTIAL PROGRAMS

Building on the feedback received in the online community survey and gathered at the public workshops, this section of the plan introduces education, encouragement, and enforcement programming opportunities that can have a significant impact on residents', visitors', and area employee's transportation choices.

PEDESTRIAN & BICYCLIST AWARENESS PROGRAMS/CAMPAIGNS: One of the most challenging barriers to walking and cycling is the potential conflict between automobiles and other road users. High vehicle speeds, heavy traffic volumes, and a perceived lack of respect and consideration for pedestrians and cyclists prevent many residents from walking and cycling to local destinations. The City should consider developing pedestrian and bicyclist awareness campaigns in partnership with local, regional and state entities. Awareness campaigns may

Programming Opportunities

INFORMATIONAL DOOR HANGERS

consist of the distribution of educational brochures and pamphlets, the development of print, online, and television media, targeted enforcement of motor vehicle regulations in and around areas of high pedestrian and cyclist activity, and other targeted activities to calm traffic and improve cooperative and courteous behavior among all road users. Potential partners may include the following: St. Louis County Highways and Traffic and the Missouri Department of Transportation, who own and maintain arterial and collector roadways within the City Limits; University City School District; private schools; Loop Special Business District; Olive Business District; neighborhood associations; and other individual businesses and institutions.

NEIGHBORHOOD PACE CAR PROGRAM: A growing number of cities across the country have taken a unique approach to traffic calming: the neighborhood pace car program. Through this program, residents that have pledged to act as pace cars drive slowly and safely, give way to pedestrians and cyclists, and set a standard of respect and behavior for other automobile drivers to follow. Neighborhood pace car programs, most often administered by the local government agency, consist primarily of informational brochures, a dedicated webpage to provide information and updates, and bumper stickers to be adorned by participating pace cars. Links to sample neighborhood pace car programs are provided at the end of this section of the plan.

PROJECT OUTREACH: As new bicycle facilities are constructed, it is important to reach out to adjacent residents, business owners, and other important stakeholders to impart the benefits of active transportation infrastructure, to provide educational material, and to encourage facility usage. Shared lane markings, dedicated bicycle lanes, and other bicycle facility elements will bring changes to the transportation network that few have seen or experienced. Outreach efforts will be an integral component of any new bike facility project and can positively influence the community's perception and usage of these new facilities. The City should consider the use of pamphlets, direct mailings, and door hangers to provide information about new projects and encourage residents to walk and bike for local trips.

SAFE ROUTES TO SCHOOL PROGRAMS: In 1969, 42 percent of all students from grades 1 through 12 walked

APPENDIX
Programming Opportunities

or biked to school, and 49 percent of elementary school students walked or biked.[1] By 2001, less than 15 percent of all trips to school were made on foot or bike, with more than half of students arriving by private automobile (up from 16 percent in 1969).[2] In an effort to reverse this trend, the Federal Highway Administration initiated the Safe Routes to School Program (SR2S) in 2005. The objective of SR2S is twofold, focusing on infrastructure improvements in school areas and on behavioral programs to increase the number of children walking and biking to school.

Local schools and school districts throughout the St. Louis Metropolitan Area have incorporated Safe Routes To Schools Programs in an effort to promote physical activity for school children. Walking School Busses, Bike Trains, Bike Safety Rodeos, and other events are designed to encourage children (and their parents) to walk and bike to school rather than driving. Some schools have even designated drop-off locations for children who live too far from school to walk to join other walkers on their way to school. In University City, the only school currently involved in any formal Safe Routes To School Program is Christ the King Catholic Elementary School on Balson Avenue. After taking part in two International Walk To School Day events, dedicated parents and school staff created Walking Wednesdays to encourage children and families to walk to school. Students who live too far to walk can join a large group of Christ the King families that meet at Jackson Park on Wednesdays mornings to walk to school. Students can also walk during recess and receive a stamp for their "Walkin' Wednesday" card.

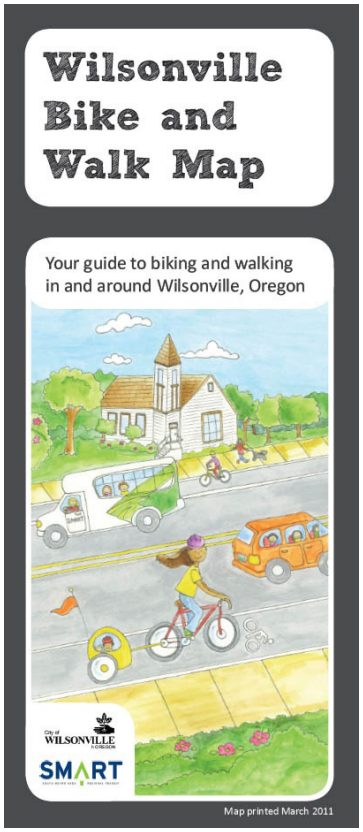
While many children in University City already walk and, to a lesser extent, bike to school without any formal education or encouragement program, the impact of such a program could have a substantial impact on school children's health and physical fitness, on motor vehicle congestion, and on carbon emissions. The City of University City should engage the University City School District and local private schools to explore opportunities to increase children walking and cycling to school.

Trailnet, a local non-profit working to foster healthy and active communities throughout the St Louis Metropolitan Area through planning, policy, and programs that promote walking and bicycling, has partnered with communities and school districts in St. Louis County to develop Safe Routes to School programs. Through parent and school

SAFE ROUTES TO SCHOOL EVENT

[1] "Transportation Characteristics of School Children," Report No. 4, Nationwide Personal Transportation Study, Federal Highway Administration, Washington, DC, July, 1972.
[2] Federal Highway Administration, National Household Travel Survey, 2001.

Programming Opportunities



district trainings, Walk To School Day events, Walking School Busses, Bike Trains, and other events, Trailnet has helped over a dozen schools establish, grow and sustain Safe Routes to School programs that have made a lasting impact on local school travel patterns and children's health.

COMMUNITY-WIDE BICYCLE AND PEDESTRIAN MAP: Cyclists' and pedestrians' travel patterns differ from motorists' and are influenced by a variety of factors, including perceived safety, comfort, efficiency, familiarity, and aesthetics. Many would-be cyclists and pedestrians are intimidated by a lack of knowledge of the best routes for walking and cycling to local destination. A map for cyclists and pedestrians can familiarize residents and visitors alike with the preferred routes to destinations throughout the community and encourage walking and cycling as viable transportation options. A community-wide map can have many benefits beyond simply encouraging cycling and walking activity. It can also help to highlight public and private destinations in and around the community, encourage patronage of local businesses, direct residents and visitors to newly developed bicycle and pedestrian infrastructure, and integrate other programming content and information, like bicycle safety tips, for electronic and print distribution.

SHOP BY BIKE/FOOT PROGRAM: Shop by Bike and Shop by Foot programs encourage residents to walk and/or bike to local businesses for short daily trips. Forty percent of all travel trips in the United States are two miles or less, a distance that can be comfortably covered on foot or bicycle; yet 74 percent of these trips are made by automobile.[3] Shop by bike and shop by foot programs can help to reduce automobile congestion, lower carbon emissions, improve individual health, and support local businesses. University City should explore opportunities to create such a program with area businesses, the Loop Special Business District, and the Olive Business District. Similar programs across the United States often include an incentive program that rewards customers arriving on bike and foot with discounts, small gifts, and similar benefits.

BICYCLE-FRIENDLY BUSINESSES PROGRAM: Creating a bicycle-friendly community is not limited to actions of local government, residents and advocacy groups. Local businesses can take a number of steps to cater to and improve access for cyclists; however, most businesses are unaware of the resources available to increase

[3] Federal Highway Administration, National Household Travel Survey, 2001.

APPENDIX
Programming Opportunities

conditions for cyclists. A Bicycle Friendly Businesses Program generally functions in two important ways. First and foremost, by providing the resources, information, best practices, and, in some cases, incentives, to help local businesses create an environment that supports cycling. This can be done by providing safe and secure bicycle parking for customers and employees, developing incentive programs to encourage employees to bike to work, and distributing commuter education materials to employees. By improving conditions in and around their businesses and incentivizing bicycle ridership, local businesses are not just creating opportunities for a greater diversity of customers, but also increasing cycling throughout the community, contributing to the community's desire to weave walking and cycling into the fabric of the community.

In the St. Louis Region, Trailnet works with businesses and community groups though the TravelGreen Program to encourage commuter cycling and help local businesses develop policies, environments, and social networks that embrace alternative transportation. This growing program incorporates Bike To Work Day events, Breakfast for Bikers events, and the Shift Your Commute website (*www.shiftyourcommute.com*) to support businesses and employees as they seek to incorporate bicycle commuting into their daily routines.

SENIOR BIKING AND WALKING PROGRAMS: In 2009, an estimated 16 percent of the City's population (5,679 of 36,577) was 65 years or older.[4] Walking and biking programs can help this segment of the population maintain healthy and active lifestyles and retain their transportation independence. Whether through weekly group walks, organized bicycle rides, placing walking and bicycling maps at senior centers, or targeted infrastructure improvements, these programs can have a lasting impact on the health and quality of life of the community's senior population.

YOUTH AND ADULT BICYCLE EDUCATION: Many University City residents have stated their desire to incorporate cycling into their daily routines, but cite high traffic volumes and traffic speeds on busier arterial roads as significant deterrents to cycling throughout University City. Training courses can provide both youth and adult bicycle riders with the basic knowledge, skills and confidence necessary to safely and successfully navigate the variety of roadway conditions present throughout the City. There are currently a number of different bicycle shops

TRAILNET BIKE SMART CLASS

[4] U.S. Census Bureau: 2005-2009 American Community Survey. Retrieved November 1, 2011, from http://factfinder.census.gov.

CREATE-A-COMMUTER BIKE PROGRAM

and local organizations that teach on-road cycling classes, including the Alpine Shop, REI, and Trailnet. The City should seek to partner with a local bicycle shop or an organization like Trailnet, whose new BikeSmart classes prepare area residents with the skills and confidence to bike in a variety of situations.

Another approach to youth cycling instructions is to incorporate basic cycling skills as part of the physical education curriculum in local schools. Although there is no single authoritative guide or curriculum for bicycle education (or youth pedestrian education, for that matter) there are a number of outstanding models and resources to help local communities prepare children of various ages to become safe and responsible cyclists. The Safe Routes To School National Partnership has developed a comprehensive report on the subject, detailing federal efforts, the European model for youth bicycle education, existing programs and curricula, and other important considerations. Another useful resources for both adult and youth bike education is the Bicycle Safety Education Resource Center, developed by the Federal Highway Administration and maintained online by the Pedestrian and Bicycle Information Center. The Bicycle Safety Education Resource Center is an online repository of information that includes the Federal Highway Administration's National Bicycle Safety Education Curriculum Project, the Good Practices Guide For Bicycle Safety Education, and the Resource Database, which guides users to targeted information based on target audience and topic.

LAW ENFORCEMENT TRAINING: Law enforcement can play a significant role in creating safe public spaces for all road users through warnings, ticketing, and increasing public awareness of the rights and responsibilities for motorists, cyclists, and pedestrians. The City should seek additional training for law enforcement officers relating to cyclist, pedestrian, and motorist interactions and proper usage of the public rights-of-way.

"CREATE A COMMUTER" BIKE PROGRAM FOR ADULTS: Many residents of University City rely on walking, cycling and public transportation to access employment, shopping, and other basic necessities on a daily basis. 2000 US Decennial Census data shows that over 11% of households in University City (and nearly 19% of renter-occupied households).[5] In addition, nearly 10% of the work force 16 years or older used public transportation, biked, walked to get to work, even when some had a private vehicle available.[6] For some, it is a choice. For others,

[5] U.S. Census Bureau: 2000 Decennial Census, Summary File 3. Retrieved April 27, 2011, from http://factfinder.census.gov.

APPENDIX
Programming Opportunities

it is a necessity. To ensure that all residents of University City have access to employment opportunities, the City should consider establishing a create-a-commuter program to provide low-income residents with bicycle maintenance and on-road skills training, as well as a fully equipped commuter bicycle. Such a program would ensure that low-income residents have a reliable means of transportation to retain and/or find employment. Similar programs have been established in Portland, with funding provided in part by the Federal Highway Administration's Job Access Reverse Commute Program, which focuses on improving job-related transportation for low-income members of the community.

The programs described above are just a starting point for University City. As the City continues improve access to and opportunities for active living throughout the community, other opportunities may arise to incorporate walking and bicycling into the community's social fabric. There are a number of resources available that describe successful programs undertaken by local government agencies and non-profits in North America.

LINKS TO ADDITIONAL INFORMATION AND RESOURCES

GENERAL RESOURCES

Pedestrian and Bicycle Information Center (PBIC)
http://www.pedbikeinfo.org/
PBIC's Case Study Compendium
http://www.walkinginfo.org/case_studies/
Federal Highway Administration's Bicycle and Pedestrian Program
http://www.fhwa.dot.gov/environment/bikeped/
Federal Highway Administration's Safety Program
http://safety.fhwa.dot.gov/
Trailnet, Inc.
http://trailnet.org/
Missouri Bicycle and Pedestrian Federation

[6] U.S. Census Bureau: 2000 Decennial Census, Summary File 3. Retrieved April 27, 2011, from http://factfinder.census.gov.

http://www.mobikefed.org
Missouri Department of Transportation's Bicycle and Pedestrian Program
http://www.modot.mo.gov/othertransportation/bicyclepedestriangeneralinformation.htm
America Walks
http://americawalks.org/

NEIGHBORHOOD PACE CAR PROGRAM
Washington, D.C.
http://www.waba.org/education/about_pace_car.php
Springfield, MO
http://www.springfieldmo.gov/traffic/pacecar.html
Davis, CA
http://cityofdavis.org/police/pacecar/

SAFE ROUTES TO SCHOOL
National Center for Safe Routes to School
http://www.saferoutesinfo.org/
Safe Routes to School National Partnership
http://www.saferoutespartnership.org/
PBIC's Safe Routes to School Guide
http://guide.saferoutesinfo.org/
FHWA Safety Program – Safe Routes to School
http://safety.fhwa.dot.gov/saferoutes/

SENIOR BIKING AND WALKING PROGRAM
New York, NY
http://www.transalt.org/campaigns/pedestrian/safeseniors
Portland, OR

APPENDIX
Programming Opportunities

http://www.portlandonline.com/TRANSPORTATION/index.cfm?c=eafeg
http://www.streetfilms.org/archives/portland-or-older-adults-bike-program/ (video)

YOUTH AND ADULT BICYCLE EDUCATION

Bicycle Safety Education Resource Center
http://www.bicyclinginfo.org/education/resource/fhwa.html
Trailnet's Bike Smart Program
http://www.trailnet.org/our-work/travelgreen
PBIC's SRTS Guide – Bike Education Section
http://guide.saferoutesinfo.org/education/resources.cfm
League of American Bicyclists
http://www.bikeleague.org/programs/education/index.php
Safe Routes to School National Partnership's Bicycle and Pedestrian Curricula Guide: Making the Case for Bicycle and Pedestrian Youth Education
http://www.saferoutespartnership.org/publications/CurriculaGuide

CREATE A COMMUTER BIKE PROGRAM FOR ADULTS

Oakland, CA
http://www.cyclesofchange.org/programs/bike-go-round
Portland, OR:
http://www.communitycyclingcenter.org/index.php/programs-for-adults/create-a-commuter/

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City of
University
City

trailnet
BIKE WALK LIVE

H3

UNIVERSITY CITY HIGH SCHOOL

Executive Summary

University City has a rich history that is reflected in its current assets and amenities; its location as an inner-ring suburb and its interconnected street grid presents unique opportunities for enhancing walking and biking for transportation, recreation, and fitness. In an effort to move University City towards being one of the most sustainable cities in the St. Louis Metropolitan region, the Bicycle and Pedestrian Plan builds upon University City's outstanding historic character and seeks to provides viable transportation options for all residents.

The Bicycle and Pedestrian Plan is a partnership between The City of University City and Trailnet, a non-profit organization working throughout the St. Louis area. The Bicycle and Pedestrian Plan is funded through a grant from the Missouri Department of Transportation and supports the goals of the *Mayor's Task Force on Bike and Walk-ability* by providing recommendations and design options to promote *equity in mobility* for all University City residents, regardless of their age, income, or ability. The planning process took place over the course of 14 months and included regular meetings with the *Mayor's Task Force on Bike and Walk-ability*, Steering Committee, Stakeholder Interviews, two Public Workshops, and special workshops with City staff, Commissioners, and elected officials.

VISION & GOALS

University City possesses remarkable physical connectivity, access to transit, and regionally-significant location and amenities. The Plan aims to make University City the St. Louis region's premier walk-able and bike-able city by creating a community with universal accessibility and transportation alternatives that enable residents, no matter their age or ability, to walk and bike to their destinations—school, work, shopping, recreation, and play. The Plan intends to achieve this vision by fulfilling the following Goals:

- **Create an "equity of mobility" within University City by providing universally-accessible transportation alternatives**;
- **Support and increase ongoing investment in and revitalization of University City;**
- **Encourage walking and cycling as legitimate modes of transportation and promote public health and healthy and active lifestyles.**

ELEMENTS OF THE PLAN

The Bicycle and Pedestrian Plan outlines capital improvement projects, policy and operational initiatives, cost opinions, available funding sources, and implementation priorities. Elements include:

BICYCLE AND PEDESTRIAN FACILITY NETWORK: The *Facility Network* consists of four facility types designed to accommodate existing street dimensions while ensuring that all University City residents are within one quarter mile (five-minute walk) or less of a bicycle and pedestrian route. Facility types include Bike/Walk Streets; Sharrows; Bike Lanes; and Bike Routes. All bike and pedestrian routes include streetscape enhancements to improve pedestrian comfort and safety by delineating pedestrian zones, providing shade and nighttime lighting, and beautification.

IMPLEMENTATION GUIDE: The *Implementation Guide* is the "how-to" of the Bicycle and Pedestrian Plan. It is structured to support and facilitate existing and ongoing initiatives and prioritize capital improvement projects with a high value-to-cost ratio in order to build momentum for the implementation of the Plan. Projects that the community intends to complete or consider in order to implement the Bicycle and Pedestrian Plan are categorized by timeframes of 1-5 Years; 5-15 Years; and 10-20 Years.

POLICIES, OPERATIONS & MAINTENANCE: In addition to capital improvement projects, the Plan includes several policy, operations, and maintenance recommendations. These recommendations are designed to enhance safety, awareness, and usership of new and improved bike and pedestrian facilities and evaluate the success of implementation initiatives over time.

OPINION OF PROBABLE COST: An *Opinion of Probable Cost* has been assembled to assist University City in developing capital improvements programming, departmental budgeting, grant writing, and fund-raising. It is based on the *Gateway Bike Plan* and similar projects in the St. Louis Region.

FUNDING SOURCES: Creative *Funding Sources* are necessary for the development of a bicycle- and pedestrian-friendly community and University City should seek to draw from the diverse range of federal, local, and private-sector funding programs available to fund both infrastructure improvements and programs. Local funds should be leveraged as match for external funding in order to maximize the City's investment.

THE DELMAR LOOP

GROBY ROAD SOUTH OF OLIVE

JACKSON AVENUE NEAR MOONEY PARK

Introduction

The City of University City has a rich history that is reflected in its current assets and amenities. University City has many pedestrian-friendly, historic neighborhoods with tree-lined streets; accessible business areas; and neighborhood schools and parks. The Delmar Loop—the premier shopping and entertainment district in the St. Louis region—is the City's most recognizable asset. University City's location as an inner-ring suburb and its interconnected street grid presents unique opportunities for enhancing walking and biking for transportation, recreation, and fitness. At the same time, the City's aging infrastructure presents challenges to achieving this goal.

In an effort to move University City towards being one of the most sustainable cities in the St. Louis Metropolitan region and to make the streets safer for bicyclists and pedestrians, a *Mayor's Task Force on Bike and Walk-ability* was established in October 2010. This task force is charged with reviewing best practices locally, nationally, and internationally to determine how to make University City's streets safe for walking and biking, and discovering how to move forward on making University City a "complete streets" community. The Bicycle and Pedestrian Plan builds upon University City's outstanding historic character and the mandate of the Bike Walk Task Force. The Plan focuses on improving existing pedestrian- and bicycle-oriented neighborhoods and commercial districts, supporting the creation of new walk-able and bike-able infrastructure, and connecting to amenities in University City and neighboring communities. Through the integration of programming, policy, and planning, the Bicycle and Pedestrian Plan provides viable transportation options for all residents.

The Bicycle and Pedestrian Plan is a partnership between The City of University City and Trailnet, a non-profit organization working throughout the St. Louis Metropolitan Area to foster healthy and active communities through innovative programs, planning, and policies that promote walking and bicycling. The Bicycle and Pedestrian Plan is funded through a grant from the Missouri Department of Transportation (MoDOT) *Surface Transportation Program (STP)* for the development of Walk-able Bike-able Communities (Phase 3.) The Plan supports the goals of the *Mayor's Task Force on Bike and Walk-ability* by providing recommendations and design options to promote *equity in mobility* for all University City residents, regardless of their age, income, or ability.

Planning Process

The Planning Process for the Bicycle and Pedestrian Plan is divided into a Pre-Planning stage and four Phases covering each of the project tasks and work products. These Phases are: **Phase A: Analysis of Existing Data & Conditions; Phase B: Plan Goals, Vision & Objectives; Phase C: Bicycle & Pedestrian Plan (including Design Options)**; and **Phase D: Implementation & Funding Strategy**. This process took place over the course of 14 months and included regular meetings with the *Mayor's Task Force on Bike and Walk-ability*, Bicycle and Pedestrian Plan Steering Committee, Stakeholder Interviews, two Public Workshops, and special workshops with City staff, Commissioners, and elected officials.

BICYCLE & PEDESTRIAN PLAN STEERING COMMITTEE

The Steering Committee consisted of the *Mayor's Task Force on Bike and Walk-ability* as well as representatives from Great Rivers Greenway, Saint Louis County Highways and Traffic, MoDOT, University City School District, and University City staff. The Steering Committee served as a representative, decision-making body to guide the planning process, lead public outreach efforts and spread the word about the Plan, and provided feedback and critique on the various phases of the Plan. The Steering Committee met four times throughout the process, at the conclusion of each project phase.

STAKEHOLDER FOCUS GROUPS

The City of University City and the Steering Committee identified 26 Stakeholders to be interviewed as part of the Planning Process. Stakeholders included University City residents, business and property owners, merchants, institutions, and other interested parties. The Stakeholders were interviewed over the course of two days in small focus groups. These *Stakeholder Focus Groups,* along with a professional analysis of bike-able and walk-able conditions in University City, resulted in a list of *Consensus Issues* that were developed and revised through a process of public review and feedback.

CANTON AVENUE

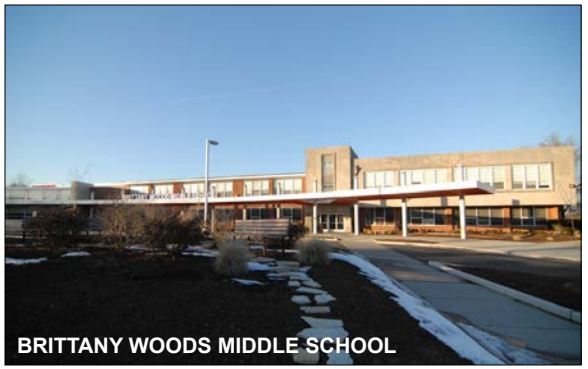
KINGSLAND BOULEVARD

Existing Conditions

University City is located in the heart of the St. Louis Metro area. The 5.9 square-mile City sits between Interstate 170 and the City of St. Louis city limits and is intersected by major regional arterial corridors. Additionally, the City is served by the Metrolink light rail transit system and Metrobus lines, making University City one of the most well-connected communities in the Metro region.

University City has shown an excellent capacity to plan for its future in an environmentally-, socially-, and economically-sustainable way. Public space and planning initiatives including streetscape improvements to the Delmar Loop; Chuck Berry Plaza; Great Rivers Greenway (GRG) Centennial Greenway (incorporated in this Plan but designed and implemented by GRG); the ongoing Parkview Gardens Neighborhood Sustainable Development Plan (with which this Plan has been closely coordinated); cross-jurisdictional development planning for the I-170/Olive Boulevard interchange with Olivette; and pending adoption of a City-wide *Complete Streets* Ordinance (see page 38) all demonstrate University City's commitment to the creation of great places rooted in University City's history. These efforts have been augmented by continued private investment throughout University City, evidenced by the ongoing stability of University City's residential and retail markets. The Bicycle and Pedestrian Plan is intended to unify the City's planning efforts under the vision of a bike-able and walk-able community, supported by vibrant commercial districts, great streets, and public spaces.

MONA TERRACE BIKE PATH


BRITTANY WOODS MIDDLE SCHOOL

ISSUES & CHALLENGES

University City faces a number of challenges to improving biking and walking conditions. University City is divided by a number of arterial roads including Big Bend Boulevard, Delmar Boulevard, Hanley Road, McKnight Road, Midland Boulevard, North and South Avenue, Olive Boulevard, Vernon Avenue, and Woodson Road. These arterial roads are under the jurisdiction of St. Louis County Highways and Traffic and MoDOT. Historically, these streets were developed as major regional arteries. With the construction of I-64 and I-170, traffic volumes on several of these arteries has declined and some have excess capacity for vehicular traffic. As a result, traffic speeds often exceed posted limits and these streets are percieved as dangerous to pedestrians and cyclists. It will be essential for University City to coordinate future improvements on these streets with St. Louis County and MoDOT and advocate for improvements to benefits all types of users.

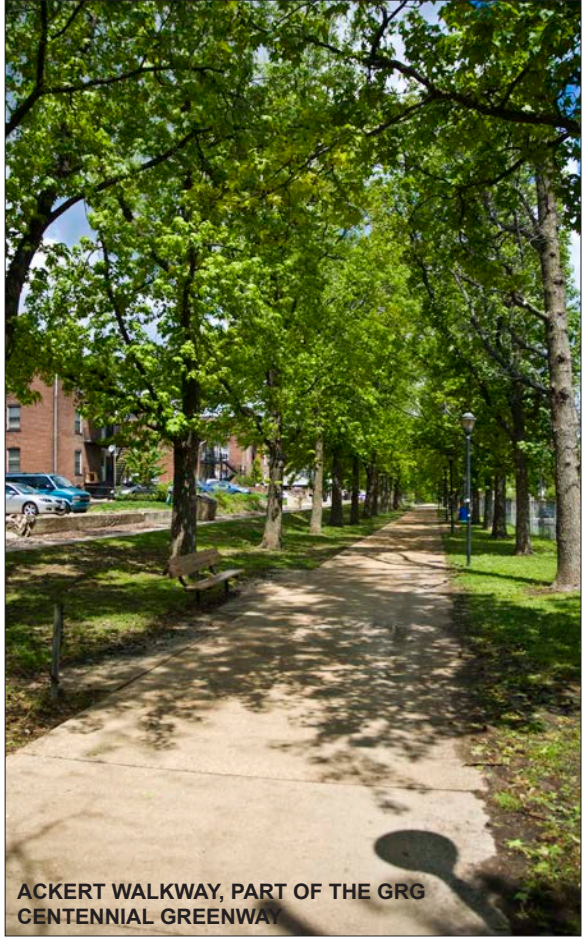
NON-CONTINUOUS CROSSING POINTS AT VANDERBILT AVENUE AND AMHERST AVENUE

There are a number of traffic signals and crossing points throughout the city that are perceived as unsafe or do not provide high levels of service to cyclists and pedestrians. These include a lack of manual- or automatic activation for bikes (Jackson Avenue at Delmar Boulevard), lack of pedestrian-only crossing modes at intersections with limited visibility (Big Bend Boulevard at Delmar Boulevard), and pedestrian crossings of arterial roads without electric signals (Delmar Boulevard at Trinity Avenue; Olive Boulevard at Heman Park.) Finally, many existing sidewalks are not accessible, lacking curb cuts or designated crossing points at intersections, and a number of neighborhoods in areas west of North & South Avenue have no sidewalks or curbs, or sidewalks on one side of the street only. The comprehensive list of *Consensus Issues* and an illustrative map are presented on the following page.

ASSETS & OPPORTUNITIES

University City's gridded streets provide excellent connectivity within and between neighborhoods, with numerous pedestrian and bicycle alternative routes to major streets. In addition, University City's seventeen parks, fourteen primary and secondary schools, and numerous regional and neighborhood commercial districts are well-distributed throughout this city; over fifty-percent of University City residents live within a five-minute walk (one-quarter mile) of a park, school, and commercial district, and nearly all residents live within a five-minute bike ride (one mile). University City is also exceptionally well-served by regional transportation. There are six Metrolink stations in and around University City, and all regional arterials host Metrobus lines. The planned *Centennial Greenway* also bisects the City in its route from Forest Park to Creve Coeur Lake, placing University City at the doorstep of the "River Ring" greenway network. Nearly all of University City residents are within a five-minute walk (one-quarter mile) of a Metrobus stop, over thirty-percent are within a ten-minute walk (one-half mile) and nearly all residents are within a ten-minute bike ride (two miles) of Metrolink and the *Centennial Greenway*.

University City's existing connectivity and access to regional transit and amenities provides a remarkable framework for increasing walk and bike-ability. This puts University City in the unique position to deliver true transportation equity to its residents, making walking, biking, or utilizing transit for daily trips as easy as driving. Following through with this opportunity can help make University City the first walk-able, bike-able, and truly car-optional community in the St. Louis region.



ACKERT WALKWAY, PART OF THE GRG CENTENNIAL GREENWAY

Bicycle & Pedestrian Facility Network

The Bicycle and Pedestrian Plan's *Facility Network* consists of four primary facility types designed to accommodate existing street dimensions and ensuring that all University City residents are within one quarter mile (five-minute walk) or less of a bicycle and pedestrian route. These facility types are:

BIKE/WALK STREETS: Also known as "bicycle boulevards," these are **shared-use streets that give preference to bikes** over vehicular traffic. They are indicated with markings, signage, and optional traffic calming devices. This is the preferred facility type on low-volume neighborhood streets.

SHARROWS: Sharrows utilize **painted, full-lane width enlarged shared lane markings** with signage. Enlarged shared lane markings are optionally paired with bicycle-zone lane markings (the "Big Green Stripe.") This is the preferred facility type where bike lanes are not possible.

BIKE LANES: Bike Lanes are **dedicated, directional traffic lanes for bicycles**, located outside of vehicular traffic lanes. They are a minimum of 5-feet wide and indicated with stripes, directional arrows, and signage. This is the preferred facility type for all roads where possible.

BIKE ROUTES: Bike Routes consist of Share-the-Road and Bicycle Route signage and optional shared-lane markings (as permitted.) It is recommended for streets where dedicated bicycle facilities are either not possible due to road width or traffic conditions or not permitted by governing agencies.

All facility types include streetscape enhancements consisting of curb and sidewalk improvements/ replacement, tree lawns, street trees, and optional decorative street lighting. These enhancements improve pedestrian comfort and safety by delineating pedestrian and vehicular zones, discouraging right-of-way obstruction by parked cars, providing shade and nighttime lighting, and beautification. Additionally, Lewis Park is a pedestrian facility only with no bike paths proposed.

The proposed GRG *Centennial Greenway*, while considered part of the Bicycle and Pedestrian Facility Network and utilizing existing and proposed off-street facilities including Heman Park, Mona Terrace, and the Wilson Avenue buyout area, is an initiative of Great Rivers Greenway and is not discussed in further detail. Details for each facility type are presented on the following pages.

BICYCLE & PEDESTRIAN FACILITY NETWORK

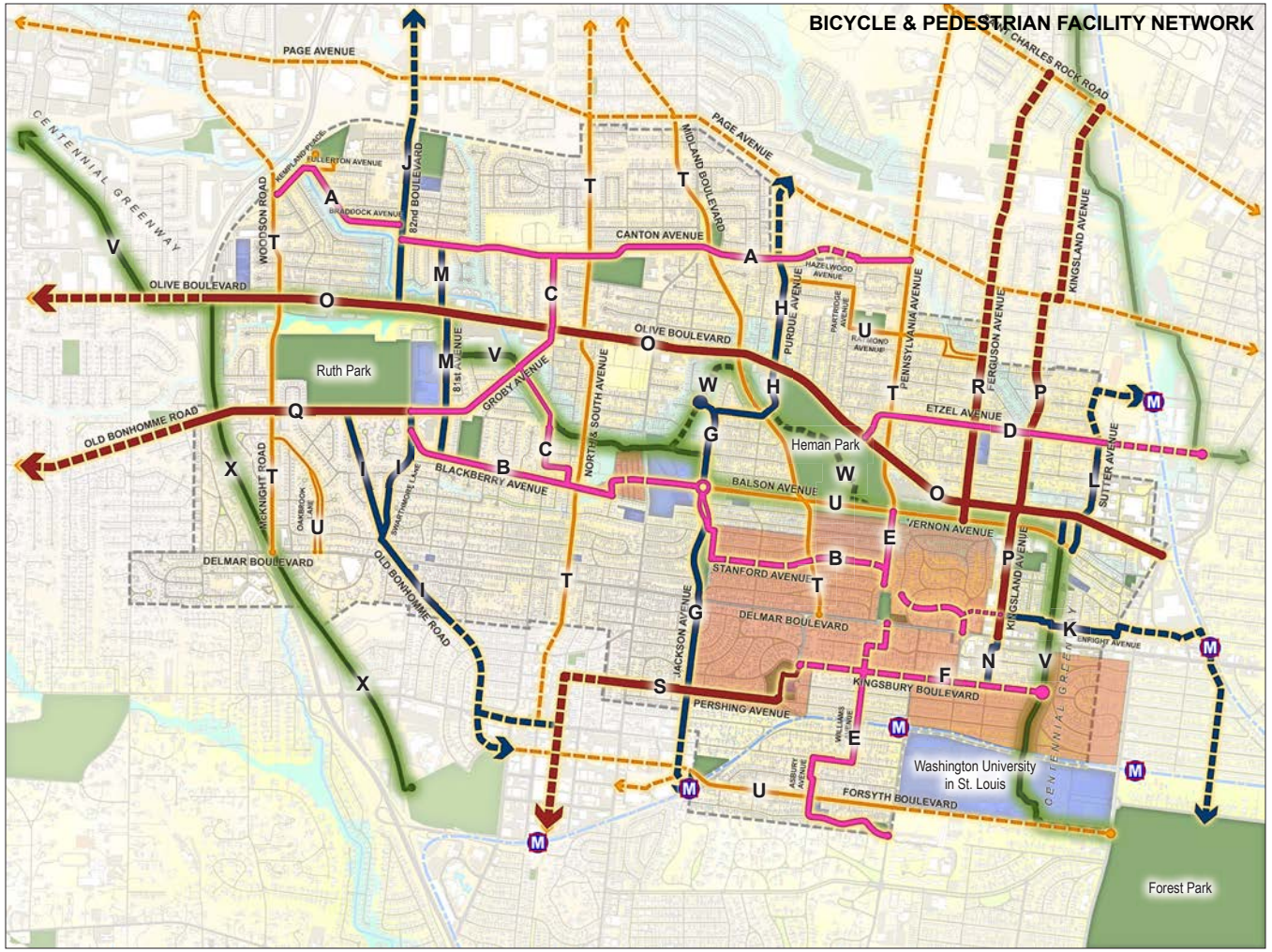
BIKE/WALK STREETS
- A. North Bike/Walk Corridor
- B. Central Bike/Walk Corridor
- C. North & South Connector
- D. Etzel Avenue
- E. Pennsylvania Connector
- F. Kingsbury Connector

SHARROWS
- G. Jackson Avenue
- H. Purdue Avenue
- I. Old Bonhomme Road/ Swarthmore Lane
- J. 82nd Boulevard
- K. Enright Avenue Connector
- L. Sutter Avenue Connector
- M. 81st Avenue
- N. Kingsland Avenue

BIKE LANES
- O. Olive Boulevard
- P. Kingsland Avenue
- Q. Old Bonhomme Road
- R. Ferguson Avenue
- S. Pershing Avenue

BIKE ROUTES
- T. St. Louis County Arterials
- U. Neighborhood Streets & Connectors

CENTENNIAL GREENWAY*
- V. Centennial Greenway
- W. Centennial Greenway Alternate Route
- X. Shaw Park Spur



*Centennial Greenway is a previously-approved planning initiative of Great Rivers Greenway (GRG) and is included as-is in the University City Bicycle & Pedestrian Plan. GRG maintains full authority over ongoing and future planning, design, and implementation of the Centennial Greenway.

Note: Any closed roads shall remain closed and will only be adjusted for pedestrian and bicycle travel.

Bike/Walk Streets (Bicycle Boulevards)

Bike/Walk Streets, also known as Bicycle Boulevards, are shared-use streets that give priority to bicycles over vehicular traffic. Bike/Walk Streets are ideally implemented on low-volume, low-speed residential streets that parallel arterial roads. Bike/Walk Streets encourage cyclists to avoid major thoroughfares by providing alternate routes, and encourage vehicular through-traffic to avoid neighborhood streets. Design, programming, and enforcement initiatives include:

- **STOP SIGNS:** Existing 4-way stop intersections should be changed to 2-way stop intersections for cross traffic, allowing Bike/Walk Street cyclists and traffic to proceed without stopping.

- **SPEED LIMITS:** Speed limits on Bike/Walk Streets should not exceed 20 miles per hour.

- **LANE MARKINGS AND SIGNAGE:** Bike/Walk Streets should be indicated with enlarged, full-lane width shared-lane markings (bike-and-chevron stencil), striping, and way-finding signage.

- **TRAFFIC-CALMING:** Bike/Walk Streets should include traffic-calming elements, including speed tables, rumble-strips, curb bulb-outs, and chicanes.

- **DIVERTERS:** Bike/Walk Streets can include optional traffic diverters at designated cross streets. These diverters will direct vehicular traffic onto parallel collector or arterial roads, restricting vehicular traffic to local traffic only while allowing bicycle traffic to pass through.

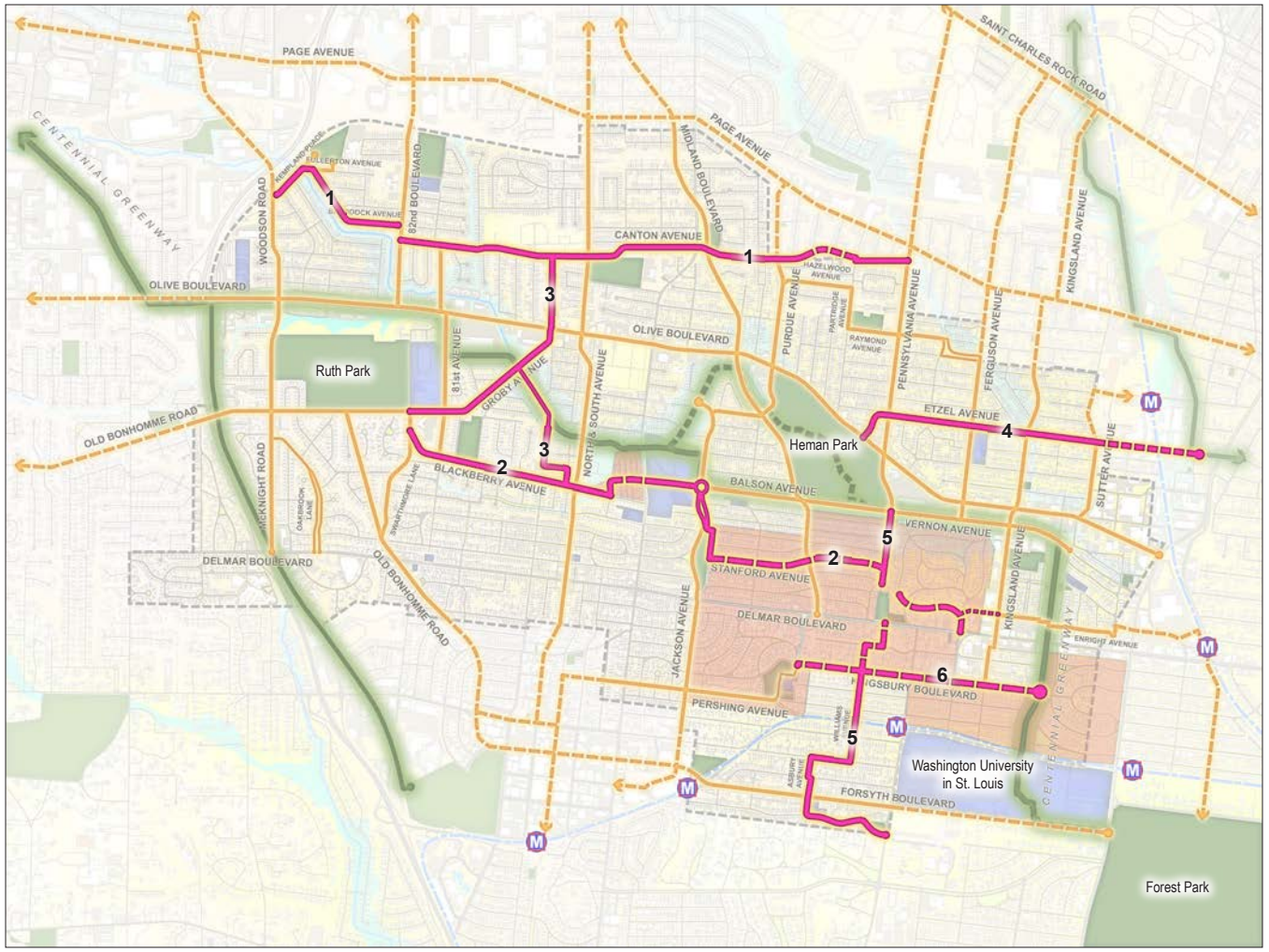
- **STREETSCAPE ENHANCEMENTS:** Bike/Walk Streets should include curb and sidewalk improvements, tree lawns, street trees, and optional decorative street lighting.

A number of proposed Bike/Walk Streets pass through private subdivisions. While subdivision residents have been involved in the planning process, coordination with and approval of subdivision Trustees will be required to implement planned facilities. In addition, an agreement would be executed between the Trustees and the City to address issues such as maintenance. The Bike/Walk Street facility network is illustrated on the facing page, and design details for Bike/Walk Streets are presented on page 18.

FACILITY TYPES

Bike/Walk Streets (Bicycle Boulevards)

1. North Bike/Walk Corridor
2. Central Bike/Walk Corridor
3. North & South Connector
4. Etzel Avenue
5. Pennsylvania Connector
6. Kingsbury Connector



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Sharrows

Sharrows consist of full-lane width enlarged shared-lane makings (bike-and-chevron stencil), Share-the-Road signage on shared-use streets. Bike/Walk Streets are ideally implemented on low- to medium-volume, low-speed and medium-speed residential streets and secondary connector streets where the development of Bike/Walk Streets or Bike Lanes is not feasible or possible due to street width or required through-traffic connectivity. Sharrows can improve cyclist safety by calling attention to cyclists from motorists. Design, programming, and enforcement initiatives include:

- **ENLARGED SHARED-LANE MARKINGS:** Streets with Sharrows should be indicated with enlarged shared-lane marking (bike-and-chevron stencil.) Markings should be 8- to 10-feet wide and located in the center of the traffic lane (outside traffic lane on 4-lane roads.)

- **SPEED LIMITS:** Speed limits on streets with Sharrows should not exceed 30 miles per hour.

- **SIGNAGE:** Streets with Sharrows should be indicated with Share-the-Road signage, optional Bike Route signage, and way-finding signage to parks and other amenities.

- **BICYCLE-ZONE LANE MARKINGS:** Streets with Sharrows can include optional bicycle-zone lane markings, also referred to as “the Big Green Stripe.” Bicycle-zone lane markings should consist of a 5- to 7-foot painted green lane between two white stripes, located in the outer half of traffic lane (outside traffic lane on 4-lane roads.)

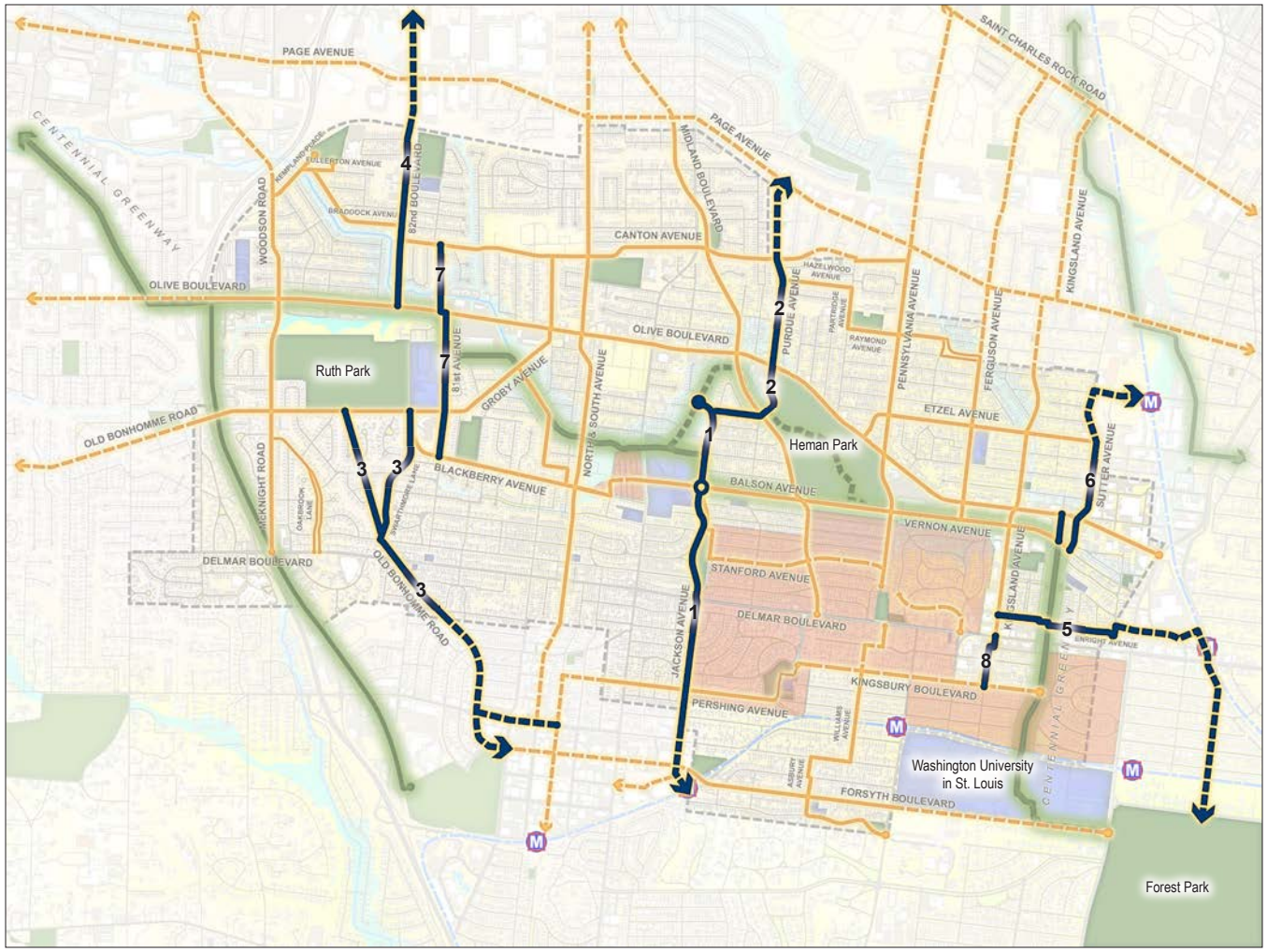
- **STREETSCAPE ENHANCEMENTS:** Streets with Sharrows should include curb and sidewalk improvements, tree lawns, street trees, and optional decorative street lighting.

The Sharrow facility network is illustrated on the facing page, and design details for streets with Sharrows are presented on page 24.

FACILITY TYPES

Sharrows

1. Jackson Avenue
2. Purdue Avenue
3. Old Bonhomme Road/ Swarthmore Lane
4. 82nd Boulevard
5. Enright Avenue Connector
6. Sutter Avenue Connector
7. 81st Avenue
8. Kingsland Avenue



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Bike Lanes

Bike Lanes consist of dedicated, striped lanes within the curb-to-curb dimension of the roadway. Regional standards for bike lane design are 2 one-way bike lanes located on the outside of the traffic lanes on each side of the roadway. Bike lanes are positioned between outermost traffic lane and the curb or the parallel parking lane, if present. Bike lanes are the preferred facility type for all roadways, given sufficient right-of-way or pavement width exists. Design, programming, and enforcement initiatives include:

- **STRIPED LANES:** Bike Lanes are one-way, 5- to 6- feet wide, and indicated by two white stripes. Bike Lanes should be located on the outside of traffic lanes, between the outermost traffic lane and the curb or parallel parking lane, if present. If Bike Lanes are located between traffic lanes and parallel parking lanes, the combined width of the Bike Lane and parallel parking lane should be a minimum of 13 feet to minimize door zone conflicts.

- **SPEED LIMITS:** Speed limits on streets with Bike Lanes should not exceed 40 miles per hour.

- **SIGNAGE:** Bike Lanes should be indicated with Bike Lane and Share-the-Road signage and way-finding signage to parks and other amenities.

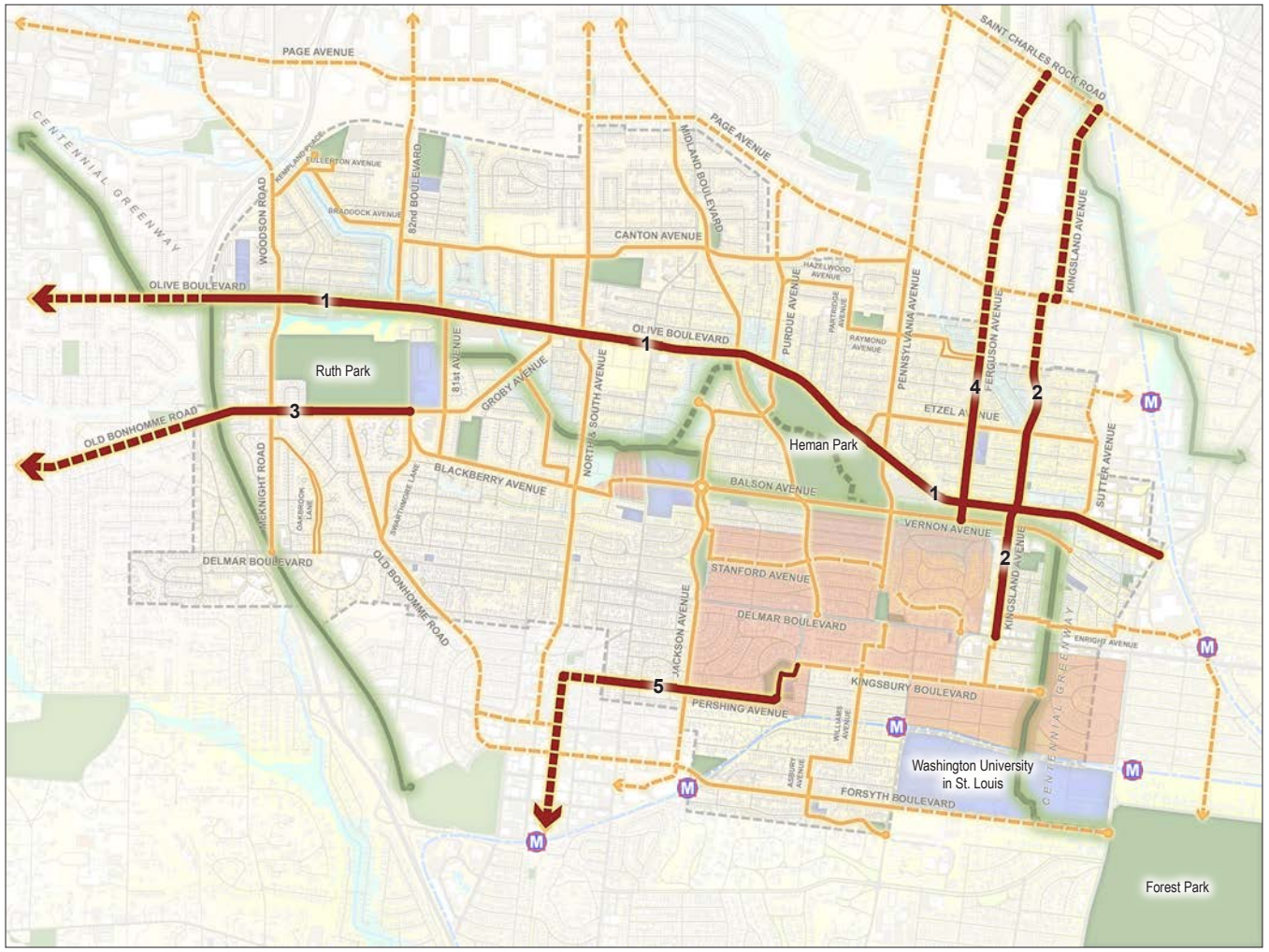
- **STREETSCAPE ENHANCEMENTS:** Streets with Bike Lanes should include curb and sidewalk improvements, tree lawns, street trees, and optional decorative street lighting.

The Bike Lane facility network is illustrated on the facing page, and design details for Bike Lanes are presented on pages 28 to 30.

FACILITY TYPES

Bike Lanes

1. Olive Boulevard
2. Kingsland Avenue
3. Old Bonhomme Road
4. Ferguson Avenue
5. Pershing Avenue



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Bike Routes

Bike Routes consist of roads that are designated as bicycle and pedestrian routes, but do not feature dedicated bicycle facilities or markings on the road itself. Bike Routes are roads that are either required for comprehensive bicycle connectivity and/or currently designated as University City bike routes but on which dedicated bicycle facilities are not possible due to road width and right-of way constraints, or not permitted due to jurisdictional regulations. Roads under the jurisdiction of St. Louis County Highways and Traffic are included in this facility type. Design, programming, and enforcement initiatives include:

- **SPEED LIMITS:** Speed limits on Bike Routes should not exceed 35 miles per hour.

- **SIGNAGE:** Bike Routes should be indicated with Share-the-Road signage and way-finding signage to parks and other amenities.

- **SHARED-LANE MARKINGS (Where Permitted):** Bike Routes can be indicated with standard shared-lane markings (bike-and-chevron stencil.) Markings should conform to standards set forth in the Gateway Bike Plan, the regional bicycle master plan completed in 2011 by Great Rivers Greenway District. Shared-Lane Markings should be implemented on all streets where permitted; Shared-Lane Markings are currently not permitted on roads in the St. Louis County Arterial Road System (ARS.)

- **STREETSCAPE ENHANCEMENTS:** Bike Routes should include curb and sidewalk improvements, tree lawns, street trees, and optional decorative street lighting.

The Bike Route facility network is illustrated on the facing page, and design details for Bike Routes are presented on pages 34.

FACILITY TYPES

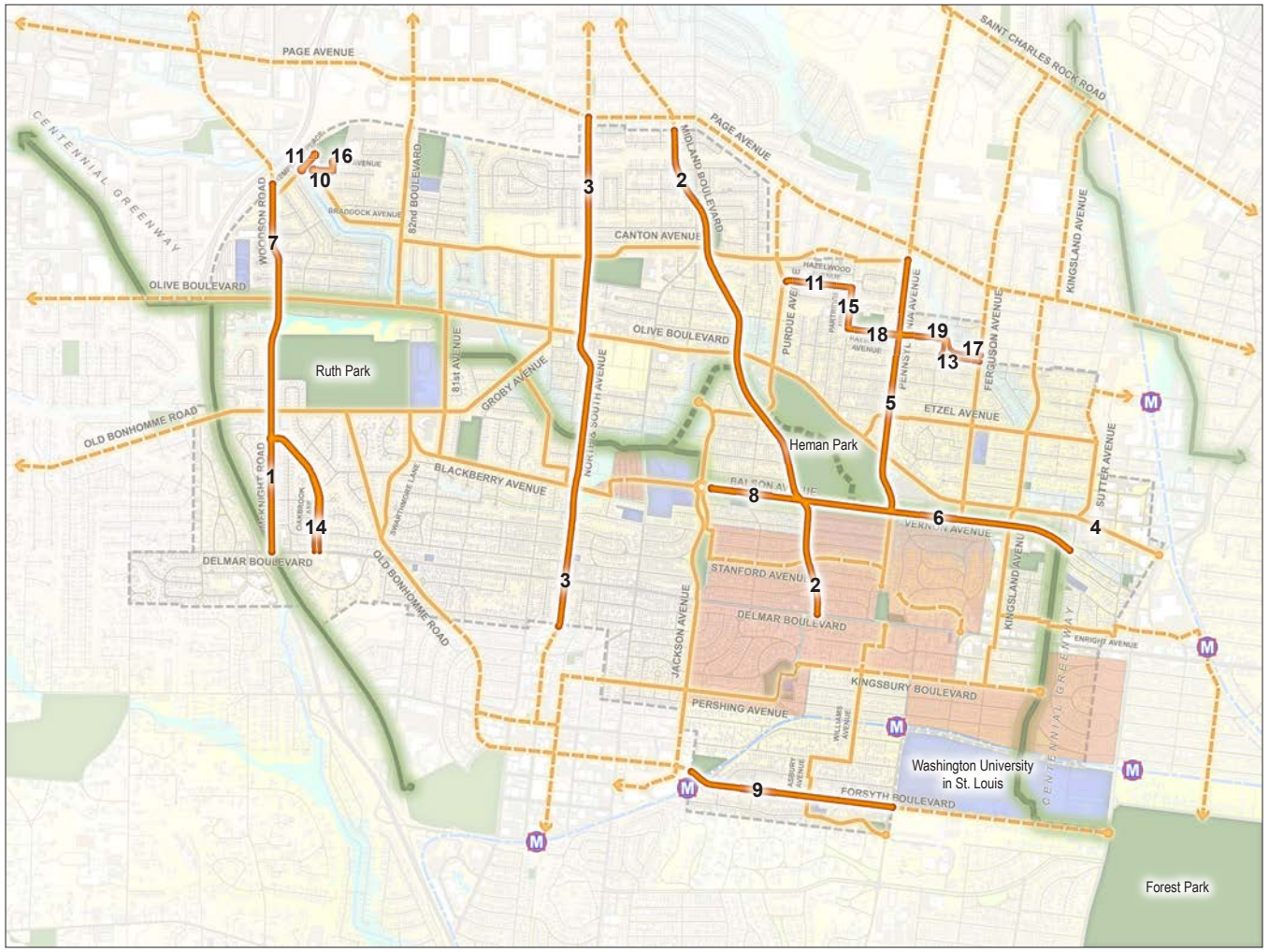
Bike Routes

ST. LOUIS COUNTY ARTERIAL ROADS

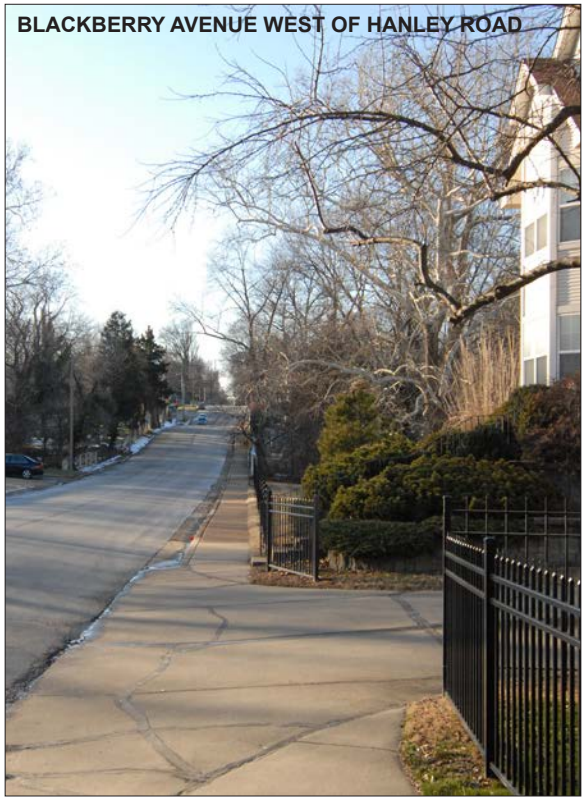
1. McKnight Road
2. Midland Boulevard
3. North & South Avenue
4. Olive Boulevard
5. Pennsylvania Avenue
6. Vernon Avenue
7. Woodson Road

UNIVERSITY CITY STREETS

8. Balson Avenue
9. Forsyth Boulevard
10. Fullerton Avenue
11. Hazelwood Lane
12. Kempland Place
13. Melrose Avenue
14. Oakbrook Lane
15. Partridge Avenue
16. Polk Avenue
17. Purcell Avenue
18. Raymond Avenue
19. Roberts Avenue



Implementation Guide


BLACKBERRY AVENUE WEST OF HANLEY ROAD

The *Implementation Guide* is the "how-to" of the Bicycle and Pedestrian Plan. The Plan is an ambitious vision that encompasses 30 miles of on-street bicycle and pedestrian facilities and streetscape enhancements. The *Implementation Guide* organizes and prioritizes the various projects, as specified by the City of University City and the Plan Steering Committee.

The following tables are a detailed *Project List* and actions that the community intends to complete or consider in order to implement the Bicycle and Pedestrian Plan. These projects and actions consist of *Phases* with corresponding *Priority Levels* and time frames. Projects are categorized by the following *Priority Levels:*

PRIORITY LEVEL 1 *(SHORT-TERM; 1-5 Years)*
PRIORITY LEVEL 2 *(MEDIUM-TERM; 5-15 Years)*
PRIORITY LEVEL 3 *(LONG-TERM; 10-20 Years)*

Within each *Priority Level*, individual projects may be prioritized based on a variety of considerations and ongoing evaluation. The City capital improvement program budget will outline how priorities are implemented. Examples of priority considerations may include:

- Connectivity to existing bike routes and/or bicycle and pedestrian plans in neighboring cities
- Equitable distribution of bicycle and pedestrian routes throughout University City
- Conversion of existing University City bike routes to new bicycle and pedestrian facilities
- Connectivity to *Centennial Greenway* existing and planned routes and/or Metrolink Stations

This *Implementation Guide* is structured to support and facilitate existing and ongoing initiatives and prioritize projects with a high value-to-cost ratio in order to build momentum for the implementation of the Bicycle and Pedestrian Plan. It does not prohibit existing or future projects from occurring outside the priority recommendations.

PROJECT LIST

BIKE/WALK STREETS (BICYCLE BOULEVARDS)

North Bike/Walk Corridor **Central Bike/Walk Corridor** **North & South Connector** **Etzel Avenue** **Pennsylvania Connector** **Kingsbury Connector**	**Phase 1**	Implement bicycle boulevard pavement markings (1 per 100 feet), striping, and road signage on identified streets. Review and modify if necessary location and orientation of stop-street intersections.	**Priority Level 1**
	Phase 2	Repair or replace sidewalks and street curbs as necessary. Replace existing roll curbs with vertical curbs as feasible. Implement new sidewalks if no sidewalks exist. Replace missing or damaged street trees as necessary. Implement traffic-calming devices at intersection if necessary.	**Priority Level 2**
	General Improvements	Address all intersections and crosswalks for universal accessibility, safety, and pedestrian comfort & walk-ability. Implement educational programming, traffic-safety monitoring, and enforcement.	**Priority Level 1**

SHARROWS

Jackson Avenue **Purdue Avenue** **Old Bonhomme Road** **82nd Boulevard** **Sutter Avenue Connector** **81st Avenue** **Kingsland Avenue**	**Phase 1**	**BASIC IMPLEMENTATION:** Implement lane-width shared lane markings (1 per 175 feet, outside traffic lanes) on each side of the road and two Share the Road signs per mile.	**Priority Level 1**
	General Improvements	Address all intersections and crosswalks for universal accessibility, safety, and pedestrian comfort & walk-ability. Implement educational programming, traffic-safety monitoring, and enforcement.	**Priority Level 1**
Enright Avenue Connector *(East City Limits to Kingsland Avenue via Enright/Loop North)*	**Phase 1**	**BASIC IMPLEMENTATION:** Implement lane-width shared lane markings (1 per 175 feet, outside traffic lanes) on each side of the road and two Share the Road signs per mile.	**Priority Level 1**
	Phase 2	**ENHANCED IMPLEMENTATION:** Repair, replace, or construct new sidewalks as necessary. Replace damaged or missing street trees as necessary.	**Priority Level 3**
	General Improvements	Address all intersections and crosswalks for universal accessibility, safety, and pedestrian comfort & walk-ability. Implement educational programming, traffic-safety monitoring, and enforcement.	**Priority Level 1**

PRIORITY LEVEL 1 *(SHORT-TERM; 1-5 Years)*
PRIORITY LEVEL 2 *(MEDIUM-TERM; 5-15 Years)*
PRIORITY LEVEL 3 *(LONG-TERM; 10-20 Years)*

PROJECT LIST

BIKE LANES

Olive Boulevard **Kingsland Avenue**	**Phase 1**	Implement two bike lane lines and bike-and-arrow symbols (1 per 175 feet) on each side of the road.	**Priority Level 1**
	Phase 3	Replace damaged or missing street trees as necessary. Implement OPTIONAL signature street lighting. Implement OPTIONAL underground utilities.	**Priority Level 3**
	General Improvements	Address all intersections and crosswalks for universal accessibility, safety, and pedestrian comfort & walk-ability. Implement traffic-safety monitoring and enforcement.	**Priority Level 1**
Old Bonhomme Road **Ferguson Avenue** **Pershing Avenue**	**Phase 1**	Implement two bike lane lines and bike-and-arrow symbols (1 per 175 feet) on each side of the road.	**Priority Level 1**
	Phase 3	Replace damaged or missing street trees as necessary.	**Priority Level 3**
	General Improvements	Address all intersections and crosswalks for universal accessibility, safety, and pedestrian comfort & walk-ability. Implement traffic-safety monitoring and enforcement.	**Priority Level 1**

PEDESTRIAN & STREETSCAPE IMPROVEMENTS

St. Louis County Arterials *(McKnight Road, Midland Boulevard, North & South Avenue, Pennsylvania Avenue,Vernon Avenue, Woodson Road)*	**Phase 1**	Implement Share the Road signage (2 per mile, or at the beginning/end of each street segment.)	**Priority Level 2**
	Phase 2	Repair or replace sidewalks and street curbs as necessary. Replace existing roll curbs with vertical curbs as feasible. Implement new sidewalks if no sidewalks exist.	**Priority Level 2**
	Phase 3	Replace damaged or missing street trees as necessary. Implement OPTIONAL signature street lighting. Implement OPTIONAL underground utilities.	**Priority Level 3**
	General Improvements	Address all intersections and crosswalks for universal accessibility, safety, and pedestrian comfort & walk-ability. Implement traffic-safety monitoring and enforcement.	**Priority Level 2**

PRIORITY LEVEL 1 *(SHORT-TERM; 1-5 Years)*
PRIORITY LEVEL 2 *(MEDIUM-TERM; 5-15 Years)*
PRIORITY LEVEL 3 *(LONG-TERM; 10-20 Years)*

PROJECT LIST

PEDESTRIAN & STREETSCAPE IMPROVEMENTS

Neighborhood Streets and Connectors *(Balson Avenue, Forsyth Boulevard, Fullerton Avenue, Hazelwood Lane, Kempland Place, Melrose Avenue, Oakbrook Lane, Partridge Avenue, Polk Avenue, Purcell Avenue, Raymond Avenue and Roberts Avenue)*	**Phase 1**	Implement shared lane markings (1 per 175 feet, outside traffic lanes) on each side of the road. Implement Share the Road signage (2 per mile, or at the beginning/end of each street segment.)	**Priority Level 2**
	Phase 2	Repair or replace sidewalks and street curbs as necessary. Replace existing roll curbs with vertical curbs as feasible. Implement new sidewalks if no sidewalks exist.	**Priority Level 3**
	Phase 3	Replace damaged or missing street trees as necessary.	**Priority Level 3**
	General Improvements	Address all intersections and crosswalks for universal accessibility, safety, and pedestrian comfort & walk-ability. Implement traffic-safety monitoring and enforcement.	**Priority Level 2**

*CENTENNIAL GREENWAY**

Centennial Greenway*	**General Improvements**	Support continued property acquisition, planning, approval, and facilitiation.	**Priority Level 2**

PRIORITY LEVEL 1 *(SHORT-TERM; 1-5 Years)*
PRIORITY LEVEL 2 *(MEDIUM-TERM; 5-15 Years)*
PRIORITY LEVEL 3 *(LONG-TERM; 10-20 Years)*

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KINGSLAND BOULEVARD NEAR RAYMOND AVENUE

Policies, Operations & Maintenance

In addition to the *Projects* previously listed, the Bicycle and Pedestrian Plan includes several policy, operations, and maintenance recommendations. These City-wide initiatives include enhancing universal accessibility; *Complete Streets* enhancements; programming; operations and maintenance for enforcement, education, and data-collection.

COMPLETE STREETS

Complete Streets refers to the idea that streets need to work for everyone; people who drive but also pedestrians, cyclists, transit-users, senior citizens and youth, and the able-bodied and the disabled. One of the first items completed by the M*ayor's Task Force on Walk and Bike-ability* was the development of a *Complete Streets* policy for University City; this policy is pending adoption by the University City City Council. Bicycle and pedestrian facilities proposed in the Plan have been designed to achieve the pending *Complete Streets* policy. In addition, the Plan recommends the implementation of *Complete Streets* on all University City-owned streets, including the construction of new vertical curbs along existing streets, the replacement of roll-curbs with vertical curbs as feasible, and the construction of sidewalks along streets where sidewalks do not currently exist. These improvements should be prioritized based upon the recommendations of the Bicycle and Pedestrian Plan.

UNIVERSAL ACCESSIBILITY

Through the planning process, University City learned that, while many streets throughout the city may be ADA-accessible, they do not necessarily provide a high level of service to users with disabilities. The Bicycle and Pedestrian Plan recommends a City-wide program to provide enhanced universal accessibility through intersection, sidewalk, crosswalk, and signal design, including:

1) **Designated crossing points at all intersections with accessible-curb cuts oriented perpendicular to the street;**
2) **Tactile surface changes at curb cuts and crosswalks;**
3) **Traffic and walk signals countdown timers, audible signals, and protected crossing phases (pedestrian-only) where necessary (i.e. Big Bend Boulevard at Delmar Boulevard);**

4) **Installation of at least one electronic, on-demand pedestrian-crossing signal at Olive Boulevard between Midland Boulevard and Pennsylvania Avenue.**

PROGRAMMING & OPERATIONS

The Bicycle and Pedestrian Plan recommends continued recreational, educational, and public outreach activities and events. In addition, the Plan recommends specific programming and operational initiatives to help fulfill the goals of the Plan and provide ongoing management, including:

UTILIZE CITY STAFF TO FACILITATE ONGOING IMPLEMENTATION: In order to maintain long-term momentum and accountability for the Plan and to provide a clearing house for all bicycle- and pedestrian-oriented improvements, the Plan recommends utilizing City staff within the Department of Public Works and Parks and the Department of Community Development to serve as cheerleaders and provide a single point of contact for ongoing implementation of the Plan and other bicycle and pedestrian amenities and enhancements.

SAFETY OUTREACH, PROGRAMMING, AND ENFORCEMENT: The Plan recommends safety education and outreach programming. These programs can be coordinated through the University City Police and Fire Departments and should utilize public safety professionals and local experts. These programs can be implemented through University City schools, existing City programs and events, and community groups including Scout troops, churches, and civic organizations. In addition, the Plan recommends a comprehensive, city-wide speed-limit, traffic signal, and pedestrian safety enforcement programs. A list and detailed descriptions of potential programming opportunities may be found on page 82 of the *Appendix*.

DATA COLLECTION, BENCHMARKING, AND MEASUREMENT: In order to establish achievable goals and evaluate the success of the Plan, it is recommended that an ongoing data collection and measurement program be implemented and maintained. This program would consist of initial data collection to establish baseline conditions for increasing safety, awareness, and daily instances of walking and biking. An annual data collection program to measure actual increases in safety, awareness, and daily instances of walking and biking should be conducted for a recommended minimum of five years.

BUS STOP ON NORTH & SOUTH AVENUE WITH NO SIDEWALK ACCESS

MONA TERRACE SIDEWALK CONNECTOR TO SHAFTSBURY AVENUE

MAINTENANCE

The bicycle and pedestrian network will require periodic maintenance, including street sweeping, road resurfacing, road restriping, replacement of deficient sidewalk segments, replacement of worn signage, pot hole filling, and other activities. These maintenance activities should be considered during the development of an annual capital budget. Timing for maintenance varies by activity.

The sweeping of on-street bicycle facilities can be incorporated into the Department of Public Works and Parks regular street sweeping program. Generally, on-street bicycle facilities should be swept a minimum of two times a year. If a roadway is resurfaced with chip seal or a similar surface, loose gravel should be swept shortly after resurfacing to reduce negative impacts to cyclists.

Pavement re-striping and repainting of pavement markings should be completed every two to three years, or as needed. The placement of pavement markings will have an impact on their lifespan and need for replacement. A shared lane marking will last longer when placed in the middle of the travel lane, as directed in the MUTCD, rather than to the right of the travel lane or in the wheel track, where constant wear and tear from vehicle tires can reduce the lifespan of pavement markings.

Outdated, missing, or damaged route signs, “Share The Road” signs, and other signs installed as part of the non-motorized transportation network will require replacement on an as-needed basis. Reflectivity and readability may also factor into the decision to replace signs.

Common sidewalk maintenance issues like tree root damage, cracking, ponding, and step separation are addressed as part of the City’s annual sidewalk improvement program. The City’s currently utilizes a rating system to determine need for improvements on a block-by-block basis, addressing blocks most in need of attention, as funding is available.

Additional information relating to bicycle facility maintenance can be found in the Gateway Bike Plan, the regional bicycle master plan completed in 2011 by Great Rivers Greenway District. Relevant information can be found in Appendix D (maintenance concerns and scheduling) and Appendix L (maintenance costs – P. 48) of the Gateway Bike Plan.

Opinion Of Probable Cost

An *Opinion of Probable Cost* has been assembled for each project in the Bicycle and Pedestrian Plan. It is based on the *Gateway Bike Plan, Appendix L (Facility Cost Tool)* and on similar projects in the St. Louis Region. This *Opinion* will assist the City of University City in developing capital improvements programming, departmental budgeting, grant writing, and fund-raising for bicycle and pedestrian projects. Cost *Opinions* provided in this section include options that may not be necessary for all projects, and as such, actual costs may be lower than the averages used here. The *Opinion of Probable Cost* is presented in the tables on the following pages.

COST OPINION CONTINGENCY

The *Opinion of Probable Cost* includes a Contingency of Thirty-Percent (30%) in addition to enumerated unit-costs. This Contingency is intended to account for planning, design, engineering, and site preparation work not reflected in enumerated unit-costs.

DISCLAIMERS

This *Opinion of Probable Cost* represents a good-faith effort by the City of University City, supported by the most current information that is publicly available. All proposals contained herein are understood by the City of University City to: 1) be representative of public consensus from the Bicycle and Pedestrian Plan, and; 2) have the expressed approval of the City of University City.

This *Opinion of Probable Cost* is limited only to the conditions and factors expressly enumerated herein. All other conditions and factors that have not been expressly enumerated herein are excluded from this *Opinion of Probable Cost*, including but not limited to:

DEMOLITION

Unless otherwise noted, all potential costs associated with demolition of existing buildings, roads, sidewalks, and infrastructure, are deemed to be indeterminate and are not included in this *Opinion of Probable Cost*.

LAND ACQUISITION

Unless otherwise noted, all potential costs associated with land acquisition are deemed to be indeterminate and are not included in this *Opinion of Probable Cost*.

ENVIRONMENTAL REMEDIATION

Unless otherwise noted, all potential costs associated with environmental remediation are deemed to be indeterminate and are not included in this *Opinion of Probable Cost*.

UTILITIES & PUBLIC INFRASTRUCTURE

Unless otherwise noted, all potential costs associated with the installation, repair, upgrade, or augmentation of utilities and infrastructure within public right-of-ways (excluding Street, Streetscape, and Bicycle & Pedestrian Improvements as enumerated herein) are deemed to be indeterminate and are not included in this *Opinion of Probable Cost*.

This *Opinion of Probable Cost* is completely and totally non-binding and is provided for purposes of comparison only. It is not intended or authorized to serve as a cost estimate for the purpose of contracts, construction cost determinations, or soliciting bids. All lengths, areas, quantities, facility types, and projects provided for in this *Opinion of Probable Cost* are based upon the Bicycle and Pedestrian Plan with the approval of the City of University City.

The figures presented in the *Opinion of Probable Cost* are expressed in 2012 U.S. dollars and do not account for future inflation.

CONDITIONS OF USE

This *Opinion of Probable Cost* is recognized and acknowledged to be a non-binding document. The City of University City offers no guarantee or warranty, expressed or implied, for the information contained herein. Any individual or entity using this *Opinion of Probable Cost* for any purpose agrees to save and hold harmless the City of University City, Trailnet, and H3 Studio, Inc. from any and all costs or damages, direct or otherwise, that may arise from said use of this *Opinion of Probable Cost*.

BICYCLE & PEDESTRIAN PLAN
OPINION OF PROBABLE COST

ONE HUNDRED PERCENT (100%) BICYCLE FACILITY IMPLEMENTATION

Shared Lane Marking/Signage Treatment

Shared lane marking/signage treatment assumes 30 shared lane marking symbols per mile on each side of the road, plus two "Share the Road" signage assemblies per mile.

Street Name	Length (ft)	Length (mi)	Cost Per Mile	Cost Per Segment
Forsyth Boulevard	3,690	0.70	$21,000.00	$14,676.14
Westgate Avenue	670	0.13	$21,000.00	$2,664.77
Balson Avenue	1,812	0.34	$21,000.00	$7,206.82
Oakbrook Lane	2,636	0.50	$21,000.00	$10,484.09
Melrose Avenue	753	0.14	$21,000.00	$2,994.89
Purcell Avenue	819	0.16	$21,000.00	$3,257.39
Roberts Avenue	341	0.06	$21,000.00	$1,356.25
Raymond Avenue	1,913	0.36	$21,000.00	$7,608.52
Partridge Avenue	1,090	0.21	$21,000.00	$4,335.23
Hazelwood Lane	1,350	0.26	$21,000.00	$5,369.32
Kempland Place	372	0.07	$21,000.00	$1,479.55
Fullerton Avenue	342	0.06	$21,000.00	$1,360.23
Polk Avenue	450	0.09	$21,000.00	$1,789.77
Sub-Total				$64,582.95
Contingency (30%)				$19,374.89
Shared Lane Marking/Signage Totals	**16,238**	**3.08**		**$83,957.84**

Shared Lane Signage Treatment

Assumes 2 "Share the Road" signage assemblies every mile, or at the end/beginning of each street segment.

Street Name	Length (ft)	Length (mi)	Cost Per Mile	Cost Per Segment
Vernon Avenue*	5,296	1.00	$1,000.00	$1,003.03
Midland Boulevard*	9,906	1.88	$1,000.00	$1,876.14
North & South Avenue*	9,605	1.82	$1,000.00	$1,819.13
McKnight Road*	4,822	0.91	$1,000.00	$913.26
Pennsylvania Avenue*	4,857	0.92	$1,000.00	$919.89
Woodson Road*	2,220	0.42	$1,000.00	$420.45
Olive Blvd (Kingsland to E City Limits)*	2,930	0.55	$1,000.00	$554.92
Sub-Total				$7,506.82
Contingency (30%)				$2,252.05
Shared Lane Signage Treatment Totals	**39,636**	**7.51**		**$9,758.86**

* St. Louis County Arterial Road System (ARS)
** Missouri Department of Transportation (MoDOT)

BICYCLE & PEDESTRIAN PLAN
OPINION OF PROBABLE COST

ONE HUNDRED PERCENT (100%) BICYCLE FACILITY IMPLEMENTATION

Sharrows

The sharrow treatment assumes 30 lane-width lane markings on each side of the road, plus two Share-the-Road signage assemblies per mile.

Street Name	Length (ft)	Length (mi)	Mile	Cost Per Segment
Kingsland Avenue	1,068	0.20	$42,000.00	$8,495.45
Enright Avenue	1,173	0.22	$42,000.00	$9,330.68
Loop North	812	0.15	$42,000.00	$6,459.09
Sutter Avenue	2,570	0.49	$42,000.00	$20,443.18
Jackson Avenue	6,380	1.21	$42,000.00	$50,750.00
Ahern Avenue	922	0.17	$42,000.00	$7,334.09
Purdue Avenue	3,210	0.61	$42,000.00	$25,534.09
Old Bonhomme Road	4,244	0.80	$42,000.00	$33,759.09
Swarthmore Lane	2,587	0.49	$42,000.00	$20,578.41
81st Avenue	1,877	0.36	$42,000.00	$14,930.68
Hafner Place	1,283	0.24	$42,000.00	$10,205.68
82nd Boulevard	3,473	0.66	$42,000.00	$27,626.14
Sub-Total				$235,446.59
Contingency (30%)				$70,633.98
Sharrows Total	**29,599**	**5.61**		**$306,080.57**

Bike Lane Treatments

Bike lane facility assumes 2 lane lines and 30 bike and arrow symbols per mile on each side of the road.

Street Name	Length (ft)	Length (mi)	Cost Per Mile	Cost Per Segment
Olive Boulevard (W City Limits to Kingsland)**	16,394	3.10	$31,560.00	$97,991.41
Kingsland Avenue*	5,203	0.99	$31,560.00	$31,099.75
Ferguson Avenue	3,675	0.70	$31,560.00	$21,966.48
Pershing Avenue	3,150	0.60	$31,560.00	$18,828.41
Groby Road	4,593	0.87	$31,560.00	$27,453.61
Old Bonhomme Road	2,921	0.55	$31,560.00	$17,459.61
Sub-Total				$214,799.27
Contingency (30%)				$64,439.78
Bike Lane Totals	**35,936**	**6.81**		**$279,239.05**

* St. Louis County Arterial Road System (ARS)

** Missouri Department of Transportation (MoDOT)

BICYCLE & PEDESTRIAN PLAN
OPINION OF PROBABLE COST

ONE HUNDRED PERCENT (100%) BICYCLE FACILITY IMPLEMENTATION

Bike/Walk Streets (Bicycle Boulevards)

This treatment type assumes bicycle boulevard pavement markings every 100 feet and 2 signs per block (300 feet). Does not include traffic calming devices.

Street Name	Length (ft)	Length (mi)	Cost Per Mile	Cost Per Segment
Northmoor Drive	1,584	0.30	$44,100.00	$13,230.00
Asbury Avenue	1,123	0.21	$44,100.00	$9,379.60
Maryland Avenue	763	0.14	$44,100.00	$6,372.78
Williams Avenue	2,270	0.43	$44,100.00	$18,959.66
Washington Avenue	349	0.07	$44,100.00	$2,914.94
Vassar Avenue	470	0.09	$44,100.00	$3,925.57
Kingsbury Boulevard	4,674	0.89	$44,100.00	$39,038.52
Yale Avenue	203	0.04	$44,100.00	$1,695.51
Stanford Avenue	1,494	0.28	$44,100.00	$12,478.30
Pennsylvania Avenue	1,377	0.26	$44,100.00	$11,501.08
Cornell Avenue	3,368	0.64	$44,100.00	$28,130.45
Balson Avenue	1,910	0.36	$44,100.00	$15,952.84
Blackberry Aveue	4,133	0.78	$44,100.00	$34,519.94
Wild Cherry Lane	331	0.06	$44,100.00	$2,764.60
Burr Oak Lane	470	0.09	$44,100.00	$3,925.57
Warder Avenue	764	0.14	$44,100.00	$6,381.14
Mt. Olive Avenue	1,396	0.26	$44,100.00	$11,659.77
Canton Avenue	8,867	1.68	$44,100.00	$74,059.60
Braddock Drive	2,228	0.42	$44,100.00	$18,608.86
Fullerton Avenue	226	0.04	$44,100.00	$1,887.61
Kempland Place	793	0.15	$44,100.00	$6,623.35
Sub-Total				$324,009.72
Contingency (30%)				$97,202.91
Bike/Walk Street Totals	**38,793**	**7**		**$421,212.63**

BICYCLE & PEDESTRIAN PLAN
OPINION OF PROBABLE COST

ENHANCED STREETSCAPE & PEDESTRIAN IMPROVEMENTS TO MEET COMPLETE STREET GUIDELINES

Curb & Sidewalk Improvements

This improvement assumes 6-inch concrete curbs and 4-foot concrete sidewalks on each side of the road. This improvement assumes that 80% of facility lengths will receive these improvements.†

Street Name	Length (ft)	Length (mi)	Cost Per Mile	Cost Per Segment
All Streets	128,162†	24†	$464,640.00	$11,278,220.80†
Sub-Total				$11,278,220.80
Contingency (30%)				$3,383,466.24
Curb & Sidewalk Improvements Totals	**128,162†**	**24†**		**$14,661,687.04†**

Street Tree Improvements

This improvement assumes 2 inch caliper, deciduous hardwood trees, 40 feet on-center, on each side of the road. This improvement assumes that 60% of facility lengths will receive these improvements.

Street Name	Length (ft)	Length (mi)	Cost Per Mile	Cost Per Segment
All Streets	96,121	18	$31,500.00	$573,450.34
Sub-Total				$573,450.34
Contingency (30%)				$172,035.10
Street Tree Improvements Totals	**96,121**	**18**		**$745,485.44**

† The City of University City will generally only replace curbs when needed. Curb replacement and final costs are dependent on the condition of the area.

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Funding Sources

Creative *Funding Sources*, both internal and external, are necessary for the development of a bicycle- and pedestrian-friendly community. Funding programs for bicycle and pedestrian improvements vary significantly with regard to type of improvement, total allowable project cost, required local match, competitiveness, and other important characteristics. The City of University City should seek to draw from the diverse range of federal, local, and private-sector funding programs available to fund both infrastructure improvements and programs. Local funds should be leveraged as match for external funding in order to maximize the City's investment. As a policy, the City should integrate bicycle and pedestrian improvements with planned and scheduled capital improvement projects. The list of funding sources presented below should be referenced throughout plan implementation.

FEDERAL FUNDING SOURCES

In July 2012, a new transportation bill was authorized, Moving Ahead for Progress in the 21st Century, MAP-21. There are several programs within Map-21 that are available to fund bicycle and pedestrian projects and improvements. In addition to funding sources through Map-21, there are other federal funding options. Federal funding sources are described below in more detail, including contact information for each source.

- **Surface Transportation Program (STP)**
  The 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 nonmotorized transportation, transit capital projects and public bus terminals and facilities. STP funds are administered through the Missouri Department of Transportation. Fifty percent of a State's STP funds are to be distributed to areas based on population (suballocated), with the remainder to be used in any area of the State.

  More information:
  http://www.ewgateway.org/
  http://www.fhwa.dot.gov/map21/stp.cfm

- **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.

  More information:
  http://www.fhwa.dot.gov/map21/hsip.cfm

- **Congestion Mitigation and Air Quality 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. The CMAQ has new performance-based features.

  More information:
  http://www.fhwa.dot.gov/map21/hsip.cfm

- **Transportation Alternatives Program (TAP)**
  The Transportation Alternatives Program is a new funding program under MAP-21. TAP provides for a variety of alternative transportation projects that were previously eligible activities under separately federally funded programs. This program is funded at a level equal to two percent of the total of all MAP-21 authorized Federal-aid highway and highway research funds, with the amount for each State set aside from the State's formula apportionments. 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.

  TAP is administered by the Missouri Department of Transportation.

  More information:
  http://www.fhwa.dot.gov/map21/tap.cfm

- **National Highway Performance Program (NHPP)**
  Also a program of MAP-21, the NHPP provides funding for projects including bicycle transportation and pedestrian walkways on principle arterials and on the Interstate Highway System.

  More information:
  http://www.fhwa.dot.gov/map21/nhpp.cfm

- **Recreational Trails Program (RTP)**
  The RTP is a program incorporated into the MAP-21, Transportation Alternatives Program. 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.

  More information:
  http://www.fhwa.dot.gov/environment/recreational_trails/
  http://www.mostateparks.com/page/55065/outdoor-recreation-grants

- **Safe Routes to School Program (SRTS)**
  SRTS is a program incorporated into the MAP-21, Transportation Alternatives Program. Funds are administered through the Missouri Department of Transportation.

  More information:
  http://www.fhwa.dot.gov/map21/tap.cfm
  http://www.modot.org/safety/SafeRoutestoSchool.htm

- **State and Community Highway Safety Grant Program (Section 402)**
  Section 402 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.

  More information:
  http://safety.fhwa.dot.gov/policy/section402/

LOCAL FUNDING SOURCES

Local funding sources play a vital role in developing a bicycle and pedestrian network. While external funds are available for many projects, most require a local match of 20 to 50 percent. A number of different options should be explored to create a dedicated stream of funding for bicycle and pedestrian infrastructure and programming, including use of existing local option sales taxes as well as new taxes, impact fees, and capital improvements set-aside.

- **Local Option Sales Taxes**
  In 1995, the Missouri State Legislature approved enabling legislation that allowed cities to levy a sales tax for park improvements and/or storm water control purposes. Since 1995, over 100 municipalities in the state have voted to levy such a tax. In November 2001, voters in the City of University City approved a ½ cent sales tax on all retail sales in the City's corporate boundaries to fund construction, maintenance and repair of park infrastructure. These funds can be used to provide a local match for external funding sources, thus maximizing the impact of local investment. Additionally, the City also has a ½ cent capital improvement sales tax, which can be directed towards bicycle and pedestrian facilities as well. It is important to note that University City's Local Option Sales Tax is restricted to projects located on Olive Boulevard or in the section of the Delmar Loop located in University City only.

- **System Development Charges/Developer Impact Fees**
  As new development occurs, the municipality may charge developers to fund the additional service capacity required by the development. These development charges, or impact fees, can be used to construct transportation infrastructure, including roads, transit stations or stops, and bicycle and pedestrian facilities.

  More information:
  http://www.impactfees.com/index.php
  http://www.mdt.mt.gov/research/toolkit/m1/ftools/dei/if.shtml

- **Community Improvement Districts (CIDs)**
  A CID is a defined area in which property owners pay an additional tax or fee to finance capital improvements, additional security, or marketing the district as a commercial destination. Potential capital improvements include sidewalks, street lighting, benches, trash receptacles, information kiosks, public art projects, and other pedestrian-oriented features.

  More information:
  http://www.moga.mo.gov/const/a03038c.htm
  http://www.stlrcga.org/Documents/Incentives/MO_CID%20Detail.pdf
  http://www.missouridevelopment.org/community%20services/Local%20Finance%20Initiatives/Community%20Improvement%20District.html

- **Neighborhood Improvement Districts (NIDs)**
  Similar to CID's, NID's are created to finance public-use improvements through special tax assessments to property owners in which the improvements are made. Typical improvements in NID's include sidewalk and crosswalk improvements, street lighting systems, parks and recreational facilities, pedestrian bridges, overpasses or tunnels, and landscaping enhancements.

  More information:
  http://www.moga.mo.gov/statutes/C000-099/0670000453.HTM
  http://www.missouridevelopment.org/community%20services/Local%20Finance%20Initiatives/Neighborhood%20Improvement%20District.html

- **Capital Improvement Budget Set-Asides**
  Amending the capital improvement budget to require a set-aside for bicycle and pedestrian projects can ensure a constant annual funding stream for plan implementation. A set aside can be allocated as a percent of the total budget, or as a fixed dollar amount. These bicycle and pedestrian funds can be used to fully finance projects or can be leveraged as local match to secure external funding.

- **Special Issue Bonds**
  Local governments use bonds as a means of financing infrastructure needs, which include, but are not limited to, streets, schools, highways, bridges, sewer and water systems, parks, and trails. In many cases, municipalities and other local agencies will allocate a specific amount of the bond for bicycle and pedestrian projects. In King County, Washington, for example, $33 million of a $100 million bond to protect open space in urban areas was set aside for trail development.[1] In most cases, like that in King County, bicycle and pedestrian projects are part of a larger bond issue, most often a component of transportation or parks bonds.

REGIONAL FUNDING SOURCES

There are at least two funding sources dedicated to parks and greenways in the St. Louis region.

- **St Louis County Municipal Park Grant**
  This program provides roughly $3 million annually for the 91 municipalities throughout St. Louis County to fund regional and local parks initiatives. The Funds are administered through the St. Louis County Municipal League.

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

- **Great Rivers Greenway District (GRG)**
  GRG, the local parks and recreation tax district for City of St. Louis, St. Louis County, and St. Charles County, has partnered with municipalities and counties in the St. Louis Metropolitan Area to develop an interconnected system of trails and greenways. While GRG does not directly provide funds to local municipalities, GRG collaborates frequently with local government agencies to develop construction and maintenance agreements. The Centennial Greenway, a GRG project that will connect University City and other St. Louis County communities and the City of St. Louis through recreational and alternative transportation opportunities, is currently in the

[1] Baltimore Regional Transportation Board (Maryland). The Baltimore Regional Bicycle, Pedestrian, and Greenway Transportation Plan. Baltimore: Baltimore Regional Transportation Board (2001). Retrieved from http://www.baltometro.org/ on January 20, 2012.

early stages of development. Projects like the Centennial Greenway rely on creative partnerships with local agencies to ensure these assets will serve the region for years to come.

More information:
http://www.greatrivers.info/

PRIVATE SECTOR 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 match for federal funds.

- **Bikes Belong Grant Program**
  Bikes Belong 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.

  More information:
  http://www.bikesbelong.org/grants/

- **Missouri Foundation for Health's (MFH) Healthy and Active Communities Program**
  MFH is the state's largest healthcare foundation working to improve health in communities it serves. Through the Healthy and Active Communities Program, MFH funds projects to combat obesity including bike-to-school programs, increasing access to multi-use trails, and other innovative programs and infrastructure improvements to increase physical activity.

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

- **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.

  More information:
  http://www.rwjf.org/applications/solicited/cfplist.jsp

OTHER FUNDING SOURCES

- **Adopt a Bikeway/Sidewalk/Trail Program**
  Local organizations, businesses and community groups often engage in civic projects, including Adopt-A-Highway programs and other landscaping and beautification projects. The City could develop an “Adopt-A-Trail” or “Adopt-A-Sidewalk” program to assist in the routine maintenance or landscaping of the City’s bicycle and pedestrian network.

- **Community Fundraising**
  While community fundraising cannot and should not be looked to fund all bicycle and pedestrian projects, it can be an innovative way to raise projects funds while also building community awareness and support for bicycle and pedestrian transportation and recreation. Fundraising events, “buy-a-brick” programs for sidewalk projects, and other creative funding strategies have been utilized in other communities in the United States with great success.

- **Corporate Partnerships**
  Corporate donations and partnerships can provide an unconventional source of funds for bicycle and pedestrian projects. Many businesses understand the value of bicycle and pedestrian infrastructure, parks and open space, and opportunities for healthy and active living as contributing factors to both economic development and quality of life for employees. As such, corporations and local businesses alike have funded trail and greenway projects across the nation. The City should seek out opportunities to partner with the business community to aid in the implementation of this plan.

BICYCLE & PEDESTRIAN PLAN
FUNDING SOURCES MATRIX

	Federal Funding Sources	STP	HSIP	TAP	CMAQ	Section 402	SRTS	TCSP	RTP	NHPP	Local Funding Sources	Local Option Sales Tax	System Development Charges/Developer Impact Fees	CID	NID	CIP Set Asides	Special Issue Bonds	Regional Funding Sources	St Louis County Municipal Parks Grant	GRG	Private Sector Funding Sources	Bikes Belong Grant Program	MFH	RWJF	Adopt-A-Trail/Adopt-A-Sidewalk	Community Fundraising	Corporate Partnerships
Forsyth Blvd		X	X	X	X		X	X				X	X	X	X	X	X					X			X	X	
Westgate Avenue			X	X	X		X	X				X	X	X	X	X	X					X			X	X	
Balson Avenue			X	X	X		X	X				X	X	X	X	X	X					X			X	X	
Oakbrook Lane			X	X	X		X	X				X	X	X	X	X	X					X			X	X	
Melrose Avenue			X	X	X		X	X				X	X	X	X	X	X					X			X	X	
Purcell Avenue			X	X	X		X	X				X	X	X	X	X	X					X			X	X	
Roberts Avenue			X	X	X		X	X				X	X	X	X	X	X					X			X	X	
Raymond Avenue			X	X	X		X	X				X	X	X	X	X	X					X			X	X	
Partridge Avenue			X	X	X		X	X				X	X	X	X	X	X					X			X	X	
Hazelwood Lane			X	X	X		X	X				X	X	X	X	X	X					X			X	X	
Kempland Place			X	X	X		X	X				X	X	X	X	X	X					X			X	X	
Fullerton Avenue			X	X	X		X	X				X	X	X	X	X	X					X			X	X	
Polk Avenue			X	X	X		X	X				X	X	X	X	X	X					X			X	X	
Vernon Avenue		X	X	X	X		X	X		X		X	X	X	X	X	X					X			X	X	
Midland Boulevard		X	X	X	X		X	X		X		X	X	X	X	X	X					X			X	X	
North & South Avenue		X	X	X	X		X	X		X		X	X	X	X	X	X					X			X	X	
McKnight Road		X	X	X	X		X	X		X		X	X	X	X	X	X					X			X	X	
Perhsing Avenue		X	X	X	X		X	X				X	X	X	X	X	X					X			X	X	
Pennsylvania Avenue		X	X	X	X		X	X				X	X	X	X	X	X					X			X	X	
Woodson Road		X	X	X	X		X	X		X		X	X	X	X	X	X					X			X	X	
Olive Boulevard		X	X	X	X		X	X		X		X	X	X	X	X	X					X			X	X	
Kingsland Avenue		X	X	X	X		X	X				X	X	X	X	X	X					X			X	X	
Clemens Avenue			X	X	X		X	X				X	X	X	X	X	X					X			X	X	
Sutter Avenue			X	X	X		X	X				X	X	X	X	X	X					X			X	X	
Jackson Avenue			X	X	X		X	X				X	X	X	X	X	X					X			X	X	
Ahern Avenue			X	X	X		X	X				X	X	X	X	X	X					X			X	X	
Purdue Avenue			X	X	X		X	X				X	X	X	X	X	X					X			X	X	
Old Bonhomme Road		X	X	X	X		X	X		X		X	X	X	X	X	X					X			X	X	
Swarthmore Lane			X	X	X		X	X				X	X	X	X	X	X					X			X	X	
81st Avenue			X	X	X		X	X				X	X	X	X	X	X					X			X	X	
Hafner Place			X	X	X		X	X				X	X	X	X	X	X					X			X	X	
82nd Boulevard			X	X	X		X	X				X	X	X	X	X	X					X			X	X	
Kingsland Avenue		X	X	X	X		X	X				X	X	X	X	X	X					X			X	X	
Ferguson Avenue			X	X	X		X	X				X	X	X	X	X	X					X			X	X	

BICYCLE & PEDESTRIAN PLAN
FUNDING SOURCES MATRIX

	Federal Funding Sources	STP	HSIP	TAP	CMAQ	Section 402	SRTS	TCSP	RTP	NHPP	**Local Funding Sources**	Local Option Sales Tax	System Development Charges/Developer Impact Fees	CID	NID	CIP Set Asides	Special Issue Bonds	**Regional Funding Sources**	St Louis County Municipal Parks Grant	GRG	**Private Sector Funding Sources**	Bikes Belong Grant Program	MFH	RWJF	Adopt-A-Trail/Adopt-A-Sidewalk	Community Fundraising	Corporate Partnerships
Groby Road			X	X	X		X	X				X	X	X	X	X	X					X				X	X
Northmoor Drive			X	X	X		X	X				X	X	X	X	X	X					X				X	X
Asbury Avenue			X	X	X		X	X				X	X	X	X	X	X					X				X	X
Maryland Avenue			X	X	X		X	X				X	X	X	X	X	X					X				X	X
Williams Avenue			X	X	X		X	X				X	X	X	X	X	X					X				X	X
Vassar Avenue			X	X	X		X	X				X	X	X	X	X	X					X				X	X
Kingsbury Boulevard			X	X	X		X	X				X	X	X	X	X	X					X				X	X
Yale Avenue			X	X	X		X	X				X	X	X	X	X	X					X				X	X
Stanford Avenue			X	X	X		X	X				X	X	X	X	X	X					X				X	X
Pennsylvania Avenue (south of Vernon)			X	X	X		X	X				X	X	X	X	X	X					X				X	X
Cornell Avenue			X	X	X		X	X				X	X	X	X	X	X					X				X	X
Blackberry Avenue			X	X	X		X	X				X	X	X	X	X	X					X				X	X
Wild Cherry Lane			X	X	X		X	X				X	X	X	X	X	X					X				X	X
Burr Oak Lane			X	X	X		X	X				X	X	X	X	X	X					X				X	X
Warder Avenue			X	X	X		X	X				X	X	X	X	X	X					X				X	X
Mt. Olive Avenue			X	X	X		X	X				X	X	X	X	X	X					X				X	X
Canton Avenue		X	X	X	X		X	X				X	X	X	X	X	X					X				X	X
Braddock Drive			X	X	X		X	X				X	X	X	X	X	X					X				X	X
Fullerton Avenue			X	X	X		X	X				X	X	X	X	X	X					X				X	X
Kempland Place			X	X	X		X	X				X	X	X	X	X	X					X				X	X
EDUCATION PROGRAMS			X	X	X	X	X	X				X					X					X	X	X		X	X
ENFORCEMENT PROGRAMS			X	X	X	X	X	X				X					X						X	X		X	X
ENCOURAGEMENT PROGRAMS			X	X	X		X	X				X					X					X	X	X		X	X
EVALUATION/PLANNING			X	X	X		X	X				X					X						X	X		X	X

Projects Extents

Appendix

Resolution 2013 - 17

A RESOLUTION ADOPTING THE BICYCLE AND PEDESTRIAN MASTER PLAN AS A SUPPLEMENT TO THE 2005 COMPREHENSIVE PLAN UPDATE

WHEREAS, a Bicycle and Pedestrian Master Plan was presented to the Plan Commission of the City of University City for consideration in accordance with the University City Charter, Section 62 which states that "*... The plan commission shall have the authority to prepare and submit to the council for its approval a master plan for the physical development of the city, including the general location, character and extent of streets, bridges, parks, waterways, and other public ways, grounds and spaces, together with the general location of public buildings and other public property, public utilities, and the extent and location of any public housing or slum clearance projects, and shall recommend such modifications of said plan, from time to time, as it deems in the city's interest..*" ; and

WHEREAS, a public hearing was held at the April 8, 2013 City Council meeting with public comments expressed and received; and

WHEREAS, at the same April 8, 2013 City Council meeting, the City Council passed a motion "to send the Draft Bicycle and Pedestrian Plan along with the comments from the just held Public Hearing and the comments from this Council back to the Plan Commission to be read, analyzed with regard to compliance with the Charter and University City Municipal policies, and considered for incorporation into the new Comprehensive City Plan that is in process of being developed"; and

WHEREAS, on August 27, 2013 the Plan Commission held a second public meeting that included wide public dissemination of the meeting notice as well as an Open House and distribution of a comprehensive set of questions and answers; and

WHEREAS, upon consideration of the public comments received, certain revisions have been made to the original Master Plan; and

WHEREAS, the Plan Commission, at their September 25, 2013 meeting, as the result of the review of the relevant sections of the City Charter of University City and University City Municipal Ordinances, unanimously voted to return the Revised Bicycle and Pedestrian Master Plan to the City Council with a recommendation that said plan be adopted as a supplement to the Comprehensive Plan Update of 2005; and

WHEREAS, the Plan Commission agrees to consider for incorporation the analysis and conclusion of the Revised Bicycle and Pedestrian Master Plan into the development of the next Comprehensive Plan Update.

NOW, THEREFORE, BE IT RESOLVED that the Bicycle and Pedestrian Master Plan, attached as Exhibit A, is hereby adopted as a supplement to the Comprehensive Plan Update of 2005 by the City Council of University City, Missouri.

BE IT FURTHER RESOLVED that the City Council of University City recognizes that its adoption of the Bicycle and Pedestrian Master Plan does not immediately commit City funds toward project implementation, and recommends that the City Manager explore funding opportunities for any relevant aspect of the Plan.

BE IT FURTHER RESOLVED that before a private subdivision is included with the implementation of the Bicycle and Pedestrian Master Plan, the City Manager will secure all necessary approvals from the trustees or other relevant authority associated with the impacted private subdivision.

BE IT FURTHER RESOLVED that the City Council of University City directs the City Manager to develop a priority and feasibility list of the bike/walk projects including accessible sidewalks for Council approval and implementation.

ADOPTED THIS 14th DAY OF OCTOBER, 2013.

Shelley Welsch

Shelley Welsch, Mayor

ATTEST:

Joyce Pumm

Joyce Pumm, City Clerk

PARKVIEW
HISTORIC NEIGHBORHOOD
Est. 1905

September 24, 2013

Richard Wilson, Director of Public Works and Parks
6801 Delmar
University City, MO 63130
Re: University City Bicycle & Pedestrian Plan

Dear Mr. Wilson:

We are writing on behalf of the property owners/residents and Agents of the Parkview Neighborhood regarding the proposed University City Draft Bicycle and Pedestrian Plan ("Plan"). Our neighborhood has many avid cyclists and we support the idea of a bicycle plan for University City in general, however we have significant concerns about the current Plan. These concerns in no way alter the goal of every UCity resident being within a five minute walk of a bike path as we all reside within that distance to the newly constructed path on Melville.

The current Draft of The Plan includes the designation of Waterman Boulevard in Parkview as a Bike/Walk Street. Bike/Walk Streets are described in the plan as: "Also known as 'bicycle boulevards', these are shared-use streets that give preference to bikes over vehicular traffic. They are indicated with markings, signage, and optional traffic calming devices."

As you are aware, Parkview is a Private Subdivision and a National Historic Neighborhood. The legal ownership and use of the streets in Parkview is rather complex. Each homeowner's property extends to the middle of the street on which their home is situated. Every owner/resident of the neighborhood has an easement granted in their favor for the use and enjoyment of the streets, sidewalks and alleys by each property owner.

The Board of Agents of Parkview is an elected group of neighbors with powers limited by the 1905 Indenture that runs with the land. The Agents do not have the authority to grant permission for the use of any street, sidewalk or alley of Parkview as a Bike/Walk Street. This permission could only be granted by the residents of Parkview by a vote of the entire neighborhood with 2/3 majority voting in favor of such designation.

P.O. Box 300518, St. Louis, Missouri 63130

The potential designation of Waterman, or any other street in Parkview as a Bike/Walk Street raises significant issues. The first major issue is liability. While The Plan calls for University City to take over maintenance and liability of the bike/walk path, they cannot take ownership of a private street and thus the residents of Waterman, the Neighborhood and the Parkview Agents remain potentially liable for any injury to persons or property.

The second issue is the congestion on Waterman. Of all the five streets, Waterman is the most travelled. Due to the lack of driveways, street parking is essential. This is one reason we do not plow our streets. University City would be required to plow Waterman creating more difficulty for the residents. The presence of so many cars parked on Waterman normally limits two-way traffic. Westbound cars must pull to the side for eastbound and vice versa. Adding a flow of bikes to this would not be safe.

Further, the stretch of Waterman suggested flows from University City to the City of St. Louis. This creates a number of maintenance issues for the Neighborhood. A detailed maintenance agreement would need to be presented to the residents. If University City opted to maintain both the 6200 and 6300 blocks of the Path, that again creates issues for the remainder of our streets.

It is possible that an alternate route through Parkview might reduce the congestion issue, but the path/street maintenance and liability issues remain concerns.

Since the announcement of the Bicycle/Pedestrian Plan, we have been contacted by residents of Waterman and Westgate with concerns about traffic flow, restricted access, liability, safety, quiet enjoyment and property values.

Based on these concerns and your assurances at the August 27th meeting that no private street will be included in the Plan without their consent, we request that no streets in Parkview be designated as, considered for designation as, or be shown as such on any future Plan or Draft Plan, without the legally appropriate consent of the property owners/residents of Parkview.

Thank you for your anticipated consideration and cooperation in this matter.

Sincerely,

Mary Broun, President Parkview Agents
mbbroun@sbcglobal.net

Lee Lawless, Vice-President Parkview Agents

Cc: University City Plan Commission
Stephen Kraft, City Council First Ward
Terry Crow, City Council First Ward
Ann Rivers Mack, Trailnet

City of University City

Public Works and Parks
6801 Delmar Boulevard, University City, Missouri 63130, Phone: (314) 505-8560, Fax: (314) 862-0694

October 7, 2013

Ms. Mary Broun, President Parkview Agents
Lee Lawless, Vice President Parkview Agents
PO Box 300518
St. Louis, MO 63130

Dear Ms. Broun and Mr. Lawless;

I have received your letter dated September 24, 2013 requesting Parkview Neighborhood to be removed from the University City Walk and Bike Plan.

We will include your letter in the final draft of the report as well as remove your section of the bike path from the plan. To spend City funds wisely, we will not make any changes to the map until all subdivisions have had a chance to weigh-in. And as we move forward with the new Comprehensive City wide plan, there may be more changes to come.

If at some time in the future, you would like to sit down and discuss the various issues you brought up, we would be glad to set aside some time. If you have any questions, please let me know.

Sincerely,

Richard L. Wilson PE
Director

CC: Mr. Lehman Walker
Mr. Stephen Kraft
Mr. Terry Crow
Ms. Lynnette Hicks
Ms. Ann Rivers Mack

APPENDIX
Case Studies

BICYCLE PLAN 2030
Portland, Oregon

CASE STUDY OVERVIEW

OBJECTIVES
- Equity Analysis: Residents within ¼ mile of a bikeway
- Bicycle Network: ~400 miles of developed bicycle trails and boulevards
- Support local economy

DESIGN ELEMENT
- **Bicycle Boulevards**

OUTCOMES
- More than 50% of residents within ¼ mile of a bikeway after build-out
- Nearly 300 miles of bike network developed
- 2007: Bicycle network contributed $90 million to local economy and employed 1,150 people

IMPLEMENTATION TOOLS

JARC Program (Federal Program)
- "Job Access and Reverse Commute"
- Portland's "Create a Commuter"
  - Bicycle availability
  - Bicycle infrastructure
  - 10% of funds used for planning
- Eligible Recipients: states and public bodies, private non-profit organizations, and local governments.

CMAQ (Federal Program)
- **"**Congestion Mitigation /Air Quality" Improvement Program
- Funds bicycle/pedestrian paths and facilities to reduce motor vehicle dependence

CITY OF UNIVERSITY CITY FEASIBILITY

JARC Program (Federal/State)
- Match funding from U.S. Department of Labor Workforce Investment Act
- Creates opportunities for residents to safely get to work
- Example: Southeastern Missouri's "Missouri Goes to Work" program
- Use funds to connect eligible areas to MetroBus & MetroLink

MFH (State)
- "Missouri Foundation for Health"
- ***Example: PedNet Coalition recipient of a $300,000 grant to construct accessible bicycle paths that connect to regional ADA-accessible trails and improve existing conditions***

BICYCLE TRANSPORTATION PLAN 2000

Madison, Wisconsin

CASE STUDY OVERVIEW

OBJECTIVES

- Increase bicycle storage and parking
- The "5 E's"
  - *Education*
  - *Encouragement*
  - *Enforcement*
  - *Engineering*
  - *Education*
  -
- Bicycle-friendly development and street design

DESIGN ELEMENT

- **Bicycle parking/storage facilities**

OUTCOMES

- Bicycle parking and storage for both trip origin and destination points now included in Transportation Master Plans (TMPs)
- Comprehensive design criteria successfully implemented
- 7.6% increase in new bicycle commuters
- Decrease in annual bike crashes

IMPLEMENTATION TOOLS

WisDOT SMIP (State)

- "Statewide Multi-Modal Improvement Program"
- Funds allocated to bicycle and pedestrian paths and maintenance

STP (Federal)

- "Surface Transportation Program"
- Used for:
- bicycle/pedestrian facilities
- planning
- education programs

CITY OF UNIVERSITY CITY FEASIBILITY

MO STIP (State)

- "Missouri Statewide Transportation Improvement Program"
- Funding for non-motorized transportation

MARC STP (State)

- "Mid-America Regional Council's Surface Transportation Program"
- ***Example: Vivion Road Enhancement (U.S. 69), Riverside, MO: Connecting residential areas to nearby parks***
- Includes bicycle and pedestrian paths and wide medians

APPENDIX
Case Studies

TRANSPORTATION MASTER PLAN

Boulder, Colorado

CASE STUDY OVERVIEW

OBJECTIVES
- Complete Streets implementation
- Safe Routes to School initiative
- Inviting and safe urban design

DESIGN ELEMENTS
- **Complete Street design**

OUTCOMES
- 23% of commuters bicycle to work
- 32 miles of new sidewalks
- SOV decrease 19.2%
- 12 public and 4 private schools participate in Safe Routes To School (SRTS)
  - Award for involving 70% of students in biking and walking activities

IMPLEMENTATION TOOLS

CDOT (State)
- "Colorado Department of Transportation"

SAFETEA-LU (Federal)
- "Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users"

CITY OF UNIVERSITY CITY FEASIBILITY

MAP-21 (Federal)
- "Moving Ahead for Progress in the 21st Century"
- Replaces former SAFETEA-LU funding programs

TAP (Federal)
- "Transportation Alternatives Program"
- The TAP replaces the funding from pre-MAP-21 programs including Transportation Enhancements, Recreational Trails, Safe Routes to School, and several other discretionary programs, wrapping them into a single funding source.
- An amount equal to 2% of the total amount authorized from the Highway Account of the Highway Trust Fund for Federal-aid highways each fiscal year (FY) is to be reserved for the TAP.

MoDOT (State)
- Contribute funds to Complete Streets

MFH (State)
- Missouri Foundation for Health
- ***Example: Jefferson County Health Department awarded $159,661 to fund Complete Streets***

Grants (National)
- ***Example: Active Living by Design developed "Walking School Buses" in Columbia, MO***

APPENDIX

Programming Opportunities

Creating a bicycle and pedestrian-friendly community requires a holistic approach, of which physical improvements are just one component. Education, encouragement, and enforcement programs play a vital role in changing the way people move about their community. In addition to developing programs and activities through the Public Works and Parks Department, the Community Development Department, which houses the Recreation Department, responsible for all recreation programs, the City should reach out to develop partnerships with agencies, organizations, institutions, and associations already present in the community. This section of the plan details current activities underway in University City to support healthy and active lifestyles and safer environments for walking and biking; summarizes community input regarding programming opportunities for education, encouragement, and enforcement; and provides potential programs for University City to pursue.

CURRENT PROGRAMS AND ACTIVITIES

The City of University City has for years offered a variety of recreational programs and facilities to provide residents with opportunities for healthy and active living. With 17 parks, 15 ball diamonds, 10 soccer and football fields, 15 play equipment areas, the Heman Park Swimming Pool, the Community Center, and the Centennial Commons Recreational Facility, University City provides an abundance of recreational facilities for residents and visitors. The variety of recreational facilities allows the City to provide a diverse range of programs and activities, including youth summer recreation programs, teen activities programs, personal and group training sessions, senior fitness classes, and many more. With the development of an on-street bicycle facility network and improvements to the pedestrian environment, the City can expand its health and fitness-related offerings through programs designed to encourage residents to choose active transportation—walking, cycling, and public transit—to reach destinations in and around the community.

COMMUNITY INPUT

Throughout the planning process, community members shared their thoughts regarding programs that support, walking, bicycling, and active living through the online plan survey. A number of questions in the survey related to potential education, encouragement, and enforcement programs. While individual responses varied considerably,

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Programming Opportunities

Potential Education, Encouragement and Enforcement Programs	
Program	**Average Score (5 = highest score; 1 = lowest)**
Programs that encourage children to walk and bike to school.	4.05
Greater police enforcement of motor vehicle, bicycle and pedestrian laws.	3.71
Education programs that teach residents and businesses the benefits of walking and bicycling.	3.29
Education programs that teach children basic cycling skills.	3.77
Education programs that teach adults basic road cycling skills.	3.40
Programs that encourage residents to walk and/or bike to local businesses.	3.89
Programs to improve motorist awareness of cyclists, pedestrians and other road users.	4.24

there were a number of programs and ideas that received significant positive support. The table above represents average scores various programming opportunities and their potential effectiveness in the community. Motorist awareness campaigns, Safe Routes to School programs, programs to encourage residents to walk and bike to local businesses, and bicycle education courses for children were the program opportunities that received the greatest positive feedback from survey respondents.

POTENTIAL PROGRAMS

Building on the feedback received in the online community survey and gathered at the public workshops, this section of the plan introduces education, encouragement, and enforcement programming opportunities that can have a significant impact on residents', visitors', and area employee's transportation choices.

PEDESTRIAN & BICYCLIST AWARENESS PROGRAMS/CAMPAIGNS: One of the most challenging barriers to walking and cycling is the potential conflict between automobiles and other road users. High vehicle speeds, heavy traffic volumes, and a perceived lack of respect and consideration for pedestrians and cyclists prevent many residents from walking and cycling to local destinations. The City should consider developing pedestrian and bicyclist awareness campaigns in partnership with local, regional and state entities. Awareness campaigns may

Programming Opportunities

INFORMATIONAL DOOR HANGERS

consist of the distribution of educational brochures and pamphlets, the development of print, online, and television media, targeted enforcement of motor vehicle regulations in and around areas of high pedestrian and cyclist activity, and other targeted activities to calm traffic and improve cooperative and courteous behavior among all road users. Potential partners may include the following: St. Louis County Highways and Traffic and the Missouri Department of Transportation, who own and maintain arterial and collector roadways within the City Limits; University City School District; private schools; Loop Special Business District; Olive Business District; neighborhood associations; and other individual businesses and institutions.

NEIGHBORHOOD PACE CAR PROGRAM: A growing number of cities across the country have taken a unique approach to traffic calming: the neighborhood pace car program. Through this program, residents that have pledged to act as pace cars drive slowly and safely, give way to pedestrians and cyclists, and set a standard of respect and behavior for other automobile drivers to follow. Neighborhood pace car programs, most often administered by the local government agency, consist primarily of informational brochures, a dedicated webpage to provide information and updates, and bumper stickers to be adorned by participating pace cars. Links to sample neighborhood pace car programs are provided at the end of this section of the plan.

PROJECT OUTREACH: As new bicycle facilities are constructed, it is important to reach out to adjacent residents, business owners, and other important stakeholders to impart the benefits of active transportation infrastructure, to provide educational material, and to encourage facility usage. Shared lane markings, dedicated bicycle lanes, and other bicycle facility elements will bring changes to the transportation network that few have seen or experienced. Outreach efforts will be an integral component of any new bike facility project and can positively influence the community's perception and usage of these new facilities. The City should consider the use of pamphlets, direct mailings, and door hangers to provide information about new projects and encourage residents to walk and bike for local trips.

SAFE ROUTES TO SCHOOL PROGRAMS: In 1969, 42 percent of all students from grades 1 through 12 walked

APPENDIX
Programming Opportunities

or biked to school, and 49 percent of elementary school students walked or biked.[1] By 2001, less than 15 percent of all trips to school were made on foot or bike, with more than half of students arriving by private automobile (up from 16 percent in 1969).[2] In an effort to reverse this trend, the Federal Highway Administration initiated the Safe Routes to School Program (SR2S) in 2005. The objective of SR2S is twofold, focusing on infrastructure improvements in school areas and on behavioral programs to increase the number of children walking and biking to school.

Local schools and school districts throughout the St. Louis Metropolitan Area have incorporated Safe Routes To Schools Programs in an effort to promote physical activity for school children. Walking School Busses, Bike Trains, Bike Safety Rodeos, and other events are designed to encourage children (and their parents) to walk and bike to school rather than driving. Some schools have even designated drop-off locations for children who live too far from school to walk to join other walkers on their way to school. In University City, the only school currently involved in any formal Safe Routes To School Program is Christ the King Catholic Elementary School on Balson Avenue. After taking part in two International Walk To School Day events, dedicated parents and school staff created Walking Wednesdays to encourage children and families to walk to school. Students who live too far to walk can join a large group of Christ the King families that meet at Jackson Park on Wednesdays mornings to walk to school. Students can also walk during recess and receive a stamp for their "Walkin' Wednesday" card.

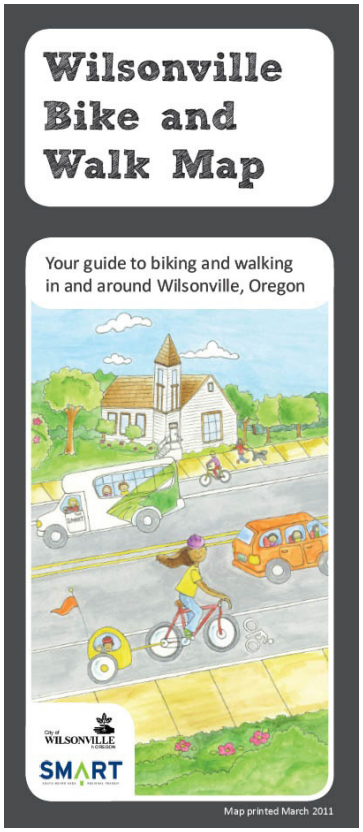
While many children in University City already walk and, to a lesser extent, bike to school without any formal education or encouragement program, the impact of such a program could have a substantial impact on school children's health and physical fitness, on motor vehicle congestion, and on carbon emissions. The City of University City should engage the University City School District and local private schools to explore opportunities to increase children walking and cycling to school.

Trailnet, a local non-profit working to foster healthy and active communities throughout the St Louis Metropolitan Area through planning, policy, and programs that promote walking and bicycling, has partnered with communities and school districts in St. Louis County to develop Safe Routes to School programs. Through parent and school

SAFE ROUTES TO SCHOOL EVENT

[1] "Transportation Characteristics of School Children," Report No. 4, Nationwide Personal Transportation Study, Federal Highway Administration, Washington, DC, July, 1972.
[2] Federal Highway Administration, National Household Travel Survey, 2001.

Programming Opportunities



district trainings, Walk To School Day events, Walking School Busses, Bike Trains, and other events, Trailnet has helped over a dozen schools establish, grow and sustain Safe Routes to School programs that have made a lasting impact on local school travel patterns and children's health.

COMMUNITY-WIDE BICYCLE AND PEDESTRIAN MAP: Cyclists' and pedestrians' travel patterns differ from motorists' and are influenced by a variety of factors, including perceived safety, comfort, efficiency, familiarity, and aesthetics. Many would-be cyclists and pedestrians are intimidated by a lack of knowledge of the best routes for walking and cycling to local destination. A map for cyclists and pedestrians can familiarize residents and visitors alike with the preferred routes to destinations throughout the community and encourage walking and cycling as viable transportation options. A community-wide map can have many benefits beyond simply encouraging cycling and walking activity. It can also help to highlight public and private destinations in and around the community, encourage patronage of local businesses, direct residents and visitors to newly developed bicycle and pedestrian infrastructure, and integrate other programming content and information, like bicycle safety tips, for electronic and print distribution.

SHOP BY BIKE/FOOT PROGRAM: Shop by Bike and Shop by Foot programs encourage residents to walk and/or bike to local businesses for short daily trips. Forty percent of all travel trips in the United States are two miles or less, a distance that can be comfortably covered on foot or bicycle; yet 74 percent of these trips are made by automobile.[3] Shop by bike and shop by foot programs can help to reduce automobile congestion, lower carbon emissions, improve individual health, and support local businesses. University City should explore opportunities to create such a program with area businesses, the Loop Special Business District, and the Olive Business District. Similar programs across the United States often include an incentive program that rewards customers arriving on bike and foot with discounts, small gifts, and similar benefits.

BICYCLE-FRIENDLY BUSINESSES PROGRAM: Creating a bicycle-friendly community is not limited to actions of local government, residents and advocacy groups. Local businesses can take a number of steps to cater to and improve access for cyclists; however, most businesses are unaware of the resources available to increase

[3] Federal Highway Administration, National Household Travel Survey, 2001.

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conditions for cyclists. A Bicycle Friendly Businesses Program generally functions in two important ways. First and foremost, by providing the resources, information, best practices, and, in some cases, incentives, to help local businesses create an environment that supports cycling. This can be done by providing safe and secure bicycle parking for customers and employees, developing incentive programs to encourage employees to bike to work, and distributing commuter education materials to employees. By improving conditions in and around their businesses and incentivizing bicycle ridership, local businesses are not just creating opportunities for a greater diversity of customers, but also increasing cycling throughout the community, contributing to the community's desire to weave walking and cycling into the fabric of the community.

In the St. Louis Region, Trailnet works with businesses and community groups though the TravelGreen Program to encourage commuter cycling and help local businesses develop policies, environments, and social networks that embrace alternative transportation. This growing program incorporates Bike To Work Day events, Breakfast for Bikers events, and the Shift Your Commute website (*www.shiftyourcommute.com*) to support businesses and employees as they seek to incorporate bicycle commuting into their daily routines.

SENIOR BIKING AND WALKING PROGRAMS: In 2009, an estimated 16 percent of the City's population (5,679 of 36,577) was 65 years or older.[4] Walking and biking programs can help this segment of the population maintain healthy and active lifestyles and retain their transportation independence. Whether through weekly group walks, organized bicycle rides, placing walking and bicycling maps at senior centers, or targeted infrastructure improvements, these programs can have a lasting impact on the health and quality of life of the community's senior population.

YOUTH AND ADULT BICYCLE EDUCATION: Many University City residents have stated their desire to incorporate cycling into their daily routines, but cite high traffic volumes and traffic speeds on busier arterial roads as significant deterrents to cycling throughout University City. Training courses can provide both youth and adult bicycle riders with the basic knowledge, skills and confidence necessary to safely and successfully navigate the variety of roadway conditions present throughout the City. There are currently a number of different bicycle shops

TRAILNET BIKE SMART CLASS

[4] U.S. Census Bureau: 2005-2009 American Community Survey. Retrieved November 1, 2011, from http://factfinder.census.gov.

CREATE-A-COMMUTER BIKE PROGRAM

and local organizations that teach on-road cycling classes, including the Alpine Shop, REI, and Trailnet. The City should seek to partner with a local bicycle shop or an organization like Trailnet, whose new BikeSmart classes prepare area residents with the skills and confidence to bike in a variety of situations.

Another approach to youth cycling instructions is to incorporate basic cycling skills as part of the physical education curriculum in local schools. Although there is no single authoritative guide or curriculum for bicycle education (or youth pedestrian education, for that matter) there are a number of outstanding models and resources to help local communities prepare children of various ages to become safe and responsible cyclists. The Safe Routes To School National Partnership has developed a comprehensive report on the subject, detailing federal efforts, the European model for youth bicycle education, existing programs and curricula, and other important considerations. Another useful resources for both adult and youth bike education is the Bicycle Safety Education Resource Center, developed by the Federal Highway Administration and maintained online by the Pedestrian and Bicycle Information Center. The Bicycle Safety Education Resource Center is an online repository of information that includes the Federal Highway Administration's National Bicycle Safety Education Curriculum Project, the Good Practices Guide For Bicycle Safety Education, and the Resource Database, which guides users to targeted information based on target audience and topic.

LAW ENFORCEMENT TRAINING: Law enforcement can play a significant role in creating safe public spaces for all road users through warnings, ticketing, and increasing public awareness of the rights and responsibilities for motorists, cyclists, and pedestrians. The City should seek additional training for law enforcement officers relating to cyclist, pedestrian, and motorist interactions and proper usage of the public rights-of-way.

"CREATE A COMMUTER" BIKE PROGRAM FOR ADULTS: Many residents of University City rely on walking, cycling and public transportation to access employment, shopping, and other basic necessities on a daily basis. 2000 US Decennial Census data shows that over 11% of households in University City (and nearly 19% of renter-occupied households).[5] In addition, nearly 10% of the work force 16 years or older used public transportation, biked, walked to get to work, even when some had a private vehicle available.[6] For some, it is a choice. For others,

[5] U.S. Census Bureau: 2000 Decennial Census, Summary File 3. Retrieved April 27, 2011, from http://factfinder.census.gov.

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it is a necessity. To ensure that all residents of University City have access to employment opportunities, the City should consider establishing a create-a-commuter program to provide low-income residents with bicycle maintenance and on-road skills training, as well as a fully equipped commuter bicycle. Such a program would ensure that low-income residents have a reliable means of transportation to retain and/or find employment. Similar programs have been established in Portland, with funding provided in part by the Federal Highway Administration's Job Access Reverse Commute Program, which focuses on improving job-related transportation for low-income members of the community.

The programs described above are just a starting point for University City. As the City continues improve access to and opportunities for active living throughout the community, other opportunities may arise to incorporate walking and bicycling into the community's social fabric. There are a number of resources available that describe successful programs undertaken by local government agencies and non-profits in North America.

LINKS TO ADDITIONAL INFORMATION AND RESOURCES

GENERAL RESOURCES

Pedestrian and Bicycle Information Center (PBIC)
http://www.pedbikeinfo.org/
PBIC's Case Study Compendium
http://www.walkinginfo.org/case_studies/
Federal Highway Administration's Bicycle and Pedestrian Program
http://www.fhwa.dot.gov/environment/bikeped/
Federal Highway Administration's Safety Program
http://safety.fhwa.dot.gov/
Trailnet, Inc.
http://trailnet.org/
Missouri Bicycle and Pedestrian Federation

[6] U.S. Census Bureau: 2000 Decennial Census, Summary File 3. Retrieved April 27, 2011, from http://factfinder.census.gov.

http://www.mobikefed.org
Missouri Department of Transportation's Bicycle and Pedestrian Program
http://www.modot.mo.gov/othertransportation/bicyclepedestriangeneralinformation.htm
America Walks
http://americawalks.org/

NEIGHBORHOOD PACE CAR PROGRAM
Washington, D.C.
http://www.waba.org/education/about_pace_car.php
Springfield, MO
http://www.springfieldmo.gov/traffic/pacecar.html
Davis, CA
http://cityofdavis.org/police/pacecar/

SAFE ROUTES TO SCHOOL
National Center for Safe Routes to School
http://www.saferoutesinfo.org/
Safe Routes to School National Partnership
http://www.saferoutespartnership.org/
PBIC's Safe Routes to School Guide
http://guide.saferoutesinfo.org/
FHWA Safety Program – Safe Routes to School
http://safety.fhwa.dot.gov/saferoutes/

SENIOR BIKING AND WALKING PROGRAM
New York, NY
http://www.transalt.org/campaigns/pedestrian/safeseniors
Portland, OR

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http://www.portlandonline.com/TRANSPORTATION/index.cfm?c=eafeg
http://www.streetfilms.org/archives/portland-or-older-adults-bike-program/ (video)

YOUTH AND ADULT BICYCLE EDUCATION

Bicycle Safety Education Resource Center
http://www.bicyclinginfo.org/education/resource/fhwa.html
Trailnet's Bike Smart Program
http://www.trailnet.org/our-work/travelgreen
PBIC's SRTS Guide – Bike Education Section
http://guide.saferoutesinfo.org/education/resources.cfm
League of American Bicyclists
http://www.bikeleague.org/programs/education/index.php
Safe Routes to School National Partnership's Bicycle and Pedestrian Curricula Guide: Making the Case for Bicycle and Pedestrian Youth Education
http://www.saferoutespartnership.org/publications/CurriculaGuide

CREATE A COMMUTER BIKE PROGRAM FOR ADULTS

Oakland, CA
http://www.cyclesofchange.org/programs/bike-go-round
Portland, OR:
http://www.communitycyclingcenter.org/index.php/programs-for-adults/create-a-commuter/

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