



2040 Long-Range Transportation Plan Executive Summary

Columbia Area Transportation Study Organization (CATSO)

Approved by the CATSO Coordinating Committee February 27, 2014

Executive Summary

Introduction

Transportation planning in the Columbia area has enjoyed a long history beginning with the adoption of “A City Plan for Columbia, Missouri” in 1935. The first Major Thoroughfare Plan depicting the location of future roadways in Columbia and Boone County was developed by the Columbia Area Transportation Study Organization (CATSO) in 1968.

For more than two decades, CATSO has maintained the Long-Range Transportation Plan (LRTP) for the Columbia Metropolitan Area. Federal regulations require the plan to be updated not less frequently than every five years, and it must look forward at least 20 years. The LRTP must include both long-range and short-range strategies/actions that lead to the development of an integrated multimodal transportation system to facilitate the safe and efficient movement of people and goods by addressing current and future transportation demand.

This plan, the 2040 LRTP, updates the previous plan, the 2030 LRTP, by serving as a blueprint to guide the CATSO region’s transportation development over the 27-year planning period. The plan uses population and employment projections, maps and lists of existing and recommended future facilities, and financial details for transportation improvements throughout the Columbia Metropolitan Area to present a fiscally-constrained portrait of transportation needs and priorities over the planning horizon.

The CATSO Metro Area Profile

The 181 square mile CATSO Metro Area is geographically centered and wholly contained within Boone County, Missouri. 99% of the City of Columbia municipal boundary is contained within the Metro Area. 82.7% of Boone County residents live within the CATSO Metro boundary.

The CATSO Metro Area had 134,592 residents at the time of the 2010 Census. The region has historically experienced a fast rate of population growth. From 2000 to 2010, the Metro Area population grew by 30,479 people and 29.3%. Using projection methods based upon trend data (described in Section 2.1), CATSO anticipates a Metro Area population of 210,378 people in 2040, a growth of 75,775 people over the planning horizon. Such growth has a major impact on congestion, infrastructure capacity, livability con-

siderations, and financial resources.

In addition to street network needs, the LRTP explores multimodal solutions for the Metro Area’s transportation system needs, addressing transit, bicycling and walking facilities. The LRTP’s multimodal emphasis also addresses those persons who may have special transportation needs or may be under-represented in the transportation planning process. Within the Metro Area, roughly one in five people live in poverty, one in ten has a disability, one in fifty lives in a zero-car household, two in 25 speak a language other than English at home, and one in five is a minority.

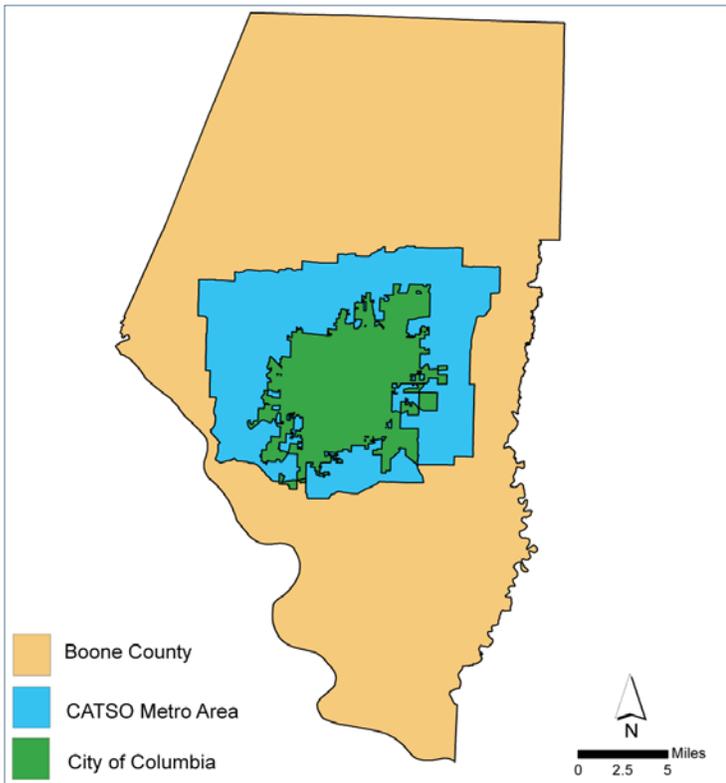
The majority of the local population—approximately 61%—is between ages 20-59. This distribution puts the majority of the local population in the prime working years of a person’s life. However, the population of school age children and retirees/seniors living in the city has steadily increased since 2000. School-age children (ages 5-19) and retirees/seniors (ages 65 and over) have grown 18 and 27 percent, respectively, during the past 10 years.

Much of Columbia’s working population is heavily reliant on automobile travel. In the Columbia Metro Area, driving alone to work is the predominant type of work trip (76.7%), followed by carpooling (12.3%), bicycling or walking (6.8%), working at home (3.0%), and public transportation (0.9%). The average commute time in Boone County is 18.4 minutes, and 16.6 minutes in Columbia across all modes (2010 U.S. Census).

Within the Metro Area, there are approximately 1,123 total miles of public roadway of all categories. Roughly 42% of the miles of public roadway in the Metro Area are included in the CATSO Major Roadway Plan shown on page 3 (most local residential and local non-residential streets are not included in the plan). The majority of roads maintained by the City of Columbia and Boone County, approximately 60% and 63% respectively, are categorized as local roads.

Boone County maintains approximately 26% of all of the street miles in the Metro Area, the City of Columbia maintains approximately 51% of the street miles, and the State of Missouri maintains approximately 23% of street miles, many of these being highway miles (including I-70).

The Columbia Area Transportation Study Organization (CATSO) was created in 1964 and designated as a Metropolitan Planning Organization (MPO) by the Governor of Missouri. Along with the MPO designation comes access to federal funds for street and bridge improvement projects as well as a responsibility to perform transportation-related planning in accordance with the federal “3-C” process of continuous, cooperative and comprehensive planning. CATSO’s planning partners are the City of Columbia, Boone County, and the Missouri Department of Transportation (MoDOT).



Public Involvement

CATSO is committed to ensuring that citizen input figures prominently in the LRTP update process. The 2040 LRTP was developed through an extensive public outreach process which directly reached out to 150 stakeholder organizations and thousands of individuals via press releases and display ads, social media, meetings and email listservs. The CATSO Technical and Coordinating Committees oversaw and guided the outreach efforts and plan drafts, and three public meetings (two of which were public hearings) were held by the Coordinating Committee, culminating with the LRTP's adoption at the February 27, 2014 CATSO Coordinating Committee meeting. Federal Transit Administration (FTA), Federal Highway Administration (FHWA), and Missouri Department of Transportation (MoDOT) staff also provided assistance on public outreach efforts and plan development by meeting monthly with CATSO staff, reviewing the public input, and commenting upon each plan draft.

In addition to the public meetings held by CATSO, extensive public input was gathered through two online surveys and in person at Bicycle and Pedestrian, Disabilities, Energy and Environment and Railroad Advisory Commissions, and other public and stakeholder meetings. A dedicated 2040 LRTP update webpage was developed to house pub-

www.fmcsa.dot.gov



MOVING AHEAD FOR PROGRESS IN THE 21ST CENTURY

Transforming the way we build, maintain and manage our Nation's commercial transportation system

Moving Ahead for Progress in the 21st Century Act (MAP-21), which was signed into law in July 2012, is the current national transportation legislation providing the guiding principles behind transportation decision-making throughout the United States in metropolitan areas. MAP-21 reaffirms the requirement that the metropolitan areas carry out a transportation planning process that considers the following eight Planning Factors:

- 1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.*
- 2. Increase the safety of the transportation system for motorized and non-motorized users.*
- 3. Increase the security of the transportation system for motorized and non-motorized users.*
- 4. Increase the accessibility and mobility options available to people and for freight.*
- 5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns.*
- 6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.*
- 7. Promote efficient system management and operation.*
- 8. Emphasize the preservation of the existing transportation system.*

lic input surveys, information regarding public participation and engagement opportunities, plan drafts, and other key information 24-7 throughout the planning process (www.gocolumbiamo.com/community_development/planning/boards_and_commissions/catso/2040Plan.php). The City of Columbia also hosted an announcement inviting the public to participate in the LRTP update. In the course of the nearly year-long update process, more than 500 individual public input comments from more than 100 individuals and two dozen groups were incorporated in the adopted 2040 LRTP.

"Columbia and central Missouri, a growing urban community, will have a modern transportation system, which allows its citizens to move about freely within the region using whatever means are desired – automobile, bus, bicycle, walking – and to do so safely, within a reasonable time frame, and without encountering needless congestion."

--Vision Statement, Transportation Citizen Topic Group, Imagine Columbia's Future (2007)

The priorities, needs, goals and objectives for the Columbia Metro Area were identified through public input and the following sources: cohort land use and transportation plans, CATSO’s planning partners’ planning documents, and local, state and federal initiatives and policies.

The process by which the plan’s goals and objectives were developed is represented in the graphic below and de-

scribed in detail in sections 6.2-6.4 of the plan.

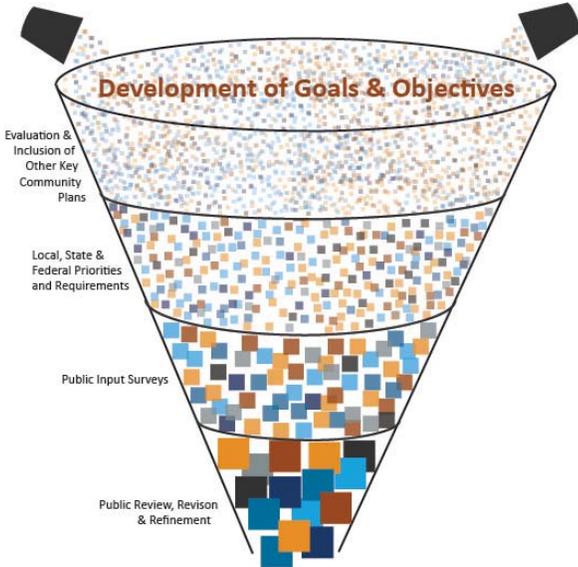
Overall, common themes were strengthening the non-motorized components of the system, reducing traffic congestion and accidents, enhancing commuter options, improving existing infrastructure, improving public transit, and focusing on a comprehensive transportation system for the region. New plan recommendations include policies to track and reduce Vehicle Miles Traveled (VMT) within the Metro Area, adoption of a Major Roadway Plan scenic roadway classification, and adoption of a complete streets policy for roadway design.

These goals and objectives are presented on the opposite page (page 4).

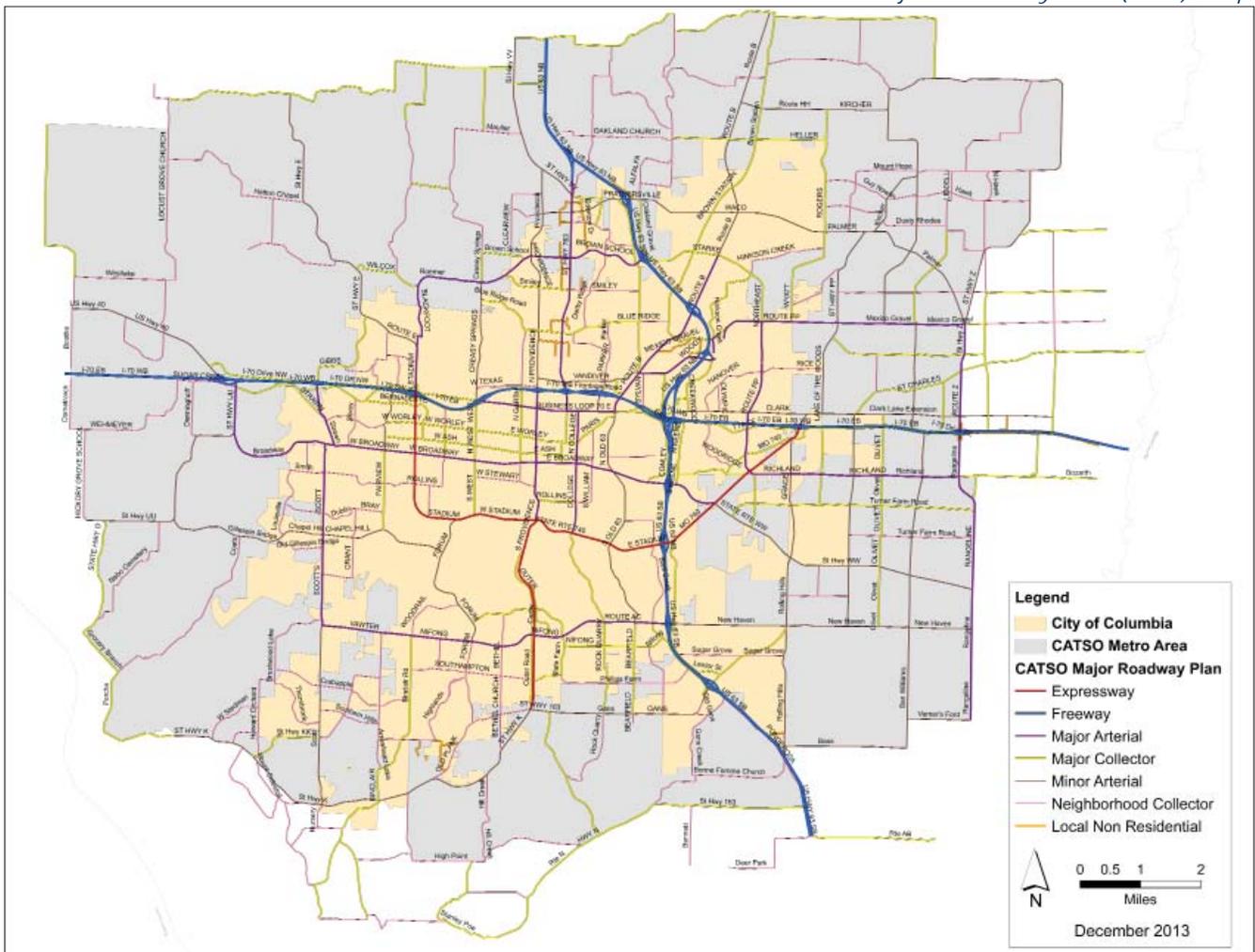
Major Roadway Plan (MRP)

The Major Roadway Plan (MRP) is a major component of the LRTP as roads are the primary feature of the CATSO area transportation network. The MRP identifies the major roadways in the metro area and provides a functional designation based upon future needs and function; proposed new roads are also shown with a generalized alignment.

The MRP map is shown below.



Major Roadway Plan (MRP) Map



Goals and Objectives

The 2040 Long Range Transportation Plan, Section 6.5, describes Goals and Objectives for Transportation Planning in the Columbia Metro Area as follows:

Goal 1: The Columbia Metro Area will have a first class street, highway and non-motorized network that meets the short and long-term needs of the Metro area

Objective 1: Design streets and highways that are safe and efficient to move vehicular traffic, accommodate transit, pedestrians and bicyclists with minimal environmental impacts.

Objective 2: Invest in and preserve the existing transportation system

Objective 3: Support an open, inclusive and participatory transportation planning process

Objective 4: Identify and address the needs of minority and low-income populations in making transportation decisions

Goal 2: The Metro Area transportation system will integrate and connect all travel modes

Objective 1: Encourage convenient intermodal transfers to maximize travel efficiency

Objective 2: Encourage the use of the most efficient mode based upon the distance and characteristic of a particular trip

Objective 3: Reduce reliance on automobile travel and better serve those who do not or cannot own and drive an automobile

Objective 4: Improve and expand infrastructure for pedestrians, bicyclists and people with disabilities

Goal 3: The public transportation system will be a viable transportation option throughout the Metro Area

Objective 1: Promote a mobility management public transportation system whereby all providers of public transportation work together to maximize efficiency and resources

Objective 2: Support and promote the public transportation system

Objective 3: Expand and redesign the existing transit system to meet ridership needs

Goal 4: Long-range land use and transportation planning will be coordinated on a regional and local basis

Objective 1: Establish policies and programs to reduce travel demand

Objective 2: Develop a long-range plan for the establishment of commuter transportation systems serving the metro area

Objective 3: All planning partners will address multimodal system and safety needs in all planning, design, and construction of transportation improvements

Objective 4: Capitalize on common goals and needs in the region to reduce costs and promote efficiency in transportation improvements

Objective 5: Accommodate increased freight movement and increase efficiency throughout the region

Objective 6: Promote rail as a viable option for freight and passenger movement throughout the region

Goal 5: Encourage compact and infill development and redevelopment in under-invested areas

Objective 1: Focus on capacity improvements for all modes in areas of desired future growth and development that support the public's vision for the metro area

Objective 2: Seek to eliminate/reduce current congestion and multimodal traffic flow restrictions on existing arterial and collector roadways

Objective 3: Develop and modify the transportation system to respect and enhance the natural and built environment

Goal 6: Integrate land use planning with infrastructure development

Objective 1: Encourage future development and related transportation improvements to address capacity and connectivity needs proactively rather than reactively

Objective 2: Land use planning will utilize the Pedestrian and Bicycle network plan to create a bikeway/sidewalk/greenbelt trail network that provides an alternative and complementary means of transportation to the street system

Objective 3: Ensure that future development and related transportation improvements address transportation safety needs in planning and design

Objective 4: Increase the geographic area where people have convenient access to non-automobile modes of transportation

Goal 7: Provide safe and secure facilities and transportation infrastructure for residents, visitors and commerce in the Columbia Metro area

Objective 1: Establish partnerships with federal, state, and local governmental agencies to promote continued interagency cooperation and planning for safety and security measures

Objective 2: Reduce injuries, fatalities and property damage for all modes of transportation

Objective 3: Minimize security risks on roadways, bikeways, and public transportation facilities throughout the Metro planning area

Objective 4: Provide resources for emergency situations and major disasters while improving security and safety-related incident response

Within the Plan, each roadway segment is evaluated and given the designation of new construction, level of service (LOS) upgrade and or change. The new construction designation identifies roadways which will be constructed on a new alignment or as a relocation or extension of an existing facility. On existing roadways, the LOS upgrade designation indicates that improvements, such as the construction of turn lanes or additional travel lanes, are planned. For existing roadways which provide adequate LOS to meet future needs, the designation of “no change” is assigned

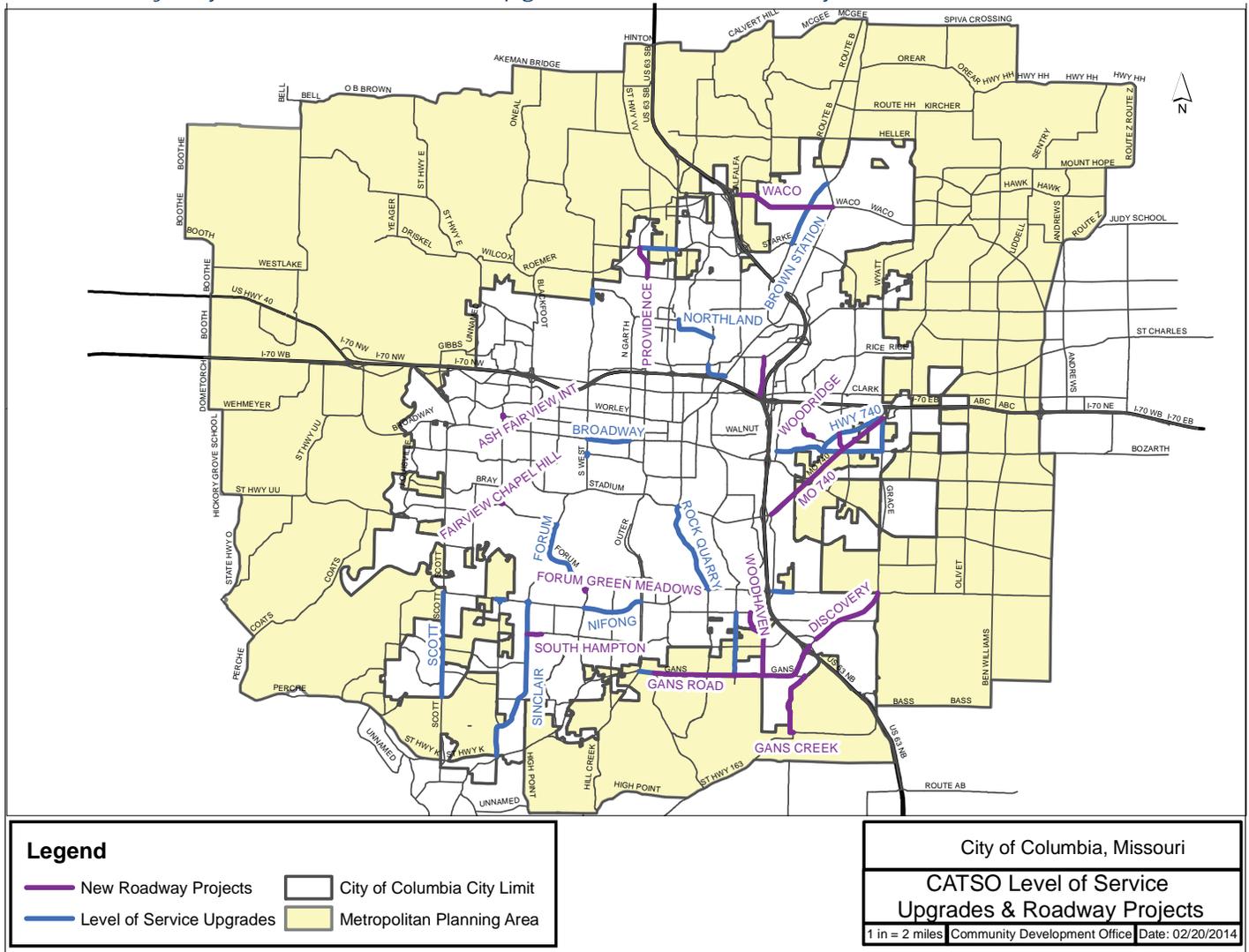
that no funding is currently available and its future availability is questionable.

New roadway projects and level of service/reconstruction upgrade projects are shown in the map below, and included in the LRTP project list by CATSO jurisdiction. In some cases, these projects are labeled as “illustrative” to indicate

If completely built out, the MRP would include:
 13 Miles of Expressways
 92 Miles of Freeways
 58 Miles of Major Arterials
 117 Miles of Minor Arterials
 166 Miles of Major Collectors
 172 Miles of Neighborhood Collectors
 13 Miles of Locals (residential and non-residential)

This equals 631 total miles. Currently, there are 524 miles of built MRP roadways across all types.

New Roadway Projects & Level of Service Upgrade/Reconstruction Projects



“The streets in the roadway system in the metro area must be designed to safely perform the intended access/mobility function. The right-of-way width, number of lanes, lane width and geometric design features reflect the traffic volumes and speeds anticipated on the roadway. Provisions for transit, pedestrian, and bicycle facilities must also be included in the roadway design.”

--CATSO 2040 Long Range Transportation Plan, Section 4.3: Street Standards

Bicycle and Pedestrian Network Plan

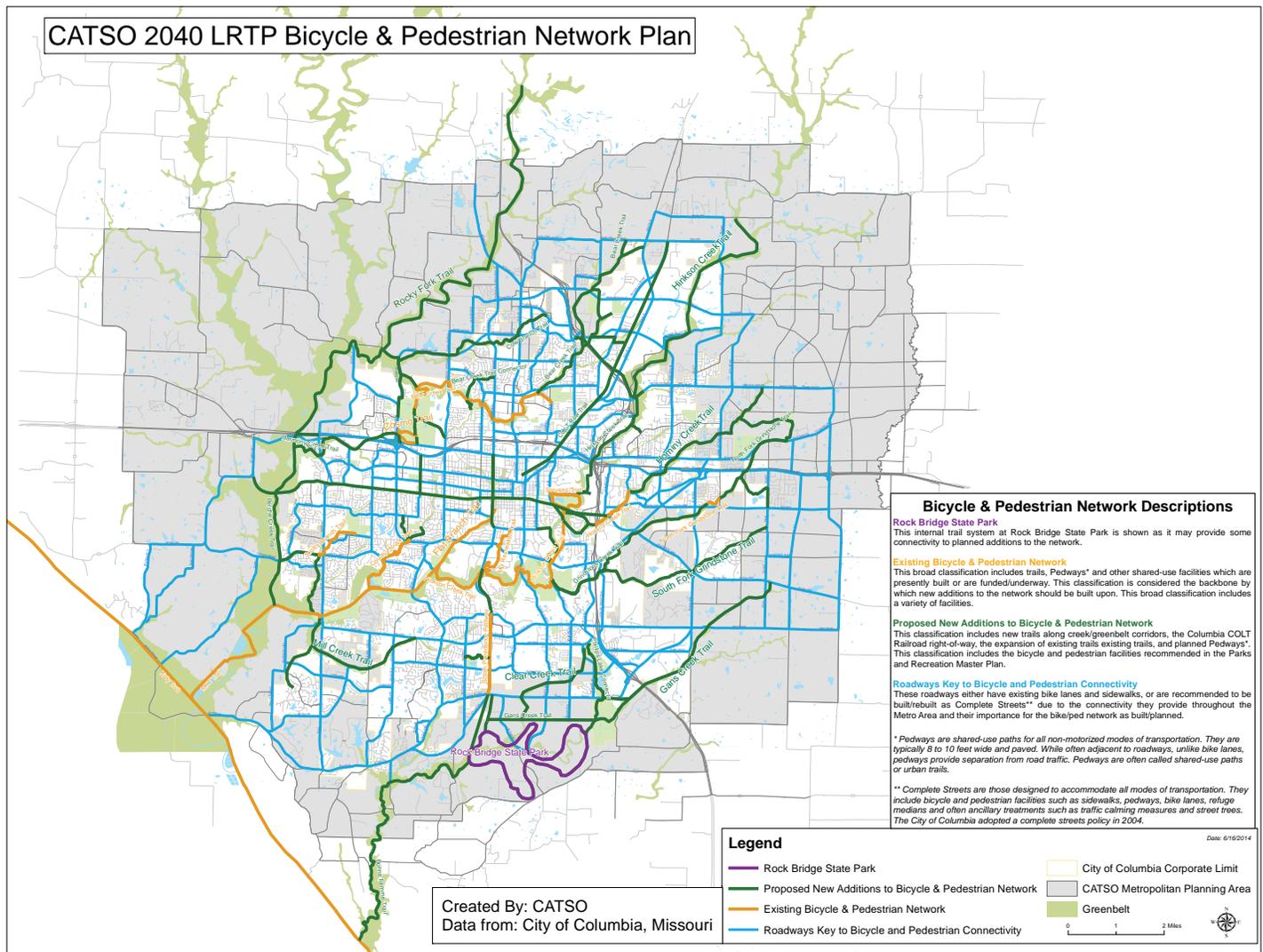
Public input during the development of the 2040 LRTP placed major emphasis on providing greater opportunities for bicycle and pedestrian travel and multimodal trips.

The Bicycle and Pedestrian Network Plan is a comprehensive pedestrian/bicycle network for the entire Columbia Metro Area. The map, as shown below, identifies existing pedestrian and bicycle facilities and proposed new connections and extensions to provide additional connectivity within and into the network. Its implementation will ultimately create a comprehensive network for non-motorized travel.

This map was developed through a public input process led by the City's Bicycle and Pedestrian Commission.

The pedestrian/bicycle network includes 133 miles of trails, 259 miles of pedways and 388 miles of on-street bicycle routes and lanes. It incorporates the City of Columbia's Parks and Recreation Master Trail Plan (2013) and proposes additional connections outside of the City limits within the CATSO Metro Area boundary. The CATSO Bike/Ped map also indicates roadways which are key to enhanced movement and multimodal connectivity within the Metro Area.

CATSO Bicycle and Pedestrian Network Plan Map



"Allowing residents the ability to travel via means other than an automobile may lessen the effects of traffic (e.g. noise, congestion, and air pollution) on the surrounding environment, both built and natural. The City should identify corridors important not just for motorized transportation, but also non-motorized transportation improvement, and work with developers and local land owners to set aside or acquire areas for such use. Improving the multi-use trail network will connect neighborhoods and support future growth while simultaneously achieving environmental goals."

--Columbia Imagined: The Plan for How We Live and Grow (2013)

Transit

Columbia Transit is the general public provider in the City of Columbia. Several services are offered: fixed-route, FastCAT, Paratransit, and MU shuttle services. Columbia Transit provides over two million passenger-trips annually; approximately 41,000 of these trips are Paratransit trips. Paratransit provides specialized van service for persons with disabilities and elderly who are unable to use the fixed-route bus system. Service is provided curb-to-curb within the Columbia City limits for riders meeting eligibility requirements.

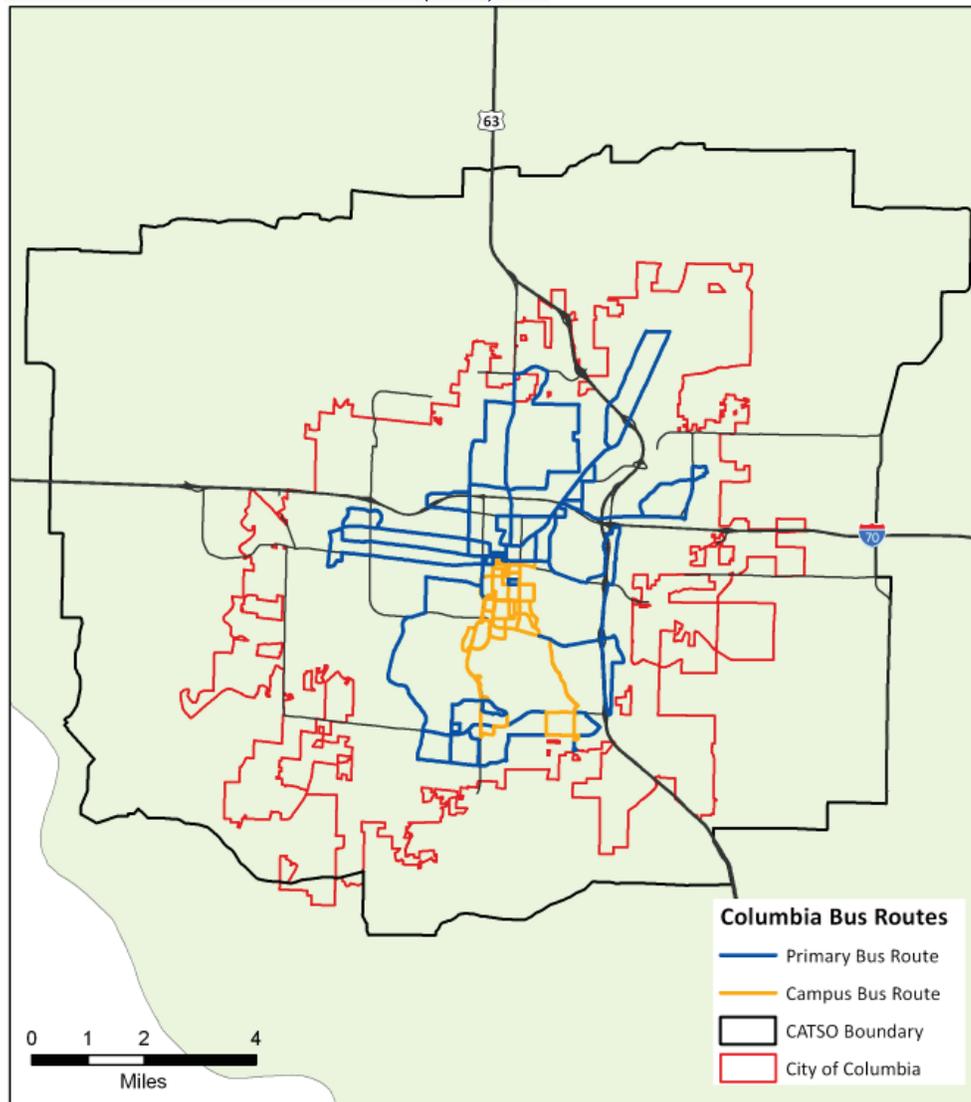
Locally, a decline in fixed route ridership has been off-set by an increased number of riders from the University of

Missouri Parking Lot Shuttle (effect shown in ridership table below in 2005). The Parking Lot Shuttle Bus is operated by the City of Columbia under a year to year contract with the University of Missouri.

CoMO Connect

As a part of a strategic planning effort, in mid-2013 Columbia Transit began work to redesign and rebrand the bus system based upon a shift from a single hub system to a multi-hub connector system using advanced routing, GPS-tracking, and other user-oriented technologies. Once fully implemented, the "CoMO Connect" system will utilize a network of routes with shorter travel times, expanded service hours, and more than 30 transfer nodes throughout the City.

Columbia Transit Service Routes (2013)



Columbia Transit Total Ridership 1998-2012

Year	Total # of Riders
1998	697,444
1999	645,952
2000	480,575
2001	517,387
2002	536,820
2003	456,961
2004	491,019
2005	1,317,356 ¹
2006	1,408,280
2007	1,583,159
2008	1,796,832
2009	1,957,371
2010	2,006,855
2011	2,214,593
2012	2,027,928

¹2005-2012 numbers include MU Campus Routes

Columbia ParaTransit Ridership 1998-2012

Year	Total # of Riders
1998	25,498
1999	26,335
2000	28,877
2001	29,940
2002	29,697
2003	24,821
2004	23,647
2005	23,742
2006	23,079
2007	22,444
2008	31,998
2009	33,481
2010	34,860
2011	36,089
2012	41,655

"The average commute time in Boone County is 18.4 minutes, and 16.6 minutes in Columbia across all modes (2010 U.S. Census). Previous household surveys have indicated that for transit to begin to attract ridership from other modes, the average travel time will need to be approximately 21 minutes or less. The current bus system uses a pulse system with 40 minute headways."

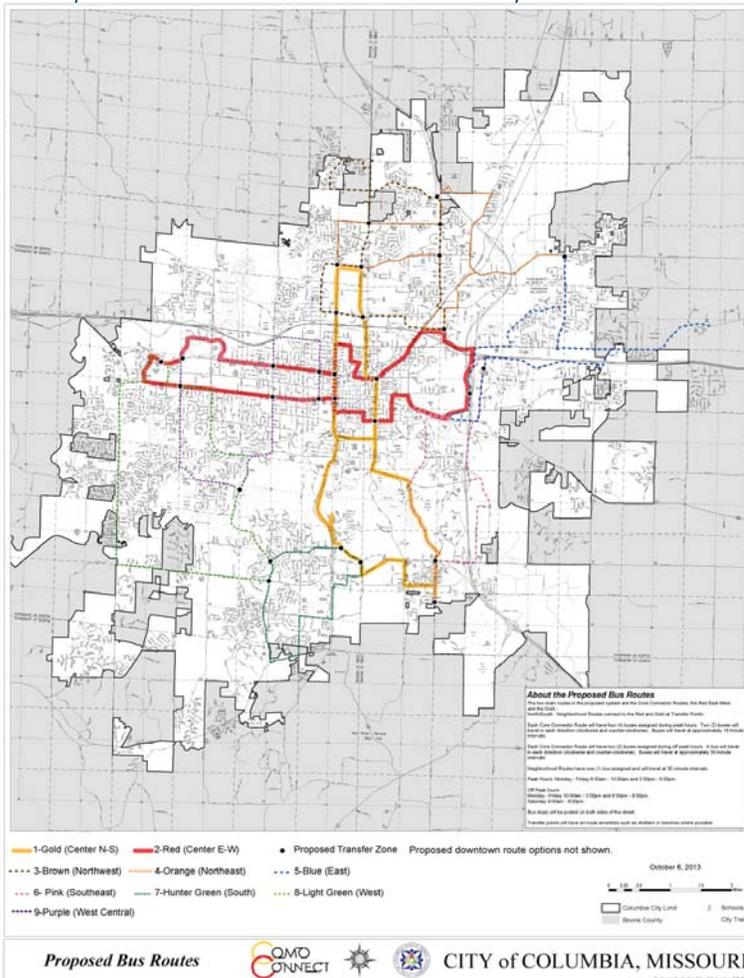
--CATSO 2040 Long Range Transportation Plan, Section 3.3A: Columbia Transit

CoMO Connect is the product of an intensive public dialog with customers to identify system-wide needs. Through route changes, enhanced technology and amenities, CoMO Connect is designed to expand service throughout more of the day and throughout more of the City.

CoMO Connect will be funded in part through the City's Parking Utility. A "park and ride" system, where parking permit holders are provided with a bus pass, and small increases in parking permit and meter fees to match demand, will generate additional transit funds to leverage FTA grants for operations. Additional grants are being sought for other needs such as bus stops, maps, and technology.

While CoMO Connect will provide a first and pivotal step in better meeting the region's transit needs, the 2040 LRTP goals and objective call for greater system expansion and enhancement, including geographic expansion beyond the

Proposed CoMO Connect Routes Map



City limits, and regional and commuter options. To meet the associated capital, operating and maintenance costs for such extensive system expansion and enhancement, the 2040 LRTP recommends the identification of additional funding sources and mechanisms for transit and regional collaboration.

Other Transit Providers

The CATSO Coordinated Public-Transit Human Services Transportation Plan (2013) describes 15 transportation and human service agencies providing some sort of transportation service in the Metro Area.

The largest provider is OATS, a non-profit specialized transit provider operating in 87 Missouri counties. Its mission is to provide service for transportation disadvantaged Missourians so they can live independently in their own communities. OATS is funded by a combination of federal, state, and local funds. Government funding through contracts with various agencies covers the cost for the elderly/disabled riders, while general public riders are charged a fare for their trip. OATS' annual ridership is approximately 25,000 one-way trips. The Boone County program costs approximately \$428,000 annually to operate.

Other Planning Considerations

The movement of goods along key freight corridors and railways, land use, safety and economic development are other key planning considerations addressed by the 2040 LRTP. The Plan also introduces the use of performance measurement, a MAP-21 initiative, to evaluate plan implementation and progress towards the Plan's goals and objectives.

Freight Corridors

The Columbia Metro Area's location along Interstate 70 provides access to a major east-west route for interstate freight movement. Up to 30 percent of the daily traffic on sections of I-70 through Columbia is multiple-axle trucking. US Highway 63 provides north-south access to the area. Other arterial and expressway roads within the Metro Area which are key to freight movement are shown in the Freight Corridors Map (see next page for map).

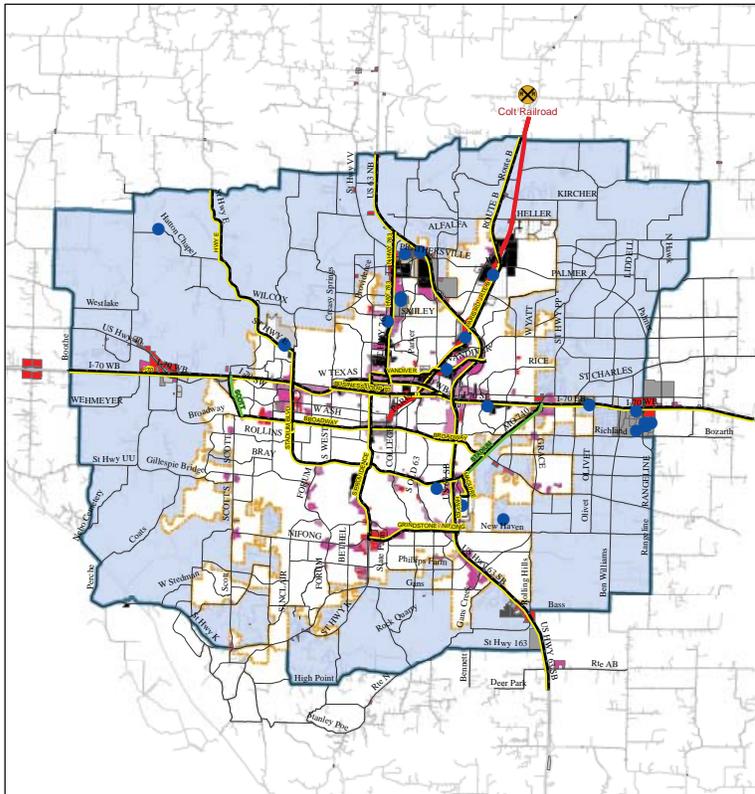
The Freight Corridors Map identifies the location of freight companies, industrial and commercial properties (based upon zoning categories), the COLT Railroad, and adjacent and arterial roadways (existing and proposed), elements inherent to freight movement. As a planning tool, freight corridors show where special design, access and land use

"Bus service within the city needs to appeal to a broader base. More frequent route times and later bus service need to be priorities. Expanding the bus service to have cooperation between other city's bus lines in other communities should also be looked at as a means to decrease congestion of automobile traffic from commuters."

--Public input response to a question asking the public to identify transit goals and objectives

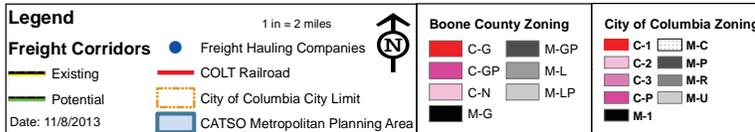
considerations are warranted to efficiently move freight within and through the Metro Area.

Freight Corridors Map



Metropolitan Planning Area Freight Corridors and Companies

Produced by the City of Columbia - Community Development Department- CATSO



Rail

Freight service to the area is provided by the Columbia Terminal Railroad (COLT), which is owned and operated by the City of Columbia. The City acquired this line from Norfolk Southern in October 1987. The railroad serves the communities of Centralia, Hallsville, and Columbia.

The COLT is a class III railroad, has two locomotives and generally uses a two or three-man crew for train operations. The railroad's main track runs between Columbia and Centralia and has 21.34 miles of mainline track. The COLT handles over 1,500 carloads of freight per year.

A rail to truck trans-load facility, or Rail Terminal, has been

in operation on the COLT since January 2004. The facility allows the transfer for freight between trucks and rail cars and allows for storage of materials for later delivery. Steel, lumber, auto parts, and other products have been handled through the facility for about 18 different customers in Columbia and mid-Missouri. Future railroad traffic growth is expected to come primarily from further development of rail to truck trans-load markets.

Land Use

Over the years, CATSO's transportation plans have provided guidance for development of facilities that serve Boone County and the City of Columbia. The goal has been to move people and goods within and through the community in an efficient, cost-effective manner and to minimize disruption to neighborhoods and other sensitive areas.

The implementation of a transportation plan has a direct effect on the form and character of a community, and therefore its livability, by influencing development decisions. For this reason, land use and land use planning have traditionally been tied to the capacity, condition, and location of transportation facilities.

Data collected and analyzed in the City of Columbia's Comprehensive Plan for the Metro Area, *Columbia Imagined: The Plan for How We Live and Grow* (adopted in 2013), and its Future Land Use Map (FLUM), project the region's future land use forecast.

This future land use forecast is based upon population and employment growth projections, infrastructure availability (including, but not limited to, transportation facilities), environmental considerations, land use and policy considerations, and how and where the public has indicated growth and development should occur.

Using the 2040 Metro Area projected population of 210,348 persons, it is anticipated 32,946 new housing units will need to be built to accommodate housing needs (see Chapter 4 for more information). These housing units will require a total of 12,672 acres. It is anticipated that most new housing units in the Metro Area will continue to be built within the City of Columbia. There are currently 5,324 acres of available vacant land within the City and Metro area with existing or planned utility service (within the next 5 years) which can accommodate 13,928 housing units, or 42% of the anticipated housing units needed by 2040.

The *Columbia Imagined* Future Land Use Map indicates these areas which are likely to develop prior to areas with-

"The former at-grade highway/rail crossing on U.S. Highway 63 was the location of several accidents as a result of the requirement for buses and select commercial vehicles to come to a complete stop prior to proceeding through the crossing. This safety hazard has been eliminated with the completion of a new COLT Railroad US 63 overpass bridge in October 2010." [This project was included in the 2030 L RTP Project Listing].

--CATSO 2040 Long Range Transportation Plan, Section 3.7: Railways

out public utility service due to lower development costs. Only 4% of the presently available 5,324 acres is Metro Area land outside the City limit. To accommodate growth through 2040, it is anticipated that an additional 7,348 acres of land presently outside the City limit will be developed over time; much of it annexed within the City by the time of development based upon prior annexation, utility extension and development trends.

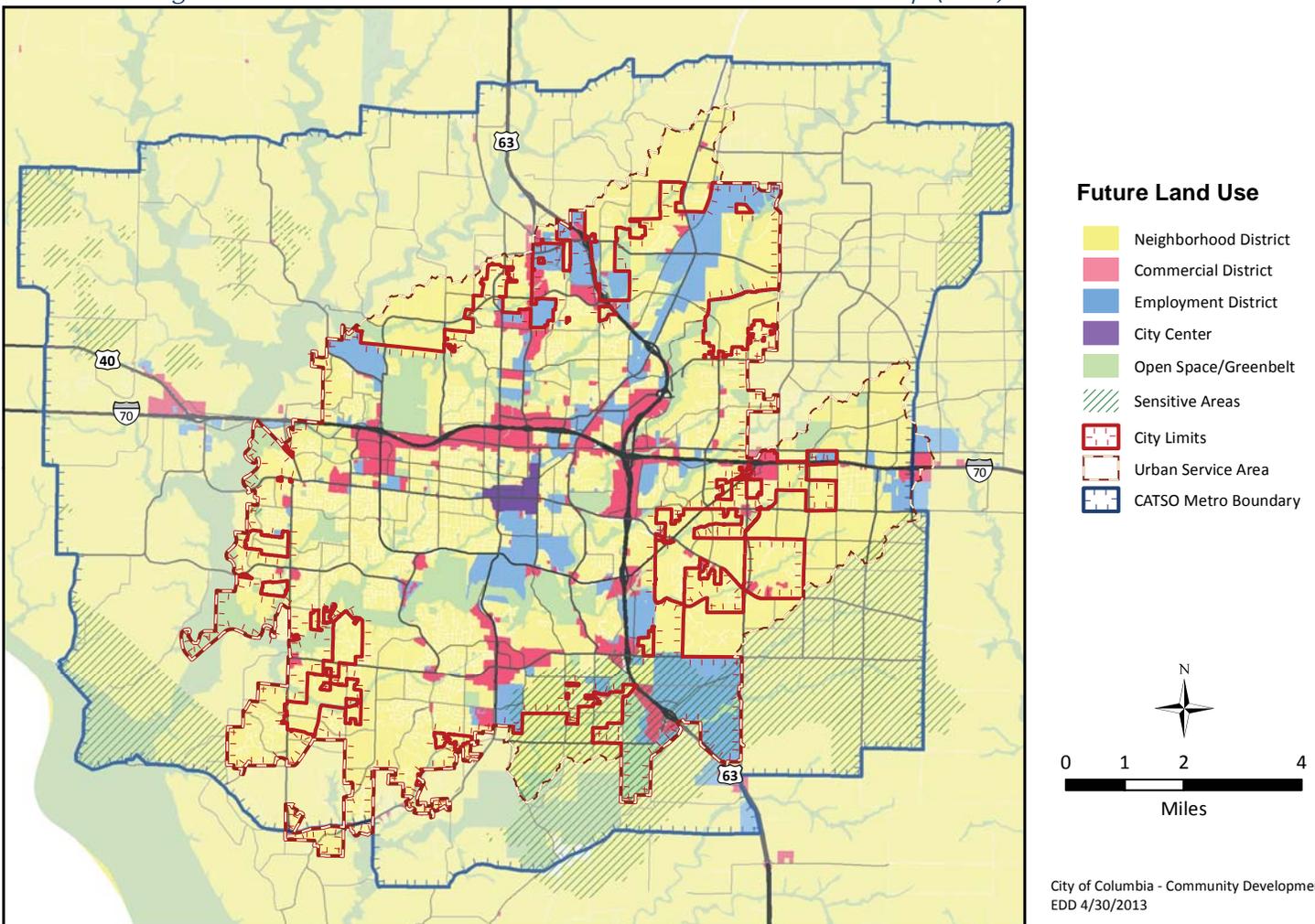
A net gain of 47,152 jobs is anticipated by 2040 for a total of 146,780 jobs. To accommodate these additional employees, *Columbia Imagined* estimates that a total of approximately 1,939 acres will be needed for development throughout the Plan horizon. This includes; 209 acres for industrial, 976 acres for office, and 754 acres for commercial. As technology advances, categorial acreage needs are anticipated to change, requiring recalculation at each

five year interval. For example, a rise in telecommuting/working may affect office acreage needs.

CATSO anticipates using the FLUM and the 2010 Census Transportation Planning Package to update the CATSO travel demand model by 2015 to better understand and project the relationship between trip origins, trip destinations, residences and work places in the Metro Area throughout the Plan horizon by allocating the updated data into detailed Transportation Analysis Zones (TAZs).

Reciprocally, the CATSO model is used to evaluate new growth and development proposals in terms of the capacity of the CATSO Major Roadway Plan, and to inform other land use decisions.

Columbia Imagined: The Plan for How We Live and Grow Future Land Use Map (2013)



“An example of how transportation infrastructure has influenced land use is found along the Old Nifong Boulevard corridor. Following the construction of Grindstone Parkway, commercial development replaced the existing agricultural and low density residential uses. The installation of this four-lane divided roadway enhanced accessibility to an area previously deficient in roadway infrastructure and provided opportunities for business growth.”
-- *Columbia Imagined: The Plan for How We Live and Grow (2013)*

Safety

Safety considerations are a key component of transportation planning for all modes and at all levels: local, state and federal. Transportation facility design, from the initial design of intersections, roadways and trails, to the installation of guard rails and rumble strips on freeways, is a key component of planning for safety. In addition to design, safety measures may include, but are not limited to, identifying safe routes to school, education and enforcement with regards to safe behaviors, planning for emergency situations, the use of information technologies, and access management.

MAP-21 encourages transportation planning to increase the safety of the transportation system for motorized and non-motorized users and to achieve a significant reduction in traffic fatalities and serious injuries on all public roads. Several planning resources are available to promote increased safety in the transportation system.

MoDOT has published the 2013 Highway Safety and Performance Plan, a statewide safety plan for MoDOT and its planning partners. The Plan documents crash data at the county level and sets benchmarks, performance standards, and strategies in several categories ranging from specific types of incidents (alcohol/drug-related, motorcycle, vulnerable motorist, etc.), to education, to engineering and data collection. The overall goal of the plan is to reduce the number and severity of traffic crashes in Missouri.

MoDOT budgets for safety-related improvements and programs safety projects in the State Transportation Improvement Program (STIP). A notable recent safety initiative was the Safe and Sound Bridge Project, which spent \$685 million on 802 bridge projects, including 12 bridges in Boone County (4 within the Columbia Metro Area).

At the local and regional level, Boone County and the City of Columbia are standardizing address identification to improve way-finding and emergency response.

CATSO will continue to encourage the use of available technology to promote safety improvements, work with planning partners to monitor facilities, and pursue safety enhancements to all aspects of the transportation system.

Economic Development

The relationship between the transportation system and economic development are described in the 2040 LRTP. Transportation system maintenance and capital improvement provides economic development in three ways: by providing

jobs to those that maintain and build facilities, by allowing more efficient movement of goods and people within and throughout the region, and by expanding economic activities and opportunities to new areas.

All transportation projects have the potential to impact how and where people work (and how they get to work), where and how businesses operate, how efficiently goods are moved, and the economic competitiveness of the region. The 2040 LRTP thus recommends that CATSO evaluate these impacts: "Consider safety, security, **economic development**, system-maintenance and performance management in all aspects of transportation enhancement, project, programs and plans." One key way CATSO is addressing economic development in the 2040 LRTP is by encouraging special planning and prioritization for freight corridors.

Performance Measures

MAP-21's performance measure mandate is intended to transform the federal-aid highway program and provide a means to the most efficient investment of federal funds by refocusing on national transportation goals, increasing the accountability and transparency of the federal-aid highway program and improving project decision making through performance-based planning and programming.

At the local level, tracking performance measures will allow CATSO to monitor the performance of the transportation system within the Metro Area, to help refine the direction of future Long Range Transportation Plan updates, to measure the success of the LRTP goals and objectives, and to update the public and partner agencies on key metrics. Section 10.10 of the Plan outlines 82 specific performance measures for the seven goals and 28 objectives developed for the Metro Area's transportation system.

Financial Capacity

The CATSO 2040 Transportation Plan is a financially constrained plan. The evaluation of the area's financial capacity is based upon estimates of reasonably anticipated funding from federal, state, Boone County, and City of Columbia sources, and of system maintenance and capital improvement costs through 2040.

MAP-21 requires that funding be available for all elements included in the 2040 Transportation Plan that are in the Columbia Metro Area. Funding for streets and highways in the Metro Area comes from a combination of federal, state, and local sources. The majority of state programs are financed from federal funds with additional revenues from

"A major economic impact of the roadway plan will be in the construction involved in its implementation. Numerous jobs will be provided by the various street construction projects required to complete the network of streets shown in the roadway plan... The employment provided as a result of these projects will have the usual multiplier effect on the local economy, in that the money spent at local establishments by project employees will provide or sustain additional jobs."

-- CATSO 2040 Long Range Transportation Plan, 10.2: Effects and Impacts of the Plan

Highway and Transit Revenues by Mode/Type: 2013-2039¹

Mode:	MoDOT	Boone County	Columbia	Total	% of Total
Total Roadways & other ROWs	\$189,308,000	\$131,525,232	\$617,654,712	\$938,487,944	85.3%
<i>New Construction/LOS² upgrades</i>	\$22,594,735	\$38,538,860	\$345,019,043	\$406,152,638	
<i>Maintenance/Capital Preservation</i>	\$166,713,265	\$92,986,372	\$272,635,669	\$532,335,305	
Total Transit	\$0	\$0	\$162,134,534	\$162,134,534	14.7%
<i>Capital</i>	\$0	\$0	\$14,308,479	\$14,308,479	
<i>Operating</i>	\$0	\$0	\$147,826,055	\$147,826,055	
Total Revenues	\$189,308,000	\$131,525,232	\$779,789,246	\$1,100,622,478	100%
Percent of Total	17.20%	11.95%	70.85%	100.0%	

Note: Above totals include projected federal funding for capital projects for all jurisdictions, federal Interstate maintenance/bridge/other programs for MoDOT, and federal funding for transit operations and transit capital projects

1. Year 2013 \$ are the base for revenue projections; 2. LOS: Level of Service

state motor fuel taxes, and user fees. Local programs rely on state sub-allocations of motor fuel tax revenue, property and sales taxes, general fund allocations, and other local fees with some assistance from federal funds for highways and bridges.

2040 Funding Projection

A summary of all available funding for transportation and transit maintenance, operations, and capital expenditures projected to 2040 is presented above in the chart "Highway and Transit Revenues by Mode/Type: 2013-2039."

Detailed information on these revenue sources broken down by year and jurisdiction (Boone County, City of Columbia, State of Missouri and federal), and additional information on inflation and other assumptions is found in Chapter 8 and Appendices M-P.

2040 Project Listing

The focus of the 2040 LRTP is continued improvement toward a more diverse transportation system that supports the use of walking, bicycling, and buses as an alternative to the automobile. This multimodal strategy relies on the construction and maintenance of multi-modal facilities, and intermodal integration.

In addition to the new roadway projects and LOS upgrade projects described in the Major Roadway Plan section of the Plan and page 5 of this Executive Summary, the 2040 LRTP Project listing also describes transit, bicycle and pedestrian, and maintenance/operation needs over the Plan horizon.

The LRTP summary table as shown on the next page,

"CATSO 2040 Transportation Plan Projects & Revenues Summary Table," includes the estimated costs of all projects identified by agency and compared to available revenues.

For the purposes of this Plan, all potential I-70 improvements are "illustrative," meaning no funding source has been identified, but if funds become available, the project could proceed. For the same reason, MoDOT's other large project, the Route 740 extension project, is also shown as illustrative. Without these two projects, MoDOT funding is shown as sufficient for its project listing.

The City of Columbia shows transportation project costs of \$778,323,333 through 2039 with revenues of \$853,435,736. This leaves a surplus of \$75,112,430 through the planning period.

Revenue projections indicate that Boone County will have total revenues of \$131,525,232 available for transportation projects in the CATSO Metro area over the planning period. All additional revenue beyond that needed for maintenance is shown as being applied to new construction projects.

The majority of the projected revenue will be needed for maintenance and reconstruction projects throughout Boone County over the next twenty-seven years. Overall, the highest priority is placed on maintenance of the existing system.

Detailed project listings are available by jurisdiction (City of Columbia, Boone County, and MoDOT) in section 9.6 of the 2040 LRTP.

"A declining transportation funding mechanism combined with a growing list of needs and inflationary costs is the biggest challenge facing Missouri's transportation future. A tremendous gap exists between the funds available and the large list of transportation wants, needs and projects we have heard from Missourians. Each year the gap grows larger as fuel tax receipts decline and the purchasing power of each dollar diminishes as goods and services cost more due to inflation. Meanwhile, the transportation wants, needs and projects from Missourians continue to grow."

--MoDOT: A Vision for Missouri's Transportation Future Long Range Transportation Plan (draft 2013)

CATSO 2040 Transportation Plan Projects & Revenues Summary Table

Costs 2013-2039	MoDOT	Boone County	Columbia	Total	
Construction Total Roadways*	\$135,680,817	\$30,511,188	\$293,235,258	\$459,427,263	*Roadway projects may include pedestrian and bicycle accommodations as part of construction
Bicycle/Pedestrian Facilities**	\$0	\$0	\$50,317,872	\$50,317,872	**Stand-alone pedestrian and bicycle projects
Transit Total	\$0	\$0	\$162,134,534	\$162,134,534	Note: the remaining projected local funds will be used for a variety of other transportation related responsibilities.
Capital	\$0	\$0	\$14,308,479	\$14,308,479	For the City of Columbia, this includes Columbia Regional Airport, for which an estimated \$73.6 million is projected for its maintenance and operations over the plan period. It also includes other expenses, such as maintaining reserve funds.
Operating	\$0	\$0	\$147,826,055	\$147,826,055	Future revenues received will be programmed for future transportation projects as prioritized by the local jurisdictions in the CATSO Metro Area, as well as for additional maintenance as may be required.
Total Maintenance (Streets)	\$53,460,000	\$92,986,372	\$272,635,669	\$419,082,041	
Grand Total	\$189,140,817	\$123,497,560	\$778,323,333	\$1,090,961,710	
Revenue	\$189,308,000	\$131,525,232	\$853,435,763	\$1,174,268,995	
Surplus/Deficit	\$167,183	\$8,027,672	\$75,112,430	\$83,307,285	

Plan Recommendations and Implementation

To address the priorities, needs, goals and objectives for the Metro Area transportation system outlined in the 2040 LRTP, CATSO will focus on the following plan implementation strategies (LRTP Chapter 10.9):

1. Develop preferred alignments for new roadways in the CATSO 2040 Major Roadway Plan and evaluate a scenic roadway classification/designation.
2. Continue to develop, as needed, preferred alignments and identify bridge locations, underpasses and trailheads for the backbone portion of the CATSO 2040 Bicycle/Pedestrian Network Plan.
3. Continue to review the existing study areas for potential CATSO Major Roadway Plan amendments initially identified in 2005 and 2006, and proceed with amendments by individual study area as directed.
4. Update the CATSO Transportation Plan in 2018 for the year 2045 and evaluate plan implementation via the performance measures listed in section 10.
5. Examine and support options for expanding public transportation services in the incorporated and unincorporated portions of the Metro Area, specifically under the CoMO Connect plan and in accordance with the Coordinated Public Transit-Human Services Plan.
6. Evaluate and develop roadway access management guidelines which will help to ensure roadway functionality and contribute to motorist safety.
7. Continue assistance in implementation of all elements of the CATSO 2040 Bicycle/Pedestrian Network Plan and Sidewalk Master Plan, in particular those projects to be done as part of the GetAbout Columbia Project. Support

the use of a level of service (LOS) measurement for existing and all new bicycle and pedestrian facilities as a performance measurement tool.

8. Support the implementation of the land use and transportation elements of *Columbia Imagined*.
9. Consider safety, security, economic development, system-maintenance and performance management in all aspects of transportation enhancement, projects, programs and plans.
10. Support the adoption of a Complete Streets policy for the CATSO Metro Area to reflect public input and LRTP emphasis on non-motorized transportation modes.
11. Develop a process with specific metrics to prioritize regional projects to the extent to which they address LRTP goals and objectives.

CATSO is required to prepare a Long Range Transportation Plan (LRTP) and to update that Plan every five years. The current plan was approved by the CATSO Coordinating Committee on February 27, 2014.

CATSO staff is available to answer any questions you may have, and is always looking for comments and input on the Long Range Transportation Plan. Please contact us at (573) 874-7239 or send us an email to planning@gocolumbiamo.com with your LRTP related comments and questions. You may also send written comments to: CATSO, PO Box 6015, Columbia, MO 65205.

If you are interested in receiving mail or email notifications about transportation issues in the Columbia Metro Area, please subscribe to the Planning and Development Listserv by visiting the City of Columbia website at www.gocolumbiamo.com

"The metropolitan transportation planning process shall provide for the establishment and use of a performance-based approach to transportation decisionmaking to support the national goals... A metropolitan planning organization shall integrate in the metropolitan transportation planning process, directly or by reference, the goals, objectives, performance measures, and targets described in other State transportation plans and transportation processes, as well as any plans developed under chapter 53 of title 49 by providers of public transportation."

-- MAP-21 (Public Law 112-141, 126 Statute 505)