

City of Columbia

701 East Broadway, Columbia, Missouri 65201



Agenda Item Number: REP 3-15

Department Source: City Manager - Sustainability

To: City Council

From: City Manager & Staff

Council Meeting Date: 1/5/2015

Re: 2014 Annual Infrastructure Report

Documents Included With This Agenda Item

Council memo

Supporting documentation includes: 2014 Infrastructure Report

Executive Summary

The 2014 Annual Infrastructure report is the second report that has been created as a result of the 2013-2015 City of Columbia strategic plan. The plan requests an annual report on infrastructure. Similar to the 2013 report, the report showcases highlights, improvements, and what's new for 2015. New to the 2014 report is a brief overview of the planning and funding process for our Infrastructure and a "crystal ball" map where staff sees new infrastructure needs coming in the near future.

Discussion

The City of Columbia strategic plan for 2013-2015 identifies infrastructure as a strategic priority area; with an objective for improving communication of infrastructure needs with our customers. One initiative for this objective is to develop an annual infrastructure report. The attached report was developed by city staff to communicate the 2014 highlights, improvements, and what's new for 2015. The intent of the report is not to provide ratings for the projects or to just list what was accomplished in 2014 for City Council. Rather, the report is intended to be read by the average citizen to show what was accomplished in 2014 with emphasis on the diversity of infrastructure that the city of Columbia is charged with maintaining. As the report states, our infrastructure is a network of systems and we are connected by our infrastructure. It is what makes us a community and everyone contributes to its success.

The 2014 Infrastructure is not divided by departments; it is organized by category of infrastructure. The categories include:

- Parks
- Electric system
- Water system
- Streets, Sidewalks, & Trails
- Transportation
- Sewer & Stormwater

This is the second year that staff has developed an infrastructure report. After the first annual report,

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staff received feedback from citizens, City Council, and numerous boards and commissions. As a result of that feedback, new in this year's report is a general overview on how infrastructure is planned and funded. The final page of the report also shows a map of where staff sees future infrastructure needs developing.

Staff welcomes feedback on what additional information should be included in next year's 2015 infrastructure report.

Fiscal Impact

Short-Term Impact: None

Long-Term Impact: None

Vision, Strategic & Comprehensive Plan Impact

Vision Impact: Community Facilities and Services, Development, Environment, Governance and Decision Making

Strategic Plan Impact: Customer Focused Government, Infrastructure

Comprehensive Plan Impact: Land Use & Growth Management, Infrastructure, Mobility, Connectivity, and Accessibility, Livable & Sustainable Communities

Suggested Council Action

No action required. This report is for information purposes only.

Legislative History

None


Department Approved


City Manager Approved



SUPPORTING DOCUMENTS INCLUDED WITH THIS AGENDA ITEM ARE AS FOLLOWS:

2014 Infrastructure Report

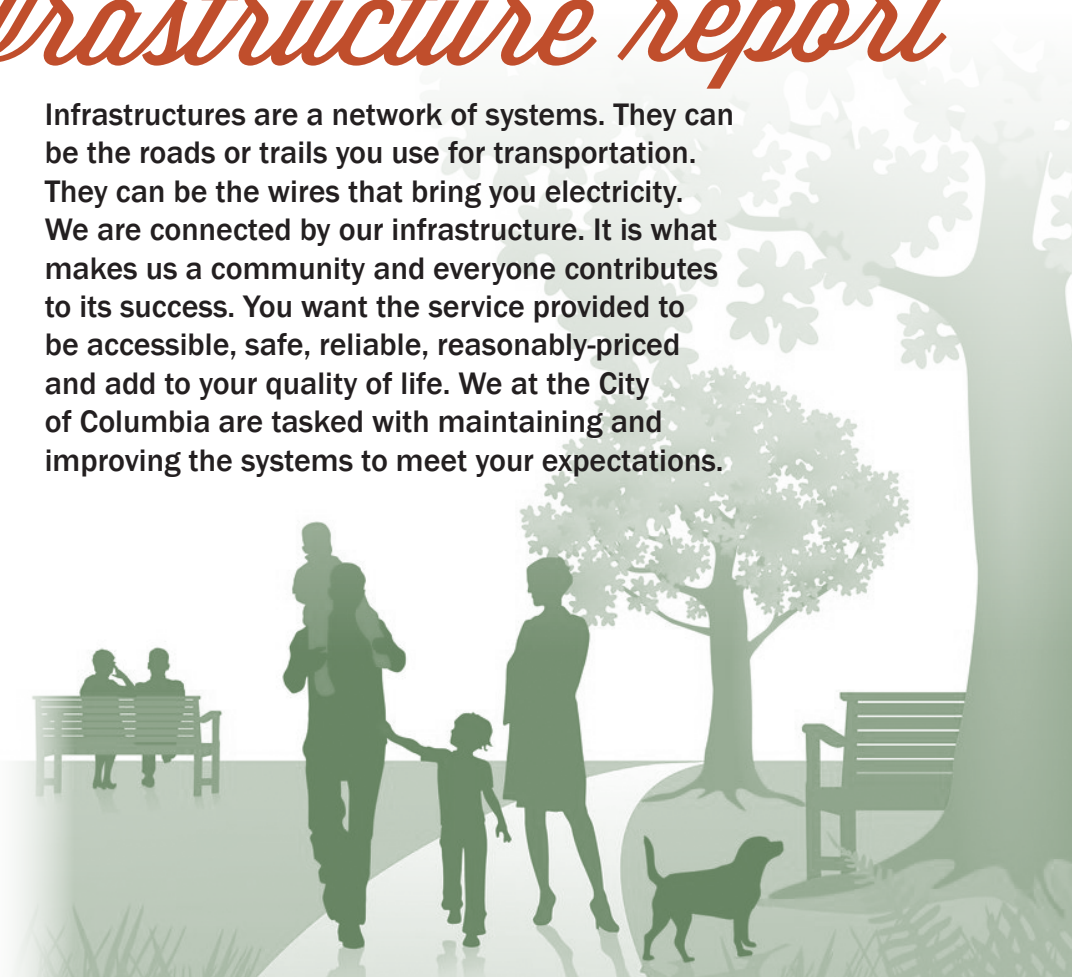


2014 ANNUAL *infrastructure report*

Infrastructures are a network of systems. They can be the roads or trails you use for transportation. They can be the wires that bring you electricity. We are connected by our infrastructure. It is what makes us a community and everyone contributes to its success. You want the service provided to be accessible, safe, reliable, reasonably-priced and add to your quality of life. We at the City of Columbia are tasked with maintaining and improving the systems to meet your expectations.



City of
Columbia,
Missouri



planning FOR INFRASTRUCTURE



City of Columbia departments have multiple plans to follow for development and maintenance of infrastructure. Guiding the direction of infrastructure comes from the [City of Columbia Strategic Plan](#), Federal and state mandates and local planning resources such as [CATSO](#) and the [Capital Improvement Program](#). In addition, most departments have plans in place for the infrastructure they develop and maintain. Examples of some of those include:

- Columbia Water & Light [Integrated Resource Plan](#)
- Parks & Recreation [Parks, Recreation and Open Space Master Plan](#)
- City of Columbia [Sidewalk Master Plan](#)

Guiding all departments' maintenance of their infrastructure are the ongoing evaluation of systems to determine improvements and existing system abilities, projected areas of growth and division managers' knowledge and expertise in their field.

WHAT IS A CAPITAL IMPROVEMENT PROGRAM?

The City of Columbia's Capital Improvement Program (CIP) is a five-year plan for investments in infrastructure. The CIP also includes facilities and equipment that supports future infrastructure needs. Projects within the CIP are intended to reflect the community's values and goals, the overall policy goals of the City Council including existing citywide long-range plans. City departments with infrastructure projects review the CIP throughout the year to plan work flow and make adjustments as needed for future needs. CIP projects and funding are reviewed by department staff members, the Finance Department and the City Manager's Office. In many cases, there are citizen advisory committees involved in the review process. The City Council has the final say on the CIP projects and budget after receiving feedback from the public at a series of public hearings.

- Columbia Water & Light uses a combination of revenue collected through rates and from voter-approved bond funds to pay for CIP projects. No tax revenue is used for water or electric projects.
- Parks and Recreation projects are mainly funded through the one-eighth cent Park Sales Tax, which is presented to voters every five years for renewal. Other CIP funding sources may include Recreation Service User Fees and Golf Course Improvement Fees, which are comprised of recreation fees paid by users.
- Public Works infrastructure needs are financed in a number of ways. A dedicated sales tax funds road maintenance and minor projects, airport and COMO Connect (transit) needs. Development fees and utility fees help fund sanitary sewer and stormwater. Bonding funds large projects such as major roadway and major sewer.

parks

Eighty-seven percent of Columbia households use the park and trails system.



2014 HIGHLIGHTS

- [Waters-Moss Memorial Wildlife Area](#) phase one development including indoor recreational and rental space, a medium-sized shelter, playground, restroom and 20-car parking lot
- [3M Flat Branch-Hinkson Creek Wetlands](#) development comprised of an urban wetland capable of storing 10,000,000 gallons of stormwater runoff
- [Steinberg Playground improvements](#) including six new play structures, new seating, boardwalk renovations and improved ADA accessibility
- [Fairview Park improvements](#) including construction of a medium-sized shelter, 20-car parking lot and ADA walkways
- [American Legion Park improvements](#) including the addition of athletic field lighting on the east field, renovations to the restroom/concession facility and addition of a 55-car parking lot

WHAT'S NEW IN 2015?

- [Douglass Park phase one improvements](#) including construction of a small shelter, stage, parking and internal walkways
- [Strawn Park development](#) including an 18-hole championship level disc golf course, 20-car parking lot and small shelter
- [Gans Creek Recreation Area development](#) including seven multipurpose athletic fields and parking and road infrastructure
- [Barberry Park development](#) including the addition of a small shelter, playground, basketball court, walking trail and fishing lake improvements

2014 IMPROVEMENTS

COSMO PARK ROLLER HOCKEY RINK

[Renovations](#) include new asphalt, rink painting, fencing and hockey goals

AMERICAN LEGION PARK

[Installation of athletic field lighting](#) on east field

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new restrooms at [Grindstone Nature Area](#), [Garth Nature Area](#) and [Waters-Moss Memorial Wildlife Area](#)

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[new pickleball courts](#) at Albert-Oakland Park

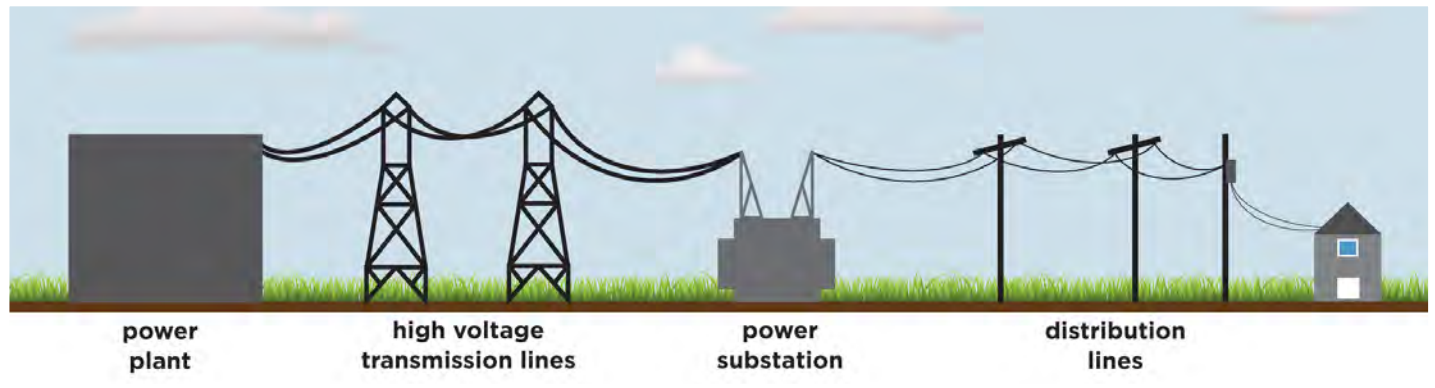
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new park shelters at [Jay Dix Station](#), [Waters-Moss Memorial Wildlife Area](#) and [Fairview Park](#)

ADA WALKWAY IMPROVEMENTS

[Rock Bridge Park](#), [Columbia Cosmopolitan Recreation Area](#) and [Albert-Oakland Park](#)

electric system



The local electric generation facility assets include: the **power plant** – rated at 86 megawatts, this facility used coal, waste wood and natural gas to generate 5.1 percent of Columbia’s electric needs; the **energy center** – rated at 144 megawatts, this facility used natural gas to generate 0.78 percent of Columbia’s electric needs; **landfill gas** – rated at 3.1 megawatts, this facility used gas created from decomposing waste to generate 1.5 percent of Columbia’s electric needs; and **diesel backup generators** – rated at 12.5 megawatts.

NOTE: External power sources (coal, natural gas, wind, landfill gas) help meet the rest of the 325 megawatts needed for the Columbia system electric load.

In 2014, the number of electric customers grew 1 percent for a total of 47,941. Customers used 1.17 million megawatt hours of electricity. The average monthly residential customer usage was 754 kilowatt hours.

HOW DOES THE ELECTRICITY GET TO ME?

99.876% time electricity available (down from 99.989%)

70 miles of transmission lines (no change)

284 miles of overhead distribution lines (removed 3 miles)

523 miles of underground distribution lines (added 14 miles)

11,734 distribution transformers (added 271)

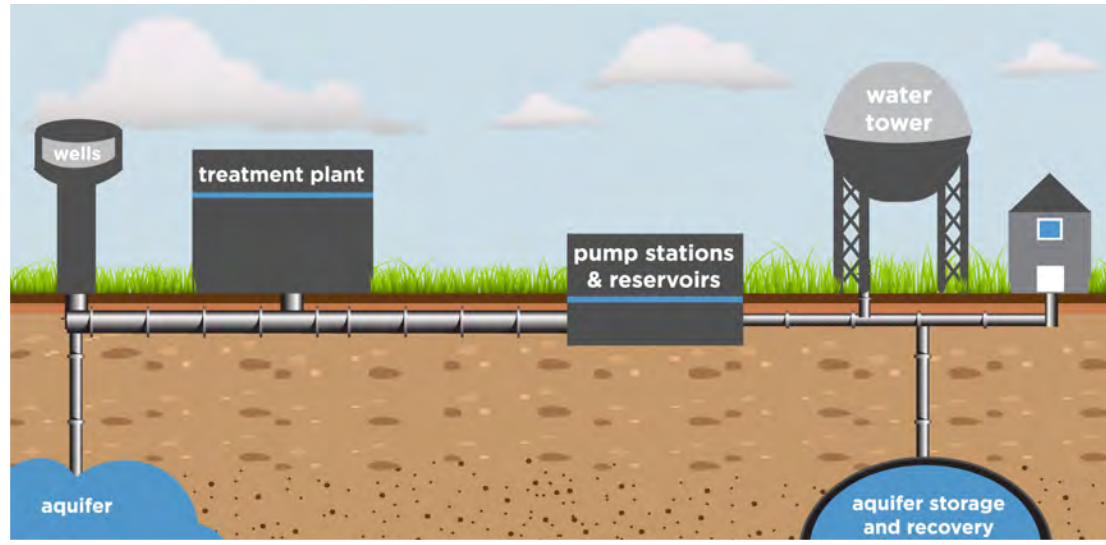
2014 HIGHLIGHTS

- Started adding new electric feeder circuit from Perche Creek substation on east side of town
- City Council increased future renewable energy requirements. Requirements have been surpassed the last five years
- Requested proposals to expand utility’s solar electricity generation and added solar energy loan program for customers
- [High winds in July brought down electric lines, causing 14,000 customers to lose power.](#) Storm recovery efforts cost over \$800,000 and took five days due to the amount of debris and rough terrain in areas. Twenty seven transformers, 37 poles and over 12,000 feet of wires were replaced. Service was restored at an average rate of 200 customers per hour.

WHAT’S NEW IN 2015?

- Finalizing [transmission line design](#), easement acquisitions, cost estimates and construction timeline to City Council
- Possible April [electric ballot issue](#) to borrow money through bonds for infrastructure improvements
- Finalize plans for meeting future emission requirements at the local power plant and increasing the amount of [renewable energy](#) sources to meet city’s ordinance

water system



Columbia's water is pumped from 15 wells that tap an alluvial aquifer in McBaine, Mo. Softened, filtered and disinfected water is pumped from the treatment plant to reservoirs at Columbia's three pump stations. The water is then pumped throughout the city to consumers. It is stored at towers and reservoirs for times of high demand or for fire fighting.

In 2014, 47,497 water customers used 4 billion gallons of water. The average monthly residential customer usage was 4,508 gallons in the winter and 5,431 gallons in the summer.

HOW DOES THE WATER GET TO ME?

689 miles of water pipes

7.24 miles of water mains installed in 2014

5,776 total hydrants, 63 new locations installed and 19 replaced

12 MILLION gallons – average pumping rate

18.22 MILLION gallons – peak pumping rate

2014 HIGHLIGHTS

- Started the process of adding three new wells to increase the water available for Columbia
- Added 4.2 miles of 24-inch pipes to complete a multi-year project of adding transmission lines to serve the eastern side of town
- Repaired 152 water main breaks, about half affected water service to customers

WHAT'S NEW IN 2015?

- Begin a water integrated resource plan and a condition assessment of the water treatment plant to determine whether the water treatment plant operations are expanded or if it should be delayed and summer irrigation restrictions are implemented
- Finish drilling new wells for additional water supply

streets, sidewalks & trails



Streets, sidewalks and trails are an integral part of the overall transportation network. In 2015, the final projects approved by voters in 2005 will be in construction. Future projects will be dependent upon future financing, with a project list and costs likely to be placed before voters in August.

IMPROVEMENTS

20 miles of streets “[milled and overlaid](#)” providing new asphalt driving surface and roadbed improvements

40 miles of streets maintained by “[chip and seal](#),” designed to extend the life of driving surfaces at 1/3 the cost of mill and overlay

3 miles of new trails constructed to provide connectivity for pedestrians and cyclists as part of Columbia’s transportation plan

16,141 feet of new sidewalks and pedways

1,345 lane miles of roadway now maintained by Public Works

2014 HIGHLIGHTS

- Completed the \$5.9 million [Scott Boulevard Phase II](#) as part of the Scott Boulevard Corridor Improvement Project
- Completed Non-Motorized Transportation Improvements to [Clark Lane](#) between Woodland Springs and Ballenger Lane, adding shoulders for cycling and pedestrian safety
- Completed [Ashland Road sidewalk and intersection](#) improvements, Providence Road bike lanes
- Completed the 1.76-mile [Old 63 Grindstone Creek Pedway](#) from Moon Valley to Grindstone Nature Area

WHAT’S NEW IN 2015?

- [Scott Boulevard Phase III](#) from Vawter School to State Route KK in final design and easement acquisition with construction projected to start in summer 2015
- [Providence Road Improvement Project](#) in final design and easement acquisition -- final project from the 2005 Capital Improvement Sales Tax Extension
- [College Avenue Safety Enhancement Project](#) construction to begin in summer 2015
- Avenue of the Columns streetscape improvements from Walnut to Cherry Street set for construction in 2015

transportation



IMPROVEMENTS

50,000+ enplanements at COU
(highest since 1988)

100,000+ total passengers
passed through COU

1.6 MILLION rides provided
by COMO Connect

2014 HIGHLIGHTS

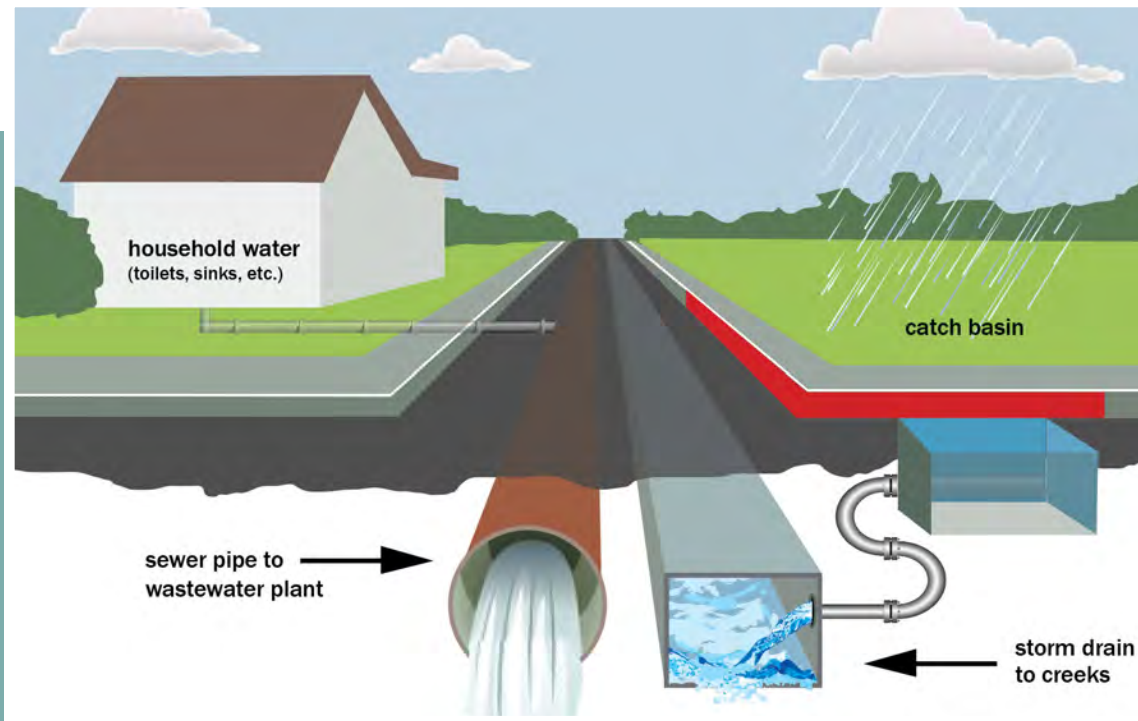
- Launch of [COMO Connect](#) Aug. 4, replacing old “hub and spoke” means of providing public transit; new branding and marketing campaign launched to enhance ridership
- [American Airlines](#) launched second daily nonstop flight to Chicago O’Hare -- load factors averaging above 83 percent for all flights
- [COMO Connect](#) installs passenger counters and stop enunciators on all transit vehicles
- City of Columbia, in partnership with Clean Energy, opens first [Compressed Natural Gas \(CNG\)](#) fueling station in central Missouri

COMO Connect was successfully launched and continues to improve passenger experiences and meet passenger needs. Columbia Regional Airport saw passenger numbers continue to climb, trending to over 100,000 passengers flying in or out of COU.

WHAT’S NEW IN 2015?

- Final design and construction of new restrooms and snack bar in secured passenger area at [Columbia Regional Airport](#)
- [Runway intersection safety improvements](#) set for construction in the summer 2015
- [Design and installation of new-and-improved bus shelters](#) with solar lighting and public art component (shelter design by MU students)
- American Airlines to begin second daily nonstop Chicago flight
- [65-passenger CRJ-700 aircraft](#) will replace the current 44-50-passenger ERJ-145 aircraft beginning in January

sewer & stormwater



Challenges must be addressed regarding funding and constructing future critical sanitary sewer and stormwater infrastructure needs. Stormwater funding has remained stagnant since 1993. In 2008, it was estimated that there were \$50-100 million of repairs and replacement needed for the stormwater system. Downtown sanitary sewer issues are beginning to be addressed with the Flatbranch Sewer Project #1, however, there are millions of dollars in unfunded CIP projects.

IMPROVEMENTS

1,743 feet of sanitary sewer pipe replaced

190 sanitary sewer manholes rehabilitated or adjusted

32,765 feet of sanitary sewer line rehabilitated

COST OF SERVICE STUDY COMPLETED

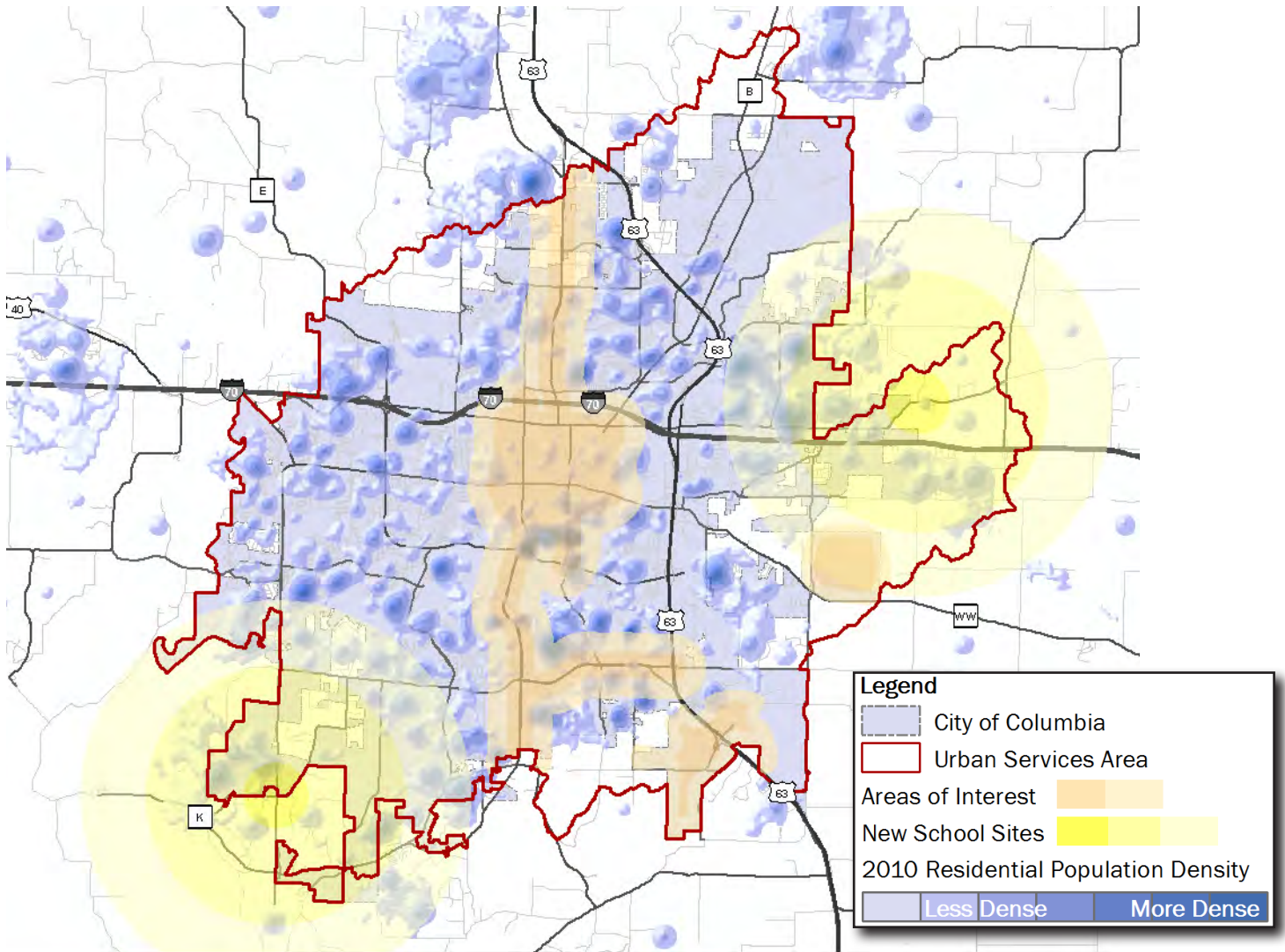
2014 HIGHLIGHTS

- [Report from consultants](#) at TREKK indicate efforts to reduce inflow and infiltration (I&I) are successful -- shows a 48 percent decrease volume in I&I in basins that have undergone improvements
- Design work began on many projects that will be funded with proceeds from voter-approved [\\$32 million bond issue](#)

WHAT'S NEW IN 2015?

- In 2015, the Sanitary Sewer Utility will begin projects aimed to improve functionality of older private sewer systems (known as private common collector elimination (PCCE) projects). These are shown to reduce I&I from stormwater sources, which reduces sewer backups.
 - Wilson/High Street, Cliff Drive, Thilly/Lathrop/Westmont, Stewart Road/Medavista PCCE projects in design or construction phase
- In design, easement acquisition or construction phase: [Flat Branch Relief Sewer projects](#); Hominy Branch Phase II Relief Sewer; West Broadway Sewer Improvement project; and Upper Meredith Branch stream bank stabilization project

projecting FUTURE INFRASTRUCTURE



In the next five years it is likely that the majority of the City's physical growth will occur within the existing city boundary, with the most active areas in the downtown, on major corridors and in expansion areas to the south and east.

Some of the southwest and northeast area growth will involve annexations, including properties along Scott Boulevard and Route K near the new elementary school and surrounding Battle High School and Battle Elementary School in the Lake of the Woods area. Continued commercial and mixed-use

development is expected in the Grindstone Parkway (Route AC), Providence Road (MO 163) and Range Line Street (MO 763) corridors. Old Hawthorne in the east area will continue its residential and mixed-use build-out. The southeast will continue to emerge with the mixed-use Discovery Park, the research-oriented Discovery Ridge area and the emerging Philips Park and Gans Creek Recreation Area.

Visit the new [Community Dashboard](#) map to view current information about planning cases and construction.