Annual Open Data Report
Louisville Metro Government
September 1, 2019

This serves as the sixth OPEN DATA REPORT to the Mayor in accordance with the requirements set forth in Mayor Greg Fischer's Executive Order No. 1, Series 2013, dated October 11, 2013. The purpose is to summarize the current state of data availability from Louisville Metro Government (LMG) to the public and to outline opportunities for continued improvement of access to public information through our Open Data Platform (ODP) at *data.louisvilleky.gov*. Previous Open Data Reports can be found on our ODP on the Mayor's Executive Order page.

Louisville's employees collect and use data as part of their daily work to provide services and support to residents. Our open data program shares a portion of this data publicly, with a process for privacy concerns and legal requirements.

The Louisville open data program:

1. increases government transparency, accountability, and accessibility
2. makes the information we collect transparent, shows what public institutions do for you, and provides your right to use that information for yourself
3. eases data sharing internally and with our external partners
4. lets the public check our work so we can improve our own processes and data quality
5. allows journalists to understand and report on the operations of our city
6. allows analysis and insights by researchers which can lead to improvements in our city
7. provides data for private companies and organizations that can improve residents' lives more directly in the apps and services they already use
8. reduces our costs and time fulfilling open records requests

These outcomes align with the city's goals of government transparency, improved services for citizens, reducing cost by increasing efficiencies, an informed and educated populace, and empowering data-driven decision making.

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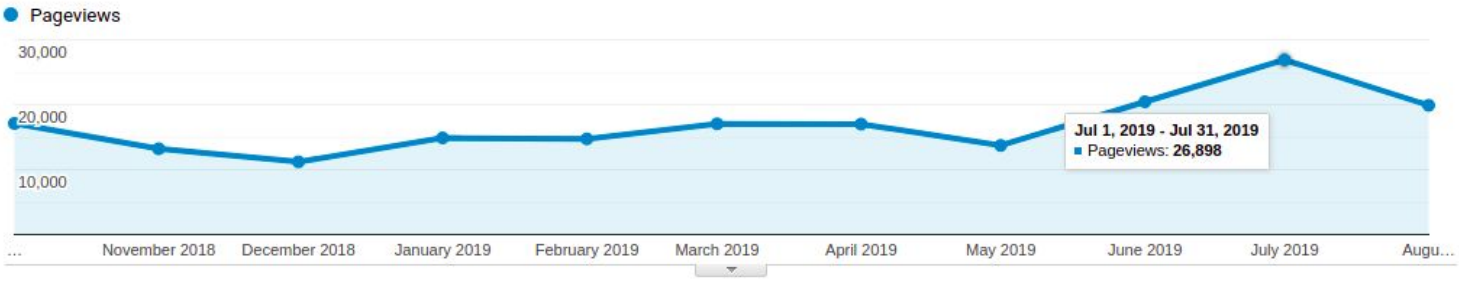
1. THE STATE OF OPEN DATA

RANK. Louisville ranks 12th out of 100+ active cities on the Sunlight Foundation's Open Data City Census, dropping from 9th the year before. We are still working on releasing Emergency Calls and Police Use-of-Force data, which the Open Data City Census requires. Other gaps include Lobbyist Activity which the city does not collect, and data from agencies outside the city's jurisdiction, including Property Assessment, Property Transfers, and Parcels all from our Property Valuation Administration (see their data fee structure) which is run at the Kentucky state level. The CDO and the city administration are willing to work with the PVA to help them release their data to the public.

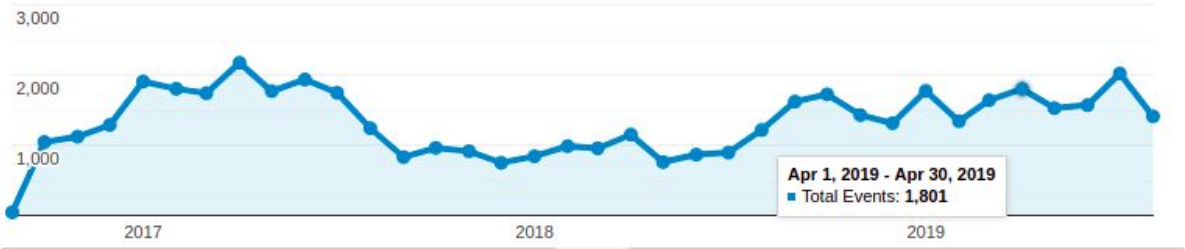
Sunlight Foundation US City Census Ranking

ODP SITE TRAFFIC. Since the launch of the new ODP in Oct 2016, we've had 550,000 page views and 175,000 user sessions. This year we've seen our usage increase to 201,000 page views due to releasing or improving datasets datasets (dockless trips, salaries, crime reports), adding data visualizations, participating in local hackathons, and collaborative university data analytics projects. Full statistics can be seen in our Website Analytics dataset.



Open data website pageviews over the last year

QUALITY METRIC. We have a LouieStat Key Performance Indicator (KPI) called *Open Data Usage*, which tracks data set downloads. The goal of *Open Data Usage* KPI is to focus on quality and engagement. This KPI encourages us to release information that our departments and the public will find valuable by showing us what data is being accessed. Our most popular data downloads this year, in order, are salaries, restaurant health ratings, crime, animal bites, vehicle collisions, and dockless trips. Since the new ODP launched, the download counts have been between 1,000 to 2,000 files a month. Note these numbers are from people using a browser to download files, and do not include automated, direct file, or API downloads.



Dataset raw downloads monthly over the past 3 years

NEW DATA SETS. Since the last open data report, we have released the following new key data sets to the public, either on our open data site or in coordination with LOJIC:

- Dockless Vehicle Trips
- Environmental Health Inspection Results
- Environmental Health Permitted Establishments
- Syringe Exchange Program
- Fire Property Damage
- Fire Incidents and Runs
- What Works Cities Certification Report
- Youth Detention Services Residents
- Bluetooth Beacon Locations
- Opportunity Zones
- LouVelo Bicycles
- Data Inventory

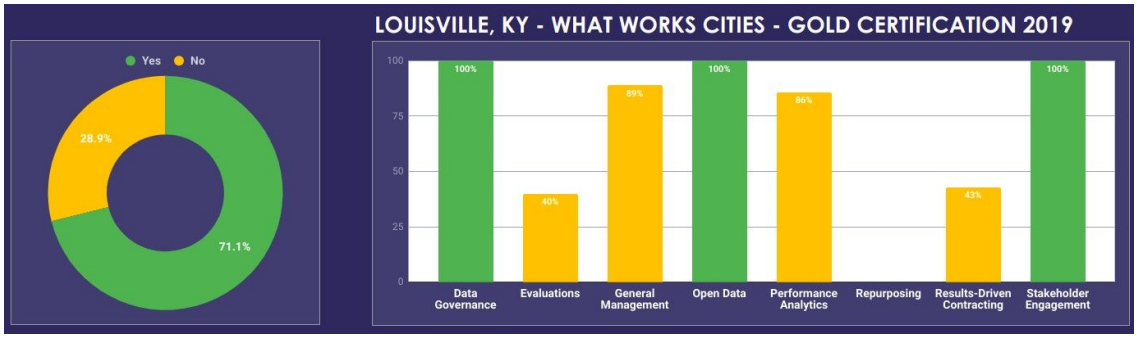
The Office of Civic Innovation and Technology is currently working with internal departments and external agencies to potentially release:

- Police use of force
- 911 Calls for service
- Property deeds and transfers
- Crime report latitude and longitude
- Parking meter locations
- Waze traffic data
- Recent home sales
- Garbage bins
- Alleyways
- Snow routes

This year we are piloting a low-cost data automation and processing system (ETL) and data warehouse which will increase the number and frequency of datasets that are updated. If there is data you'd like to see released, please let us know.

2. OPEN DATA INITIATIVES

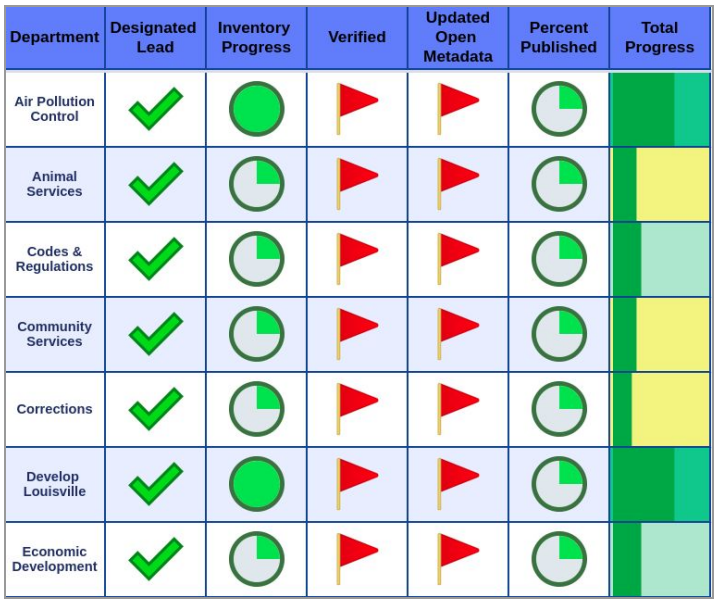
WHAT WORKS CITIES CERTIFICATION. Out of 1,400 eligible U.S. cities, Louisville was one of four to achieve Gold certification for data-driven decision making through What Works Cities (WWC) through Bloomberg Philanthropies. The other gold cities are Los Angeles, Washington DC, and Kansas City MO. Our certification included scoring 100% in the open data, data governance, and public stakeholder engagement categories. Last year, Louisville was one of nine cities out of 230 to be certified, and we achieved Silver status. Read our full WWC reports posted on our open data website.



Louisville's audited rankings across eight WWC categories

Our city's action plan for this year includes reaching 100% in the Performance Analytics and General Management categories in the Office of Civic Innovation and Technology. The Office of Management and Budget has a plan in place to improve our Results-Driven Contracting, and the Office of Performance Improvement has made cross-functional progress on Evaluations and Repurposing. Next year our goal is to be the first city to obtain the highest level of Platinum certification.

DATA INVENTORY. Our Data Governance group has undertaken a comprehensive data inventory and data classification project as part of our WWC certification. Each department has a data lead who has documented what information we have, added detailed metadata, participated in training, and is following our annual maintenance plan. The results are shown on a department-level *Progress Report Card*. The inventory is published as open data and aids in data discovery both internally and externally.



Department	Designated Lead	Inventory Progress	Verified	Updated Open Metadata	Percent Published	Total Progress
Air Pollution Control	✓	●	⚑	⚑	◔	
Animal Services	✓	◔	⚑	⚑	◔	
Codes & Regulations	✓	◔	⚑	⚑	◔	
Community Services	✓	◔	⚑	⚑	◔	
Corrections	✓	◔	⚑	⚑	◔	
Develop Louisville	✓	●	⚑	⚑	◔	
Economic Development	✓	◔	⚑	⚑	◔	

Sample of our data inventory progress report card for departments

PARTNERSHIPS. We have continued our data sharing agreements with Waze, Yelp, Develop Louisville, LOJIC, the Harvard Ash Center's Civic Analytics Network, the Louisville Downtown Partnership, the USDOT, the KY State CDO, University of Louisville's Speed School of Engineering, and the University of Pennsylvania's Master of Urban Spatial Analytics. We are always working on new partnerships with local non-profits, corporations, state agencies, and federal agencies to improve data sharing, allow access, and do analysis projects.

PUBLIC FACILITIES. We continue to have great public usage of our two facilities: the LouieLab, a co-working space connected to our offices and managed by us, and the PNC Gigabit Experience Center, in West Louisville managed by LCCC. Both have been used for open data related events like city sponsored hackathons, data governance meetings, data ethics training for government employees, public meetups, and collaborations with local and national organizations.

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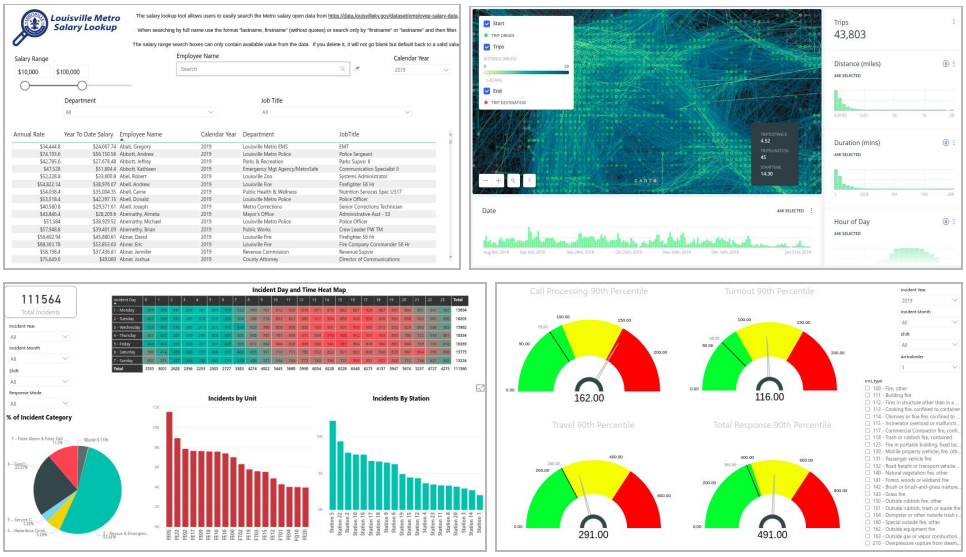
3. OPEN DATA PLATFORM

OPEN DATA SERVICES. Our Open Data Platform uses free and open source software called DKAN. We think of services that provide data to the public as part of building our open data platform. We continue to support our live data APIs into our Smart Louisville IFTTT platform, and are looking at creating new integrations between IFTTT and open data. We are constantly creating open source projects and sharing them online with residents and other governments -- see our city's two official Github repositories for more details.

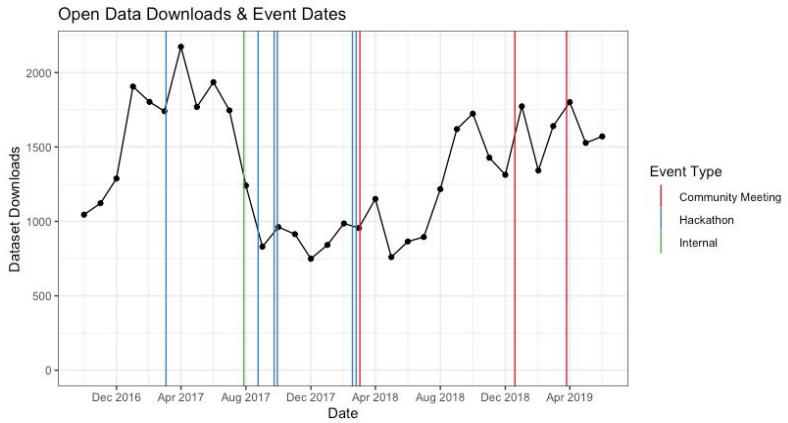
ODP VISUALIZATIONS. We worked to provide more than just raw data, adding visuals and tools to help non-technical residents understand the data, as was pointed out by a local news station WFPL. We worked with the DKAN community to add new features like public comments on each dataset, an integrated forum, API improvements, and better data visualizations on the site. We now have embedded custom interactive visualizations directly on our employee salary, dockless vehicle, and fire incident and property damage pages to name a few.



Embedded open data visualization examples

PUBLIC FEEDBACK. This year, in addition to our Open Data Contact and Open Data Gallery Submission forms we added a Data Collaboration and Partnership form. Additionally we now have an integrated feedback page where people can suggest and discuss new datasets and features, and discussions on individual dataset pages.

The CDO has also started quarterly Open Data Community Open Houses, which have included focused events for our Innovation Advisory Council, journalists, university students, and the civic hacking community. See more outreach analysis from the Sunlight Foundation's Kyra Sturgill on how Louisville aligns with their Impact Framework for open data.



Relationship of data events on open data downloads

HACKATHONS. We have organized, hosted, or participated in hackathons to drive open data usage, grow our civic tech community, and create innovative solutions for our residents. These include Code for America's Open Data Day with our newest brigade Code for Kentuckiana (CfK), a CfK civic tech hackathon, the annual Derby Hacks at the University of Louisville, an internal hackathon around data visualization and Power BI, and analog hackathons run by Ed Blayney, Michael Schnuerle, and Grace Simrall which gets people comfortable with hackathons to encourage participation and build a culture of innovation.

Code for Kentuckiana hackathon at the LouieLab

4. DATA COLLABORATIONS AND PARTNERSHIPS

OPEN GOVERNMENT COALITION. Louisville has created a framework for governments to publicly work on technical open source solutions to common problems, called the Open Government Coalition. The OGC allows a network of government agencies to manage projects together, funded and built by private companies, and hosted in the cloud. This creates projects with reproducible, impactful results, saving time and money. This work led to 2018's Breakthrough Guru award for Louisville Metro.

Open Government Coalition

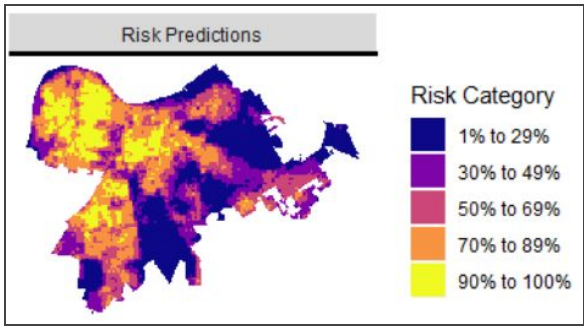
These OGC projects include the **Waze WARP**, **SpeedUp USA**, and **IFTTT Open Data Integrator.** Waze WARP is about to release version 3.0 of its platform, which adds an interactive map, APIs, and some speed and data enhancements. SpeedUp USA is now being managed by Tech Oregon who is looking to build out the tool with help from partner organizations like M-Lab.

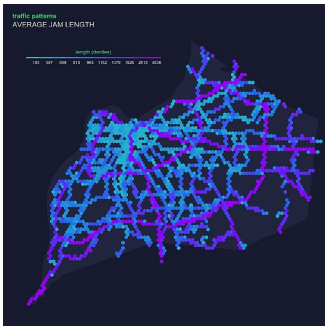
Waze WARP's interactive traffic study tool

OPEN MOBILITY FOUNDATION. Louisville is a founding member of the global non-profit, the Open Mobility Foundation (OMF). Louisville is one of 15 founding cities that are working together with private companies to develop policy, open source tools, and standards that benefit residents in the mobility space. The foundation includes private companies like Microsoft, Bird, Stae, Spin, Lacuna, and Blue Systems, and is partially funded by the Rockefeller Foundation.

Louisville hosted the inaugural meeting of the OMF in August 2019, and Jeff O'Brien is our city's representative. Michael Schnuerle serves as our backup member, and was elected by the board to be a leader on the OMF's Technology Council.

DATA ANALYSIS. Louisville was one of four cities to participate in University of Pennsylvania's annual Master of Urban Spatial Analytics (MUSA) capstone project. After doing a collision risk score analysis last year, we worked on 2 projects simultaneously this year: Fire Risk Prediction and Traffic Congestion Prediction. We are using the results of each project over the next year to improve our outreach and processes, and are tracking to measure results and impacts. This year we expect to have two more projects around latent mobility demand and gentrification.





Fire risk prediction (left) and traffic congestion prediction by time of day and weather (right)

OPEN DATA WEBSITES. The University of Louisville Christina Lee Brown Envirome Institute launched the Louisville Data Commons, an open data website designed to store and share data generated by Louisville community members and non-profit organizations. The city of Louisville is a founding supporter along with Brightside and the Greater Louisville Project. This site is the third open data site in our city, including our city site and the geospatial open data site run by LOJIC.

RESEARCH AND JOURNALISM. This year a number of universities and journalists used our open data for their projects, analysis, and stories using our open data.

- **NPR Investigations** - *Trees Are Key To Fighting Urban Heat — But Cities Keep Losing Them* - Louisville Tree Coverage
- **Miami University of Ohio** - *The effect of information salience on product quality: Louisville restaurant hygiene and Yelp.com* - Restaurant Health Ratings
- **IEEE** - *A Dataset for Performance Analysis of the Social Internet of Things* - Open data site policy
- **Springer Geography Series** - *Big data and smart (equitable) cities* - Open data and innovation
- **Harvard Law Review** - *The President's Role in Advancing Criminal Justice Reform* - Crime data
- **Crucial Connections LLC** - *Louisville Bicycle Crashes* - Collision data
- **Multicycles** - *Real-time Micromobility Devices* - based on GBFS feeds

5. INTERNAL DATA WORK

DATA STANDARDS. Louisville continues to align our data to useful data standards like MDS, GBFS, GTFS, LIVES, Waze CCP, and Open311, and is working alongside cities and communities to expand existing standards and define new ones where needed. We have created a data standard policy for how we collect Sex and Gender information, and are working on Street Addresses, Date/Time, and Race/Nationality among others. These standards help us align our data across departments, align to best practices, meet WWC recommendations, and automate our data warehousing efforts.

DATA GOVERNANCE. Our 65 person cross-departmental Data Governance team members are responsible for maintaining their department's open data, integrating into LouieStat, participating in working groups, writing data policy, and doing data tool/ethics/best practice trainings, including one by Tandem from focused on advanced Microsoft Power BI techniques.

Data Governance training session in the LouieLab on business intelligence tools

Working Groups include efforts on automation, a data inventory, data standards policy, data warehousing, data visualization, and open data policy revisions.

We had another internal hackathon this year around Power BI projects (saving paper costs, effectiveness of intervention on arrests, neighborhood displacement, and scooters) that were in progress across the city, and we worked together to move those projects forward. We were also able to run our analog hackathon for the first time outside of Louisville, this time in Boston with leaders from multiple cities.

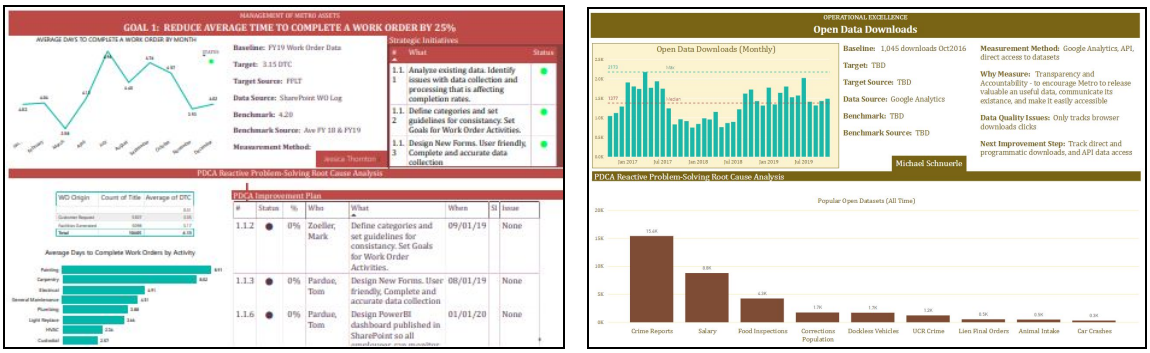
Internal hackathon around Power BI data projects

DAY OF CELEBRATION. This past December we were able to recognize our top performing Data Governance members at the Mayor's Day of Celebration. This included those who exceeded activity requirements for Data Governance and earned a Trailblazer Award, had perfect attendance, worked on our data inventory, and completed a Metro Badges track and earned 10 badges in Data Scouts or Innovation Pioneers.

Data Governance Trailblazers and awards at our Day of Celebration

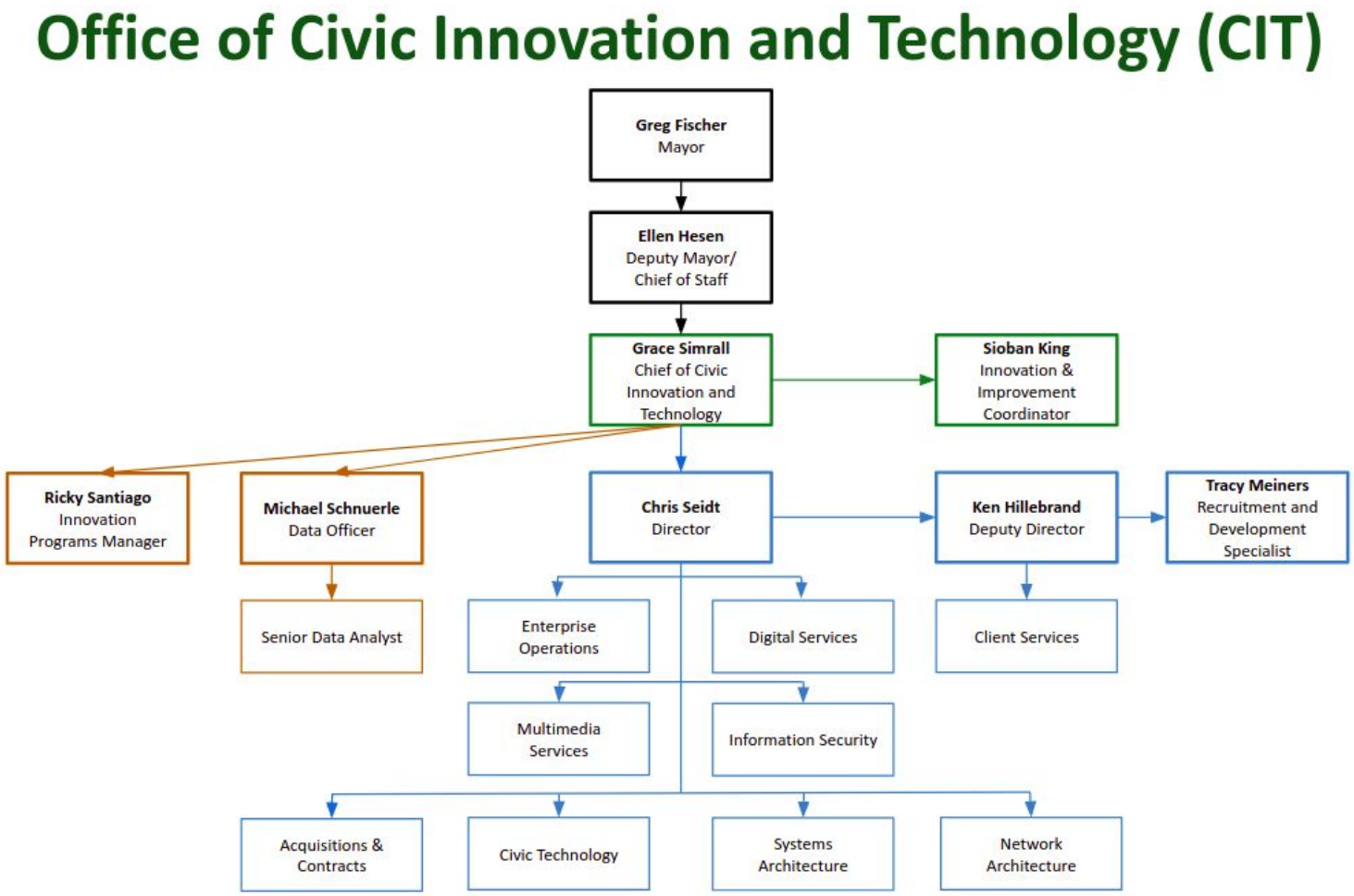
DATA ACADEMY. This year in partnership with the Office of Performance Improvement and the Office of Civic Innovation and Technology, we launched a Data Academy to train employees on the use of data analysis tools and techniques, data quality, and data visualization principles and best practices. These include curriculum on Excel, Power BI, and Data Visualizations that occur on a regular basis throughout the year, and since launching in August we've trained over 30 employees.

BUSINESS INTELLIGENCE. The Office of Civic Innovation and Technology and the Office of Performance Improvement partnered to choose one best-in-class data analysis and visualization tool for our enterprise solution. Microsoft's Power BI allows us to visualize complex datasets using the free desktop platform, and has helped improve our data quality at the source by identifying inconsistencies. We've held trainings for our Data Governance and Performance Partner teams, and incorporated its use into our bi-weekly LouieStat department meetings.



Interactive LouieStat KPIs in Power BI

NEW ALIGNMENT AND AUTOMATION. Starting in the 2020 Fiscal year (July 2019 through June 2020), the Office of Performance Improvement and Innovation (OPI²) was reorganized into two separate entities. The Office of Performance Improvement (OPI) is now its own stand-alone department. Civic Innovation merged with the Department of Information Technology (DoIT) to become the new Office of Civic Innovation and Technology (CIT).



The new alignment created by CIT allows Metro to spread the use of innovative technology into our core enterprise services and staff, puts Open Data into one department, and allows more nimble management of Innovation technical projects around data automation, application development, data warehousing, and data movement, while aligning policy around and data access, privacy, and security.

ADDITIONAL RECOGNITION. All of the above successes required the collaboration and hard work of many city employees. I would like to commend and thank Mary Hampton, Ed Blayney, Carmen Moreno-Rivera, Rebecca Hollenbach, Grace Simrall, Matt Gantner, Mike Reynolds, the department chiefs and directors, Mayor Fischer and his staff, and the members of our Data Governance Team for all of their focus and dedication to doing great data-driven work in the city. I would also like to thank our community organizations and the local press for encouraging LMG to release new and useful data and putting our data to good use for our residents.

6. CONCLUSION

Open data, public transparency, and data-driven efficiency in Louisville remain a strong and continuing priority for Mayor Greg Fischer, the employees of LMG, and the Office of Civic Innovation and Technology. LMG will continue to release new data the public values, improve existing data sets, and increase the frequency of data updates. We will drive usage and adoption by hosting public events, driving usage internally, communicating via press and social media, partnering with the civic tech community, and improving our data services. The goal is a transparent government, improved services for citizens, reduced costs, an informed and educated populace, and empowered data-driven decision making.

Respectfully submitted on September 1, 2019

Michael Schnuerle
Data Officer, Office of Civic Innovation and Technology

OFFICE OF
CIVIC INNOVATION
AND TECHNOLOGY