2019: Embracing the Future, Mobility’s Transformational Technology
President’s Letter

KRIS KNOCHELMANN

For the OKI community, 2019 was noteworthy for many reasons, not the least of which was its embrace of transformational technology.

In that spirit, I am hopeful for our region’s future, and for a transportation system that will continue to serve our more than 2 million residents.

I am equally honored to present the 2019 OKI Annual Report.

We publish this report to offer some of the ways that OKI is fulfilling its mission to provide safe, reliable modes of transportation in our region. Every year, OKI invests about $40 million and approves a half-billion dollars in projects.

As in past editions, there isn’t enough space here to highlight every achievement in 2019. With that in mind, I share with you several that best illustrate OKI’s commitment to advancing the place we call home.

First, 2019 marked OKI’s fifty-fifth anniversary as the region’s sole transportation planning organization. While quietly honoring its long service to Greater Cincinnati, OKI spent much of the year looking to the future. Staff did so by evaluating a spectrum of projects for its newest, most-forward looking long-range transportation plan.

The “2050 OKI Metropolitan Transportation Plan” will be a comprehensive blueprint projecting the transportation needs of the OKI region area for the next 30 years. It will be a revolutionary time that will usher in a new age of mobility. The OKI Board adopted the 2050 Plan in June 2020.

A critical part of the 2050 Plan is its Vision section. The technological revolution sweeping through all transportation modes requires OKI to put forth a vision of how those changes may affect our region. In its Vision, OKI extends the boundary of tradition and tests the impacts of rapid change in automation, mobility across society and shared mobility as a service.

A deeply held value, OKI also worked to advance key partnerships this past year.

For example, OKI and Uber extended their alliance through the Uber Cincinnati Mobility Lab — a collaboration formed in January 2018, and that also includes the Cincinnati USA Regional Chamber, the City of Cincinnati, Southwest Ohio Regional Transit Authority (SORTA), and Transit Authority of Northern Kentucky (TANK).

In fall 2019, GIS Manager David Shuey presented at Uber’s San Francisco headquarters, at the request of the rideshare company to learn how OKI uses data to recognize, plan for and solve transportation problems.

Having one of the world’s most technologically advanced companies ask OKI how it uses transportation data is a singular achievement for a metropolitan planning organization!

Also of note, TANK is working with Uber to develop a potential microtransit pilot to serve growing employee demands around CVG airport. The pilot would follow the completion of TANK’s 2020 Network Redesign Study, an initiative in which OKI staff was an active participant.

Across the OKI region — and the U.S. — overwhelming demand for truck parking has led to conflicts with passenger vehicles, degrading transportation infrastructure, and increased safety concerns for travelers. In 2019, OKI again turned its energy to these freight-related challenges, including with its constant data collection and conversations with national and global freight experts.

Among other initiatives, and based on OKI staff’s expertise on national freight issues, the Federal Highway Administration selected Boone County to host a Truck Parking Roundtable. The event brought together more than 60 OKI stakeholders and national truck parking experts in a daylong workshop that identified the county’s unique challenges and opportunities for solutions.

There are many more achievements throughout the 2019 Annual Report. I encourage you to explore them to see the remarkable initiatives taking place in your region.

I conclude my President’s Letter by recognizing the superb leadership that has long defined OKI. CEO Mark R. Policinski personifies this tradition. Under Mark’s guidance, OKI continues to nurture a culture of consensus and collaboration, steering this region to new levels of service and success.

Finally, I am thankful for your support. And I look forward to continued collaboration with the OKI board and staff to provide the leadership and guidance to sustain our region’s momentum.

Best Regards,

Kris Knochelmann
OKI is a public, non-profit organization under the Ohio Revised Code. Agency structure, responsibilities and authority are described in the OKI Articles of Agreement. The structure of OKI includes four standing committees that involve public officials and others in the development of plans, programs and policy adoption. These committees are the Board of Directors, the Executive Committee, the Intermodal Coordinating Committee (ICC) and the Environmental Justice (EJ) Advisory Committee.

The Board of Directors governs OKI and is responsible for regional policy decision-making. Two-thirds of the members are elected officials; the other third comprises representatives of local planning agencies, community groups, the private sector and individual citizens.

The Executive Committee serves the Board by developing consensus on area-wide or multi-jurisdictional transportation policy matters. The Executive Committee can establish policy, adopt plans, and resolve issues along with establish committees for advisory purposes. Members include an elected official from each member county’s governing body, a cross-section of local governments, and representatives from state transportation agencies, regional planning commissions and transit agencies.

2019 OKI Board Officers

T.C. Rogers  
Past President

David Painter  
Second Vice President

Gary W. Moore  
First Vice President

Kenneth F. Reed  
Treasurer

Mark R. Policinski  
Secretary

2019 OKI Board of Directors (Italic indicates Executive Committee members)

Kris Knochelmann, President
Gary W. Moore, First Vice President
David L. Painter, Second Vice President
T. C. Rogers, Past President
Kenneth F. Reed, Treasurer
Mark R. Policinski, Secretary
Andrew Aiello
Jeffrey Anderson
Robert Ashbrock
Jeffrey Aylor
Amber Bailey
Craig Beckley
Dan Bell
William Brayshaw
Amy Brewer
Robert M. Brown
Laura Brunner
Mary Burns
Thomas Cahill
Tammy Campbell
Jeff Capell
Cindy Carpenter
Charlie Clives
Ashley Combs
Brent Cooper
Claire Corcoran
Taylor Corbett
Steve Dana
Chris Dobrozs
Stephanie Summerow Dumas
Jeremy Evans
David C. Fehr
Beth Fennell
Cathy Flagg
Keith Funk
Josh Garth
Mike Gilb
Dennis Andrew Gordon

Pamela Gross
Tom Grossman
Jody Gunderson
Darryl Haley
Kevin M. Hardman
Liz Hayden
Nick Hendrix
Ted Hubbard
Edwin H. Humphrey
Shannon Jones
Greg Kathman
Eric Kearney
Katherine Keough-Jurs
Roger Kerlin
Eric Kranz
Steve Krehbiel
Donna Laake
Greg Landman
Christopher Lawson
David Linnenberg
J. Todd Listerman
Christine Matosic
Larry Maney
Mark McCormack
Robert K. McGee
Candace S. McGraw
Henry Menninger
Pete Metz
Gregory V. Meyers
Bryan Miller
Jennifer Moody
Rosalind Moore
Lawrence P. Mulligan, Jr.
Pamela E. Mullins
Raymond Nichols
James T. O'Reilly
David Okum
Brian Painter
Kim Patton

Tom Peck
Steve Pendery
Scott Pennington
David Penque
Roger Peterman
Ted Phelps
Todd B. Portune
Rick Probst
William Rachford, Jr.
Christopher Reinersman
Scott Ringo
Jonathan D. Sams
Sal Santoro
Karl B. Schultz
V. Anthony Simms-Howell
Greg Sketch
Shannon Smith
James Sunderhaus
Alexis Tanner
Neil Tunison
Charles Tassell
James Ude
Daniel Unger
Jeff Volter
Thomas Voss
Thomas Weidman
Alan Weiss
Bernie Wessel
Mark S. Welch
Gregory J. Wilkens
Michael L. Williams
Stan C. Williams
Gary Winn
Bill Woeste
Robert Yeager
David G. Young
The Intermodal Coordinating Committee (ICC) is the technical advisory committee that advises the Board of Directors and Executive Committee on technical issues related to transportation planning. The ICC provides technical review and input to staff and the Executive Committee. Members include local traffic engineers and representatives of transit agencies, utilities, community and environmental groups, and state agencies.

The Environmental Justice Advisory Committee (EJ) was established to oversee the implementation of the agency’s EJ component of the Participation Plan. The committee’s on-going work includes the review of funding applications and regional EJ efforts.

The Environmental Justice population is defined as:
- **Elderly:** Persons aged 65 or older
- **Minority Population:** Persons from every racial category except White Alone plus all Hispanic persons
- **People with Disabilities:** Non-institutionalized persons aged 18 to 64 years with any disability
- **Low Income:** Persons below the poverty level
- **Zero Car Households:** Occupied housing units for which no car is available

In addition to jurisdictional meetings, staff also participated in community engagements with organizations such as the Cincinnati Accessibility Board of Advisors, Northern Kentucky Area Development District and the annual Neighborhood Summit, where attendees shared their thoughts and opinions on autonomous vehicles via survey.

2019 also was the second year in managing and conducting quarterly meetings of the TriState Transportation Equitable Opportunity Team (TTEOT), an open forum where we share transportation best practices that serve the elderly and individuals with disabilities.

Lastly, one of OKI’s standing committees is the Environmental Justice Advisory Committee, whose purpose is to oversee the implementation of the agency’s Environmental Justice component of the Participation Plan. The committee’s on-going work includes the review and scoring of funding applications for infrastructure projects. This EJ committee is diverse and includes representation from jurisdictions as well as community leaders.
**Funding and Financing**

**2019 Distributed Funds by project type**

OKI Federal Funds Awarded in FY20 (Ohio CMAQ, Ohio STBG, Ohio TA, KY SNK) = $64,743,136

OKI Federal Funds Encumbered in FY20 (expected) = $45,920,331

- **BIKE/PED/OTHER**
  - $5,463,448

- **Transit**
  - $893,565

- **Maintenance-Reconstruction**
  - $8,453,261

- **Traffic Operations-Safety**
  - $11,707,569

- **ITS**
  - $3,413,029

- **Widening/Relocation**
  - $13,082,495

- **Access Management**
  - $938,360

- **MLK Interchange**
  - $1,000,000

- **OKI Planning**
  - $968,604

**General Operating Budget (July 1, 2018-June 30, 2019)**

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<tr>
<th>Revenue Sources</th>
<th>Percentage</th>
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<td>Federal</td>
<td>3.54%</td>
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<td>State</td>
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<td>Local</td>
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<td>Other</td>
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<thead>
<tr>
<th>Expenses by Activity</th>
<th>Percentage</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Transportation</td>
<td>83.26%</td>
<td>$4,874,398</td>
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<tr>
<td>Commuter Services &amp; Regional Clean Air Program</td>
<td>6.60%</td>
<td>$386,676</td>
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<td>Regional Planning</td>
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<td>Environmental Planning</td>
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<tr>
<td>General and Administrative Activities</td>
<td>2.67%</td>
<td>$170,667</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>83.26%</strong></td>
<td><strong>$5,854,325</strong></td>
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</table>
Innovation Across the Region

OKI, Uber Partnership Growing Via Cincinnati Mobility Lab

This past year, OKI and Uber significantly advanced their partnership through the Uber Cincinnati Mobility Lab. The lab was formed in January 2018 via an MOU with Uber, OKI, the Cincinnati USA Regional Chamber and the City of Cincinnati. The remarkable growth of OKI’s collaboration with Uber was shown when David Shuey, OKI GIS Manager, was invited to present at Uber’s San Francisco headquarters in fall 2019.

Uber was keenly interested in learning how OKI uses data to recognize, plan for and solve transportation problems. Having one of the world’s most technologically advanced companies ask OKI how it uses transportation data is a singular achievement for a metropolitan planning organization. During OKI’s visit to its headquarters, Uber also invited Shuey and OKI CEO Mark Policinski to participate in the Uber Security Event.

OKI used its partnership with Uber to extend the ride-hailing company’s technological power to benefit the region. OKI was instrumental in the infusion of transit trips into the Uber app in Cincinnati. This addition enables Uber users to plan their trips with a better understanding of mode options. The outcome of this combining of real-time data will increase cross usage of transit and Uber, enhancing both modes. The outcome of this combining of real-time data will increase cross usage of transit and Uber, enhancing both modes.

In another effort to infuse transit and Uber technology, OKI has been actively advocating for the addition of transit payments into the Uber app. When successful, Cincinnati will be one of only a few cities in the world with this aggregated technical capability.

OKI worked with the City of Cincinnati and the Cincinnati USA Regional Chamber to advance a transit study of the region conducted by Fehr & Peers. In partnership with TANK and SORTA/Metro, the study focused on a strategy to solve future transit service problems. OKI’s participation led to an invitation to present to an international audience. OKI’s Strategic Initiatives Manager, Robyn Bancroft, represented OKI, Uber and all our regional partners at the 2019 RailVolution Conference.

It is worth noting that TANK is working with Uber to develop a potential microtransit pilot to serve growing employee demands around CVG airport. The pilot would follow the completion of TANK’s 2020 Network Redesign Study, of which Bancroft is an active participant.

So successful:
✓ City made changes permanent
✓ Crashes down 39%!
Innovation Across the Region

FRIEGHT AND OHIO RIVER

OKI Catalyst for Truck Parking Solutions, Marine Highway Designation

Urban Goods Movement
Since adoption of the Regional Freight Plan in August 2011, OKI has continued to collect, analyze and share the most current freight data. At [https://freight.oki.org](https://freight.oki.org), interactive maps and dashboards have been created to relay surface transportation data for rivers, roads, rails and runways. OKI staff update and incorporate new data from multiple local, state and national sources, including the third annual revision to the nationally acclaimed, award-winning Central Ohio River Information System (CORIS). Links to OKI's three state freight plans are also available from this website.

Through constant data collection, as well as conversations with national and global freight experts, OKI took the following actions alongside key regional partners in 2019 to address major freight-related challenges.

Collaborating to Identify Actionable Truck Parking Solutions
Across the OKI region, the overwhelming demand for and inadequate supply of truck parking has led to truck conflicts with passenger vehicles, degradation to transportation infrastructure, as well as safety concerns for travelers. From 2010 to 2018, the Boone County Sheriff’s Office reports that Commercial Motor Vehicle (CMV) property damage collisions increased 84 percent. And CMV accidents resulting in injuries increased 92 percent.

In the first nine months of 2019 alone, Boone County had four CMV fatality accidents. Based on these statistics, the county was averaging two CMV-related accidents a day. In lieu of legal parking spaces, truck drivers are parking along the public right-of-ways, such as roadway shoulders, interstate exit/entrance ramps, and on private property/commercial parking lots. This has been especially true in Boone County, home of CVG, and well documented in the 2018 Boone County Transportation Plan.

In 2019, OKI partnered with Boone County Fiscal Court to address these overwhelming truck parking issues. OKI staff served on Boone County's Truck Parking Task Force. Staff also assisted the judge/executive and fiscal court staff in drafting meeting agendas to ensure invaluable information could be shared openly by every member, while also moving the group toward action. Second, based on OKI staff's expertise on the current state of national freight, the Federal Highway Administration selected Boone County to host a Truck Parking Roundtable. This event brought together more than 60 OKI stakeholders and national truck parking experts in a daylong workshop that identified Boone County's unique challenges and opportunities for solutions. Third, the result of the Truck Parking Roundtable was a multi-faceted, nine-point action plan of new policies, advocacy efforts, and operational and capital improvements, providing a road map to Boone County and regional public/private partners for implementing community-supported real solutions.

Forging New Partnerships to Market the Ohio River
OKI worked with CORBA, REDI Cincinnati, Tri-ED, Northern Kentucky Chamber of Commerce, and University of Cincinnati to develop the “Port Snapshot.” This document marks the first time economic development experts partnered with seasoned marine freight professionals and transportation planning staff to turn practical freight data, statistics and company testimonials into an attractive and robust marketing tool to advance river-based business retention, expansion and attraction. The document was publicly distributed in January 2019 in print and electronic formats.

Setting the Stage to Compete and Secure New Funding
In 2019, OKI served as the Designated Project Public Sponsor and assisted in the development and submission of a USDOT America’s Marine Highway (AMH) project designation application entitled “M-70 Barge Service in the Ports of Cincinnati and Northern Kentucky and Beyond.” The designation project’s purpose is to promote regional economic growth while shifting existing and anticipated freight traffic from the region's congested interstate highways to the Ohio River. Project designation is a requirement for AMH grant funding eligibility. To date, 61 percent of funding applications have been awarded by MARAD.

MARAD American Marine Highway Three Step Process

A typical weekday before 5 p.m. and the TA Truck Stop in Florence, Ky. is at full capacity.

The Ports of Cincinnati & Northern Kentucky moves more freight than any other inland port in the United States. The Ports of Cincinnati & Northern Kentucky

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MARAD American Marine Highway Three Step Process
A healthy transportation system has long been a driving force behind our region’s quality of life and economic prosperity. OKI has a vision to develop innovative, sustainable and multimodal transportation solutions that support the goals and economy of the Greater Cincinnati area. OKI’s planning efforts and funding investments have continued to ensure that regional transportation systems are reliable, flexible and affordable, connecting people safely to one another, to their workplaces, to the institutions that matter to them and to the services on which they depend.

Today’s agency efforts also work to lay the foundation for a transportation system that increasingly relies on system management, operations, Mobility as a Service (MaaS) and a network that includes connected and autonomous vehicles. These principles will usher in an era of enhanced mobility, safety and efficiency for moving people and goods.

For the past four years, OKI has been working to ensure the success of our region by leading an intense focus on transformational technologies to:

1 | Understanding the cutting-edge of technology
   • Advance Preparations for the OKI 2050 Metropolitan Transportation Plan (2050 Plan). To “define” how the 2050 Plan would consider and incorporate transformational transportation technologies — something never before done, OKI staff conducted research to draft projection timelines for the adoption of a variety of transportation technologies (i.e. electric vehicles, autonomous vehicles, Transportation Network Companies, e-commerce, congestion pricing, etc.). These projections were applied to support assumption made in the 2050 Plan’s future regional transportation scenarios.
   • Staff Professional Development. To inform and educate staff on the ever-evolving technologies under development and implementation, staff attended the Connected and Autonomous Vehicle 101 National Roadshow Seminar hosted by KYTC-Frankfort in Louisville, Ky., and the 2019 AV Conference in Novi, Mich., alongside OEMS, technology firms, university researchers and market analysts, in addition to participation in numerous transportation technology webinars.

2 | Identifying local, national, and global partners to accomplish forward-thinking solutions
   • Uber Mobility Lab. One of OKI’s most public collaborations has been the Uber Mobility Lab, which was formed in January 2018 via an MOU with the Cincinnati USA Regional Chamber and City of Cincinnati. In 2019, the Mobility Lab members partnered on several ventures to address critical regional issues such as workforce accessibility, efficient public transit service, and improved safety and travel times.
   • Uber Mobility Lab (Status: Completed). Uber hired transit consultants Fehr & Peers to conduct a transit study in partnership with SORTA/Metro and TANK and provided recommendations for developing a strategy for the future of transit service.

3 | Invest in transformational and innovative plans, programs and projects
   • Visits with Technology Experts. Through OKI’s network of partnerships, staff had the opportunity in to meet with and learn directly from technology innovation experts in AV, UAV and EV technology.
   • Uber Mobility Lab. OKI’s interest is to study current and future impacts of TNCs (Transportation Network Companies)’ ridesharing as a modal choice upon traffic volumes, origin/destination pairs, and travel times. Uber comprises a small, but growing percentage of overall regional trips. However, data being shared is ensuring OKI considers TNCs as potential components of our Regional Traffic Demand Model.
   • Uber/TANK Microtransit Pilot. (Status: Pending). TANK is talking with Uber to develop a potential microtransit pilot to serve growing employee demands around CVG airport, following the completion of their 2020 Network Redesign Study.
   • Cincinnati/Northern Kentucky International Airport / OKI / University of Cincinnati MOU. In 2019 the partners discussed several opportunities on the potential application of autonomous vehicles to move cargo and/or passengers. CVG conducted extensive internal research and examination to identify a number of pilot demonstrations for implementation “in the terminal” and “within the fence.”

With signed MOUs in place, this partnership between mayors and staff along the US 27 corridor from Newport to Highland Heights, including St. Elizabeth Hospital and Northern Kentucky University, continued bi-monthly meetings to seek strategic and innovative ways to improve infrastructure and support economic development.

The OKI 2050 Metropolitan Transportation Plan is the first time Connected and Autonomous Vehicles (CAVs) have been incorporated into the agency’s planning efforts. This line graph shows the range of possibilities. Read more about the 2050 Vision at 2050.oki.org/vision.

For more than 50 years, OKI has led investments in mobility projects having significant public safety, travel time, reliability, environmental, and economic impacts for moving goods and people throughout the Tri-State. OKI strives to advance this critical role through the application of technology to address regional issues in more efficient and lasting ways. In 2019 staff worked with local agencies to result in the following projects awarded by OKI that sought to incorporate technology:

• Bus Replacements – Transit Authority of Northern Kentucky (SNK Award: $1,785,544). To increase fuel savings, security, safety, and real-time bus tracking, TANK will replace five full-size, fixed route diesel buses with 40-foot, low-floor boarding configuration buses. The new vehicles will be equipped with increased technological advancements that reduce emissions and improve fuel economy including; bike racks, Seon Digital video recording systems, three additional security cameras, LED turning lights, wheel chair lifts, and CAD/AVL prewiring, enhanced Allison Fuelsense 2.0 transmission programming, cornering lamps, power and heated mirrors, powered adjustable pedals, improved A/C system, Selective Catalytic Reduction (SCR), electric cooling fans, aluminum radiator, and high efficiency, air-cooled alternator.

Ensuring that the upgraded fleet is equipped with the newest GPS technology is imperative to providing accurate data to both TANK Dispatch center and passengers. Additionally, the buses will be used for Automated Passenger Counters, which help provide stop-level ridership information that feeds the service planning and scheduling processes.

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| 4 | CAV Saturation Rates by Year
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Innovative Technologies

MOBILITY, TRANSIT, ROADWAYS, SIGNALS

Innovative Technologies

MOBILITY, TRANSIT, ROADWAYS, SIGNALS

Cincinnati, this ITS project entails the installation of trunk fiber optic cable and network communications equipment to create a traffic signal network capable of handling smart city technology. It is broad enough to incorporate existing regional dynamic message infrastructure, and future autonomous vehicle (AV) and connected vehicle (CV) systems. The project will incorporate CCTV and video detection to aid in data collection and adaptive traffic controls where necessary. The project establishes the framework for a transportation network of the future.

Intersections will be upgraded with the most current models and new functionality, including CCTV cameras to monitor traffic from the central control center. Intersections along main corridors will also have signal performance measure units (based upon the Purdue Metric). These units will evaluate the traffic conditions and make recommendations on how to improve signal timing to increase vehicle throughput and minimize travel delay time.

In addition, with the introduction of e-bikes, Red Bike is using electric-assist technology to provide a low carbon, motorized active transportation option that encourages individuals to choose bicycles for transportation. E-bikes make bicycle transportation a more practical option by decreasing the required physical effort, increasing the ability to travel longer distances, and mitigating the topographical challenges in Greater Cincinnati.

The Red Bike Expansion Project will continue the expansion of Greater Cincinnati’s bike share program with more stations and more electric-assist bicycles (e-bikes). The expansion plan will expand the Red Bike network both to include several new neighborhoods surrounding the current system area, including many underserved neighborhoods, and increase the density of stations in the urban core where bike share is most used and most effective at increasing mobility.

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To improve traffic flow, signal optimization, this project includes the introduction of several new technologies and high-level intelligent transportation systems (ITS) upgrades for 94 traffic signals throughout the city, including a central-based traffic signal system utilizing fiber optic communication and traffic control center to monitor traffic signals in real time.

This project will upgrade signals along US 42/Mall Rd/Ewing Blvd.

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In addition, with the introduction of e-bikes, Red Bike is using electric-assist technology to provide a low carbon, motorized active transportation option that encourages individuals to choose bicycles for transportation. E-bikes make bicycle transportation a more practical option by decreasing the required physical effort, increasing the ability to travel longer distances, and mitigating the topographical challenges in Greater Cincinnati.

The Red Bike Expansion Project will continue the expansion of Greater Cincinnati’s bike share program with more stations and more electric-assist bicycles (e-bikes). The expansion plan will expand the Red Bike network both to include several new neighborhoods surrounding the current system area, including many underserved neighborhoods, and increase the density of stations in the urban core where bike share is most used and most effective at increasing mobility.

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In 2019, OKI launched its unmanned aerial vehicle (UAV) program. This program has the potential to transform the value of many of the transportation and environmental datasets OKI collects and maintains. Two OKI staff members, GIS Manager David Shuey and GIS Analyst Gabriela Waesch, obtained their FAA Part 107 remote pilot certification. They will be responsible for conducting all UAV flights. Missions flown during 2019 included collecting existing condition imagery for the Western Hills Viaduct, and pre-construction imagery for the Gateway Redevelopment Area in Montgomery, Ohio. Additionally, the technology was used to confirm truck-parking conditions at rest areas on I-71/75 in Boone County, Ky.
Travel demand is one of the critical factors considered in transportation investment decision making. The travel demand model is a computer tool used to estimate traffic volume and speed based on information such as land use patterns, socioeconomic characteristics of the population and employment, and the composition and configuration of the transportation system. The model forecasts volume and speed on roadway segments and transit ridership on transit routes. The model is constantly being monitored, updated and enhanced.

In 2019, OKI deployed the next generation of the travel demand model, namely the Activity-Based Model. The model was validated based upon observed traffic counts, speed and travel pattern data.

Traffic Demand Model a Tool for Transportation Investment

In 2019, OKI collected turning movement traffic counts at 19 intersections using a special video recorder called Movision. The data is being used for the congestion management program.

The journey-to-work trip flow data from Census Transportation Planning Package was analyzed for travel demand model validation and system evaluation. Passive data, including the truck flow data from American Trucking Research Institute, the StreetLight trip origin-destination data, and the INRIX speed data was compiled and analyzed for model validation and congestion management.

In 2019, OKI continued intensive traffic count data collection as well as compilation and analysis of travel pattern data. Traffic counts and travel pattern data are critical input for travel demand model design, as well as transportation system performance evaluation, congestion management, and transportation planning studies.

OKI finished radar traffic counting device installation on seven Ohio River Bridges in 2019: Brent Spence, Daniel Carter Beard, Combs-Hehl, Carroll Cropper, Clay Wade Bailey, John A. Roebling, and the Taylor-Southgate. OKI stores and archives this permanent traffic count data, which is being analyzed and used for the region’s transportation planning and system performance evaluation.

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The new model was used as critical input to the OKI 2050 Plan and to serve traffic forecast needs for many roadway projects in OKI region including:

- Millikin Road Interchange at I-75
- Western Hills Viaduct
- Mall Road Connector
- Reading Road in Cincinnati
- SR 450 Development

Travel Demand Model a Tool for Transportation Investment

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Data & Demographics

GIS Highlights: Apps, Awards and Uber Presentation

Providing detailed Geographic Information Systems (GIS) data, analysis and web mapping applications for OKI’s many programs, including the 2050 Metropolitan Transportation Plan, was a major focus for OKI’s GIS Department during 2019.

The year also saw the GIS Department develop an Electric Vehicle Charger Siting app, which allows users to map and analyze new electric vehicle charging station locations and proximity to existing chargers, nearby amenities, traffic counts data and alternate fuel corridors. As a bonus, the results of the analysis can be exported and used for inclusion in grants to the Ohio EPA.

A Bicycle Story Map was created for Bike Month in May of 2019. The map highlights the important role bicycles play in the region’s transportation system. It also illustrates how, when implemented as part of a multi-modal plan, they can provide a low cost alternative to a car, reduce pollution, improve health, and reinvest in neighborhood-level change.

Also, OKI GIS Developer Brandon Flessner’s “The Geography of Uber” map won the ‘Best Map for Cartographic Design’ at the Kentucky Association of Mapping Professionals 2019 Conference in Louisville in October 2019.

Related to OKI’s Ohio River Trail work, OKI GIS Analyst Gaby Waesch designed a map that was published in author Nancy Stearns Theiss’ book “A Tour on the Underground Railroad along the Ohio River.”

In 2019, a Kenton County Transportation Plan viewer was also developed, allowing stakeholders to evaluate a draft projects list based on project type and priority, evaluate if projects meet demonstrated performance measure needs (safety, pavement condition and level of service) and provide access/service to area job hubs.

Staff presented at Uber’s Visualization Nights, an Urban Planning Workshop, in San Francisco in September 2019. The presentation focused on how OKI utilizes new and innovative datasets to inform, validate and solve a variety of transportation issues, with specific examples including connecting people to jobs, new modes of transportation and driving economic development.

Tracking Commuter Traffic Patterns

Over many decades, the counties of the OKI Region have become more and more interconnected. As the outer suburbs continued to grow, people were increasingly more likely to commute from Hamilton County to the surrounding counties. In contrast, people in the surrounding counties were increasingly more likely to commute within their own county, instead of commuting into the city.

However, a new trend has emerged in this decade. There are still many people commuting between counties in the OKI region. But the resurgence of our urban core has led more people and employers to choose to be in Hamilton County. This has led to a stabilization of the commuting patterns, with more people both living and working in our core county.

Census data show that these trends vary, of course, between the different OKI counties. In Hamilton County, more than three-quarters of the population lives and works within the county. On the other end of the spectrum, only about one-third of Campbell County residents work within the county, with another third of residents crossing the Ohio River daily into Hamilton County.

And how people in the OKI region get to work also varies by county. Within Hamilton County, about 80 percent of commuters drive to work alone in their own car. That means about one out of five workers gets to work by another means, including carpooling, walking or public transit. Meanwhile, about 87 percent of Warren County commuters drive to work alone. But as the region continues to grow and invest in public transportation, shifts in commute mode and location of residence and work will have profound effects on how our transportation system works. OKI will continue to update and analyze this data so that we make the very best planning decisions for the future of our region.
Identifying Growth

Population and Employment Outlook: A Growing Urban Core

As the Cincinnati metropolitan area has expanded over the years, growth in population and employment has radiated through Hamilton County into the surrounding areas. Hamilton County consistently lost population during the last three decades of the 20th century; but this trend has reversed over the course of the past several years. In fact, Hamilton County has been one of the fastest growing counties in the region, as people have returned to the urban core — and employers are following them. This trend is expected to continue through 2040 and, possibly, beyond.

Evidence of our growing urban core is seen in the Census Bureau’s population estimates. The City of Cincinnati has added the fourth most residents of any municipality in Ohio during this decade. And, in the last few years, Cincinnati’s growth has been even stronger. From 2018 to 2019, the city added about 1,600 new residents, bringing its total population gain for the decade to about 7,000. This represents the first decade of growth for the city since the 1940s — and it comes at a time when many of our peer cities throughout the Midwest are still losing population.

Recent new development in Downtown, Over-The-Rhine, and Uptown is well known to many people across the region. Perhaps less known, however, the Cincinnati neighborhoods of East Price Hill, Northside, Walnut Hills and Oakley are also seeing new construction and residential renovations.

And the growing urban core is not just confined to Cincinnati. Just as many neighborhoods in the city are seeing growing median incomes, larger shares of college-educated residents, and growing populations — so are the river cities of Northern Kentucky. New apartment buildings are popping up from Covington to Bellevue, as more people are enticed by the walkability, sense of community and beautiful architecture of these places. The map on the next page shows projected growth in households between now and 2050, highlighting the growth on both sides of the Ohio River.

In addition to population growth, employment growth is higher across the region, reversing a decades’ long trend of employers leaving the urban core. In fact, between now and 2050, more than half of all employment growth between 2015 and 2050 is expected to occur in Hamilton County, primarily in the City of Cincinnati and along the I-75 and I-71 corridors. This resurgence of the urban core is also expected to increase the regional share of employment in Campbell County.

While growth is still strong in suburban locations like Boone County, West Chester and Mason, our urban neighborhoods are seeing a much larger share of regional growth — a success story for those communities and for our region.

Performance Measures

FEDERAL MANDATES

OKI Remains Responsible for Air Quality Conformity of EPA

Congress adopted the Clean Air Act Amendments (CAAA) in 1990 to address the country’s major air pollution problems. The CAAA regulates six pollutants: sulfur dioxide, nitrogen dioxide, lead, carbon monoxide, particulate matter and ozone.

The U.S. Environmental Protection Agency (EPA) designated seven counties in the Cincinnati area as a nonattainment area for ozone under the 2015 ozone standard. In Kentucky, these counties include Boone, Campbell and Kenton; and in Ohio, Butler, Clermont, Hamilton and Warren counties.

Nonattainment means that the area is not meeting the national ambient air quality standard and, therefore, must demonstrate transportation conformity.

Transportation conformity is a mechanism to ensure that federal funding and approval are given to those transportation activities that are consistent with air quality goals as contained in the State Implementation Plans (SIPs).

OKI was able to successfully demonstrate air quality conformity for the region's Metropolitan Transportation Plan (MTP) and Transportation Improvement Program (TIP) using the US EPA MOVE5 model.

Fed: MPOs Must Track Progress of Transportation System

The federal transportation regulations require states and MPOs to establish performance and outcome-based, multimodal programs in order to strengthen the U.S. Transportation System. The objective: to ensure that states and regions invest resources in projects that collectively make progress toward achieving national transportation goals, and track the progress by setting targets OKI has set targets through board resolutions consistent with each of our state DOTs. These targets apply to safety, pavement and bridge condition, congestion, travel time reliability and air quality. Staff continually monitors and reports on progress through the TIP and Metropolitan Transportation Plan. So far, all measures are tracking positively.
OKI’s Clean Air Program Uses Education to Spread Message

OKI’s Regional Clean Air Program continues to provide valuable information to the community, businesses and the media concerning air quality topics through the “Do Your Share for Cleaner Air” campaign. OKI promotes the clean air message by educating the public on the harmful effects of ozone and particulate matter pollution, while also teaching individuals how they can help to reduce air pollution.

OKI RideShare Program’s Goal: Improve Daily Commute for All

OKI’s RideShare program continues to remove single occupant vehicles from the region’s roadways. The goal of the program is to make trips to work easy, less costly, more environmentally-friendly and more convenient.

RideShare is committed to improving the daily business commute for everyone in the OKI region through innovative transportation solutions, such as carpooling and vanpooling.

RideShare provides commuters an opportunity to save money on the normal “wear and tear” of a vehicle, including gas, tires, mileage and maintenance. The program also offers flexibility that fits commuters’ lifestyle by allowing them to share a ride as infrequently as once a week or as often as every day.

OKI Bicycle, Pedestrian Programs Support Region’s Communities

OKI’s regional bicycle program encourages bicycle use for transportation purposes. Trails and the suitability of streets for cycling are illustrated in the OKI Bike Route Guides for Ohio and Northern Kentucky counties and the City of Cincinnati.

This information is important because the majority of cycling takes place on traditional roads, which often lack a dedicated space for cycling. OKI provides funding for numerous trail and bike projects to communities in the region.

The regional pedestrian program similarly encourages the development of a more walkable region through recommendations and resources outlined in the plan. In support of the walkability concept for communities, OKI supports Safe Routes to School projects and the Bike Share Program through the award of Transportation Alternatives Funds.

Phase 3 of the Wasson Way National Trail project is expected to begin in summer 2020. Partnering with the City of Cincinnati, OKI provided nearly $1 million in federal transportation funds for this phase, which will link Madison Road to Marburg Avenue. When completed, the Wasson Way Trail Network will be a bicycle and pedestrian corridor using trail and signed bicycle routes connecting Uptown and Fairfax.

The trail will be located primarily within an unused railroad corridor and existing city right-of-way. Photos courtesy of Wasson Way.
OKI Continues to Support Mobility Options for Seniors, Disabled

Enhanced Mobility of Seniors and Individuals with Disabilities Program
OKI awarded more than $1.3 million to agencies across the region in 2019 for vehicles and activities specifically for improving mobility for seniors and individuals with disabilities. These awards were used to buy 10 new paratransit vehicles; funds to provide vehicle cameras and dispatching software; three mobility management programs serving residents in Cincinnati, Butler County and in Northern Kentucky; and operating costs for two transit agencies serving areas of four counties in the region.

OKI Coordinated Public Transit – Human Services Transportation Plan
The Coordinated Public Transit – Human Services Transportation Plan (Coordinated Plan) is a unified, comprehensive strategy for public transportation service delivery. Specifically, it identifies the transportation needs of seniors and individuals with disabilities; lays out strategies for meeting these needs; and prioritizes services for these target populations.

In 2019, OKI continued to engage private and non-profit transportation providers, human service agencies, and other stakeholders. Profiles for 36 private non-profit agencies were updated to inform the 2020 Coordinated Plan update process. OKI updated demographic data representing concentrations of senior and disabled populations in the region as a basis for creating the strategies for the plan update.

The Mobility Survey was conducted November through December for seniors and individuals with disabilities to provide input on their transportation needs, and that was used to inform the 2020 Coordinated Plan. Community service agencies assisted OKI in sharing links to an online survey and printed hardcopies. Responses were received from more than 300 individuals representing all counties in the tristate region. More service options for trips during evenings and weekends remain the most common need identified.

The Tristate Transportation Equitable Opportunity Team (TTEOT), facilitated by OKI staff, includes members that represent a broad spectrum of transportation planners and transportation providers working diligently to identify how best to continue to address the transportation needs of the Elderly and Individuals with Disabilities. TTEOT met during the year holding workshops to discuss these growing needs and gauge the most effective and feasible strategies for addressing them.

In 2019, OKI awarded more than $1.3 million for vehicles and activities toward improving mobility for seniors and individuals with disabilities.
OKI Strategic Regional Policy Plan, Other Initiatives Maintained

The OKI Strategic Regional Policy Plan (SRPP) continued to inform communities and decision makers across the region this year. OKI maintained the plan, housed at www.howdowegrow.org, by advancing Community Strategic Energy Plans; updating the Fiscal Impact Analysis Model program to better respond to local community needs; and providing technical support to communities updating their local comprehensive plans. (To stay up-to-date, please visit the plan and visit our Facebook page and Twitter feed.) The SRPP encourages consistent local comprehensive planning by rewarding it with additional consideration when awarding funding for transportation projects. The comprehensive plan is the fundamental tool for ensuring development is consistent with community resources and priorities. OKI also encourages local planning efforts by providing resources like the Elements of an Effective Local Comprehensive Planning Guide, maps, and data, and tools, and even limited staff involvement, as requested. In 2019, OKI conducted a survey of local governments to report on the State of Comprehensive Planning in the OKI Region. Seventy five percent of local governments in the region have a comprehensive plan. Of those communities, nearly half of those plans have been adopted or updated in the last five years. While this shows that many communities engage in planning, there is room for improvement in keeping plans current. OKI continued to participate in organizations with regional sustainability missions to help ensure alignment of regional planning goals. Staff provided leadership to the Green Umbrella Greenspace Action Team and led conversations centered on developing a greenspace prioritization model. Staff also served on the Green Umbrella Data and Metrics Committee, providing annual reporting on the progress of the Greenspace Action Team. In 2019, OKI supported Taking Root by serving on its board, facilitating the 2019 Tree Professionals Seminar engaging 75 attendees, and providing technical support for a successful grant application to the Duke Energy Foundation. The $10,000 grant will be used to plant 157 trees in the communities of Norwood, Hamilton and Fairfield. Staff was also elected to the Board of Directors of Northern Kentucky Urban and Community Forestry Council (NKUCFC), and currently serve on Program and Urban Tree Canopy committees. The OKI Strategic Regional Policy Plan continued to inform the OKI Regional Comprehensive Plan (SRPP) and was adopted by political jurisdictions in the fall of 2019 of 143 applicable jurisdictions in the OKI Region. The charts to the left breakdown the prevalence of planning in the region.

The table to the right shows the percentage of plans in the OKI Region that feature the listed topics in a meaningful way. We followed a written methodology in determining if a plan met the criteria for a given topic so the study can be repeated in the future with comparable results.

In other initiatives, OKI’s Land Use Commission Steering Committee hosted three informative Regional Planning Forum events during 2019, and which drew more than 120 planners across the region. The forum is a regional outlet for sharing information, experience and expertise among planners and those in related disciplines and industries. Affordable housing issues were a focus for 2019. Forums featured regional experts and agencies working to address them, and were among our highest attended so far.

Throughout 2019, the OKI Greenspace office has continued to maintain and provide data on our regionally significant environmental resources to regional partners. The OKI Environmental Viewer provides local communities interested in these resources the opportunity to integrate OKI data into their planning activities. OKI launched the Environmental Consultations process to inform the 2050 Metropolitan Transportation Plan with a webcast in October of 2019. Fifty two experts representing 43 state and local agencies were convened and engaged to provide their expertise in this process. This year, emergency management agencies were included in the consultation, so they could provide feedback on issues such as stormwater, extreme weather events, and resilience issues relating to the environment and transportation. An Environmental Consultations presentation was given at the Southwest Emergency Management Association of Ohio Section Meeting with 10 organizations in attendance.

Throughout 2019, the OKI Greenspace office was busy with the following initiatives:

- OHIO SECTION OF CITY & COUNTY MANAGERS - The OKI Greenspace office continued to maintain and provide data on our regionally significant environmental resources to regional partners through the OKI Environmental Viewer. The OKI Environmental Viewer provides local communities interested in these resources the opportunity to integrate OKI data into their planning activities.
- TAKING ROOT - OKI supported Taking Root by serving on its board, facilitating the 2019 Tree Professionals Seminar engaging 75 attendees, and providing technical support for a successful grant application to the Duke Energy Foundation. The $10,000 grant will be used to plant 157 trees in the communities of Norwood, Hamilton and Fairfield. Staff was also elected to the Board of Directors of Northern Kentucky Urban and Community Forestry Council (NKUCFC), and currently serve on Program and Urban Tree Canopy committees.
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OKI environmental planning expertise was nationally recognized as expertise was provided to the federal EPA for peer reviews. Staff reviewed and scored grant proposals for the 2019 U.S. EPA STAR grant program. Funding was awarded to plan and aid contaminated sites clean-up, and for readiness programs for extreme weather events.

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OKI environmental planning expertise was nationally recognized as expertise was provided to the federal EPA for peer reviews. Staff reviewed and scored grant proposals for the 2019 U.S. EPA STAR grant program. Funding was awarded to plan and aid contaminated sites clean-up, and for readiness programs for extreme weather events.
In 2019, OKI engaged designated management agencies in our Ohio counties to gather data to inform updates to the Water Quality Management Plan (WQMP). These agencies are the entities providing sanitary sewer treatment as identified by the OKI WQMP and are responsible for specific water pollution control as stipulated by the Clean Water Act. OKI consulted with each agency to ensure the WQMP information on plant capacity and geographic coverage is current and discussed future expansion plans.

OKI's Water Quality Program also upheld long-standing staff support commitments to the:
- **Groundwater Committee**, which provides technical education to public water system operators, regulators and others concerned about drinking water protection
- **OKI Regional Conservation Council**, a collegial forum for county conservation districts of the Tri-State
- **Ohio River Paddlefest**, more than 2000 people paddled down the Ohio in August

Through 2019, OKI actively supported the Green Umbrella Green Infrastructure Group to design and install 3 rain gardens at Winton Hills Elementary, Roll Hill Elementary, and North College Hill Middle School with the help of a Duke Energy Grant to Green Umbrella.

In the first half of 2019, OKI digitized home sewage treatment system (HSTS) locations for Butler County and completed a prioritization analysis to identify locations of HSTS with the greatest threat to clean water.

OKI continued to promote treesandstormwater.org, a nationally applicable planning tool developed by OKI in 2017. This tool was featured at the Taking Root Tree Professionals' Seminar held at OKI in December, and was presented at the 2019 Ohio River Flood Risk Management Workshop in Kenton County, the National River Rally Conference in Cleveland, and was the subject of a national Forester University Webinar in February.

OKI collaborated with Ohio EPA and the other area wide agencies in Ohio to produce a short film explaining Water Quality Management Planning history and requirements of the Clean Water Act. OKI produced the film, created the narrative, and conducted many of the interviews featured in the film seen here [https://youtu.be/7HwT55qaQ_A](https://youtu.be/7HwT55qaQ_A).

Beginning in 2018, OKI has partnered with River City Paddle Sports in Louisville and members of the Paddlefest leadership team to develop a national water trail and bicycle route along the Ohio River from Portsmouth, Ohio, to West Point, Ky.

In June 2019, staff participated in the inaugural paddle of the Ohio River Recreation Trail. During this nine-day expedition, more than 40 people paddled or pedaled all or part of the trail from Portsmouth to Louisville. Those on the water travelled in 30-ft voyageur canoes stopping in river towns along the way to meet with local officials and promote the trail, including New Richmond, Ohio, Cincinnati, Ohio, Aurora, Ind., and Ludlow, Ky. Some towns hosted the adventurers by providing places to camp with food from local restaurants and other organizations.

In 2019, OKI led efforts for developing an online digital guide that includes safety features such as the location and direction of commercial traffic on the river. The partnership was awarded a U.S. National Park Service in-kind technical assistance grant to help plan and develop the trail following the standards of the NPS Rivers, Trails and Conservation Assistance Program.

Update: The “Ohio River Recreation Digital Guide” was launched June 22, 2020. The free tool is available at [www.OhioRiverRecreationTrail.org](http://www.OhioRiverRecreationTrail.org). The guide identifies amenities such as marinas, boat ramps, fuel docks, campgrounds, parks, bike trails and historical points of interests on and along the Ohio River Recreation Trail’s 274-mile stretch, from Portsmouth, Ohio, to West Point, Ky. It also includes links to the websites of river communities, enabling travelers to explore lodging and restaurant options, as well as special events and other attractions of each town.
Fiscal Impact Analysis Program Provides Land Use Scenarios

The OKI Fiscal Impact Analysis Model (FIAM) Partnership Program provides jurisdictions in the region with an ability to evaluate the fiscal impact posed by multiple land use scenarios. By estimating both revenues and service costs associated with land use activities, communities applying the FIAM tool in their decision making are armed with a better understanding of how a proposed land use change is most likely going to affect their annual budget.

Fiscal impact analysis should be employed in conjunction with any land use planning exercise, like comprehensive plans and special area plans.

In 2019, OKI updated the model calculations in order to improve efficiencies with ongoing maintenance in an effort to significantly reduce program cost. Lower operation costs are hoped to increase the number of local communities that can employ the FIAM as a planning tool.

In December, OKI initiated a pilot with the City of Oxford to test the new model using five development scenarios on a 45 acre parcel of land the city owns. This pilot has validated the new model framework. Preparations are underway to launch the new FIAM program — FIAM 2.0 — in summer 2020.

Energy planning investigates issues centered on energy use and delivery in the community; identifies how these issues intersect with land use patterns and transportation choices; and forms strategies to improve the efficiency of energy use in the community. Energy planning at the local level becomes the convergence of planning for many other issues. Energy planning and initiatives have a large role in quality building standards; emergency management planning (since most community-wide emergency events involve the disruption of power delivery); facility cost and fiscal projections; air quality; and land use.

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