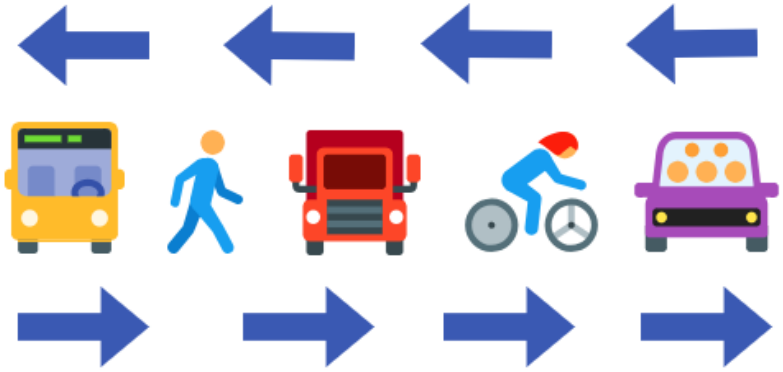
CONGESTION MANAGEMENT PROCESS

A Multi-Modal Approach



for the

Louisville/Jefferson County KY-IN Metropolitan Planning Organization

KIPDA
Kentuckiana Regional Planning and Development Agency

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INTRODUCTION

What is a CMP?

Congestion management is the application of strategies to improve transportation system performance and reliability by reducing the adverse impacts of congestion on the movement of people and goods where possible and desired. A congestion management process (CMP) is a systematic and regionally accepted approach for identifying and managing congestion to provide accurate, up-to-date information on system performance and to assess alternative strategies for congestion management that meet state and local needs.

A CMP is federally required under 23 CFR 450.322 of the Fixing America's Surface Transportation (FAST) Act in metropolitan areas with a population exceeding 200,000, known as Transportation Management Areas (TMAs). The Louisville/Jefferson County KY-IN Metropolitan Planning Area (MPA) qualifies as a TMA. Federal requirements also state that, in all TMAs, the CMP shall be developed and implemented as an integrated part of the metropolitan transportation planning process. In TMAs designated as ozone or carbon monoxide non-attainment areas, the CMP takes on a greater significance. Federal law prohibits some projects resulting in a significant increase in carrying capacity for single occupant vehicles (SOVs) from being programmed in these areas unless the project is addressed through the region's CMP.

The CMP is an on-going process, continuously progressing and adjusting over time as goals and objectives change, new congestion issues arise, new information sources become available, and new strategies are identified and evaluated.

The Purpose of the CMP

Efforts to address congestion in urban areas place demands on the transportation planning process and on funding availability. A CMP may offer many benefits to the regional transportation system as a whole. Congestion concerns inevitably relate to community objectives regarding transit use, livability, and land use. The CMP is a planning tool where congestion data analyses are centralized and readily available for identifying congestion strategies and evaluating impacts. When identifying the goals and actions to address congestion, other planning goals should be considered as well in order to create a unified and efficient approach. The CMP is not intended to be a stand-alone process, but is meant to be an integral part of a larger overall planning process.

Benefits of the CMP include:

A Structured Process for Analyzing Congestion Issues

The CMP creates a process for incorporating congestion issues into the metropolitan transportation planning process. It provides a framework to respond to congestion in a consistent, coordinated fashion. The CMP both informs and receives information from other elements of the planning process.

More Effective Resource Allocation

The CMP provides a mechanism for identifying short, medium, and long-term strategies for addressing congestion on a system-wide, corridor-level, and site-specific basis. It helps to ensure the development of appropriate congestion management strategies that fit within the context of the community and help to support the regional vision.

The Role of the CMP for the Metropolitan Planning Organization

Metropolitan Planning Organizations, or MPOs, such as the KIPDA Louisville/Jefferson County KY-IN MPO, are charged with carrying out a comprehensive, continuing, and cooperative (3-C) process to support the identified needs, vision, and goals for the region. The Metropolitan Transportation Plan (MTP) and the Transportation Improvement Program (TIP) are the primary tools the Transportation Policy Committee uses to implement their adopted vision and goals, and integration of the CMP into these products is key to the comprehensive planning process. Both the CMP and MTP are data driven planning efforts that rely on an understanding of existing conditions in order to make forecasts of future conditions. The CMP provides an opportunity to consider detailed data concerning the operation of transportation facilities in the region.

As part of the CMP, congestion management strategies are identified, assessed, programmed, implemented, and evaluated for effectiveness. The process through which this is accomplished consists of the activities listed below. Inherent in this process is the ability to update the CMP in conjunction with other elements of the overall metropolitan transportation planning process.

- Establishing Regional Objectives
- Defining the CMP Network
- Establishing Performance Measures
- Identifying sources and methodology for Data Collection
- Identifying Congestion
- Developing Congestion Mitigation Strategies
- Reviewing Strategy Effectiveness

GOALS and OBJECTIVES

The following goals and objectives are from the KIPDA Metropolitan Transportation Plan, Connecting Kentuckiana (anticipated adoption August 2019), and are the goals that are applicable to congestion management. Incorporating these goals into the CMP is essential to maintaining consistency throughout the MPO's planning process, and encourages a multi-modal approach to mitigating congestion.

Transit

Improve public transit connectivity to identified Community Access Clusters, including, but not limited to, high density employment, high density residential, high density retail, commerce centers, and access to education.

- By 2040, and where opportunities for growth exist, increase by 20% the percent of land area within identified clusters of Community Access, high density employment, high density medical, high density shopping, high density housing, and schools served by public transit.
- Increase the number of occupied spaces in Park and Ride Lots by 40% by 2040.
- By 2040 increase the number of park and ride lots with dedicated bicycle access by 10%.
- By 2040 increase the number of park and ride lots with pedestrian access by 20%.

Non-Motorized (Pedestrian)

Improve the connectivity of the pedestrian network.

- By 2040, increase by 10% pedestrian walkways within identified Community Access Clusters (including, but not limited to, high density employment, high density residential, high density retail, and Access to Education clusters) and to public transit stops.

Non-Motorized (Bicycle)

Improve the connectivity of bicycle facilities.

- By 2040, increase by 10% the number of miles of dedicated bicycle facilities within identified Community Access Clusters, high density employment, high density medical, and high density shopping and within 1 mile of the boundary, and near schools by adding new facilities, filling in gaps in existing facilities, and improving access to transit stops on functionally classified roadways.

Safety

Increase safety for all users.

- By 2040, reduce by 20% the ratio of all crashes to regional Vehicle Miles Traveled, with high priority given to reducing crashes involving bicycles and pedestrians.

Congestion

Manage and reduce roadway congestion where appropriate.

- Maintain or improve current Level of Service on freeway and interstate roadway miles with a current Level of Service of D or worse through 2040.
- Maintain or improve current Level of Service on arterial roadway miles with a current Level of Service of D or worse through 2040.

Multi-Modal

Increase the availability and efficiency of person based multi-modal options.

- Increase system wide transit ridership by 20% by 2040.
- Reduce by 20% the identified gaps in pedestrian walkways along functionally classified roadways by 2040.
- Reduce by 20% the identified gaps in bikeways along functionally classified corridors by 2040.

Freight

Ensure timely and efficient movement of freight within, departing, and entering the region.

- Maintain or improve current Level of Service on roadway miles included on the KIPDA Freight Network through 2040.
- By 2040, reduce by 10% the number of locations on the KIPDA Freight Network and within 1.0 miles of identified clusters of freight distributors where roadway geometry (turning radii, lane width, shoulder width, roadway curvature, etc.) contributes to delay or hinders freight truck access to and from destinations.

CMP NETWORK

The CMP Network is an important tool in the Congestion Management Process. Comprised of certain roadways in the Louisville/Jefferson County KY-IN Metropolitan Planning Area (MPA), the Network provides a manageable yet significant framework for:

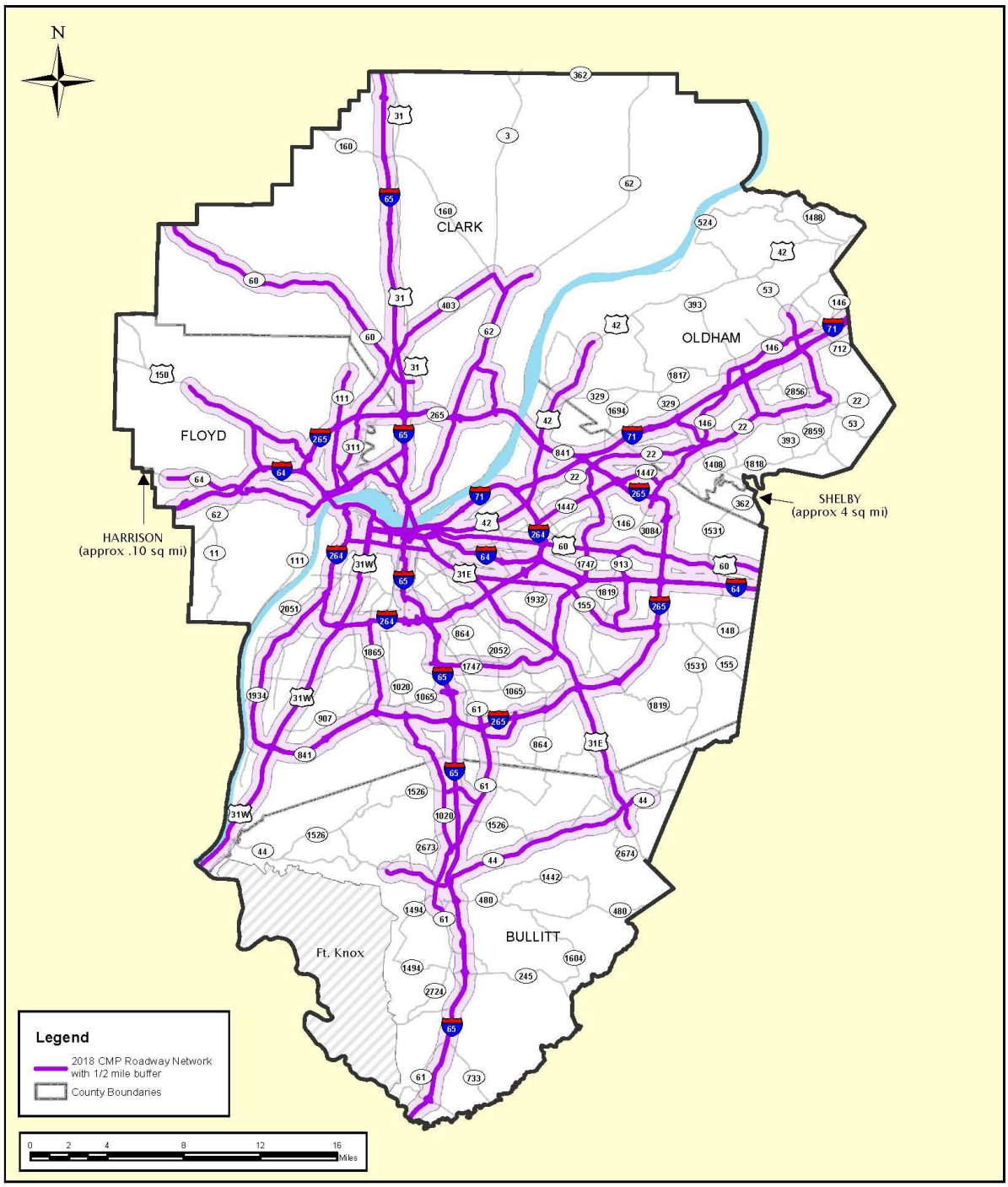
- Developing a snapshot of overall congestion in the Louisville KY-IN MPA
- Collecting and analyzing data in a reasonable, consistent, and sustainable manner
- Evaluating implementation strategies at the corridor and regional levels
- Analyzing evolving congestion levels and introducing modifications to the CMP, including the CMP Network, as deemed appropriate
- Generating projects that may mitigate congestion

While congestion in the KIPDA area is not limited to the CMP Network, the ability to focus congestion mitigation efforts within the CMP format establishes a means for identifying, tailoring, and analyzing mitigation strategies to the KIPDA area so that a more thorough assessment of their impacts may occur. This evaluation may also inform efforts to address congestion through CMP strategies on non-CMP network corridors.

Using the Roadway Functional Classification System, KIPDA has elected to define the CMP Network to include the following facilities:

- Interstates
- Freeways and Expressways
- Principal Arterials
- Minor Arterials located within the KIPDA area and north of I-265 (and north of I-64 in southern Indiana) that have an interchange with the interstate system
- The National Highway System as defined by the Indiana Department of Transportation and the Kentucky Transportation Cabinet
- Roadway segments that fill an obvious gap in the CMP Network as defined above

A map of the CMP Network described above may be found on the next page.



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LOUISVILLE (KY-IN) METROPOLITAN PLANNING AREA
CMP ROADWAY NETWORK

KIPDA

Map 1: CMP Network

PEFORMANCE MEASURES

Federal legislation (MAP-21 and the FAST Act) requires KIPDA to transition to a performance-driven, outcome-based program that focuses on national transportation goals. KIPDA has developed a Performance Management Plan that incorporates the federally-required performance measures as well as MPO-developed performance measures that address specific issues within the KIPDA region.

The following are the performance measures set forth by the KIPDA Transportation Policy Committee that are applicable to congestion management:

CMP PERFORMANCE MEASURES	
Safety	
S6	Crash Rate
Transit	
T1	Transit Ridership
T6	Number of Park and Ride lot spaces occupied during peak hours
T7a	Number of Park and Ride lots with pedestrian access
T7b	Number of Park and Ride lots with dedicated bicycle access
T8	Number of commuters in the Ticket to Ride program
Non-Motorized	
N2a	Reduce gaps in the existing pedestrian network
N2b	Reduce gaps in the existing bicycle network
Motor Vehicle Access	
V1	Level of Travel Time Reliability (LOTTR) on the Interstate
V2	Level of Travel Time Reliability (LOTTR) on the non-Interstate NHS
V3	Maintain or improve level of service on Interstates at LOS D or worse
V4	Maintain or improve level of service on arterials at LOS D or worse
Freight Movement	
F1	Maintain or improve roadways on the KIPDA Freight Network that are LOS D or worse
F3	Truck Travel Time Reliability (TTTR) on the Interstate

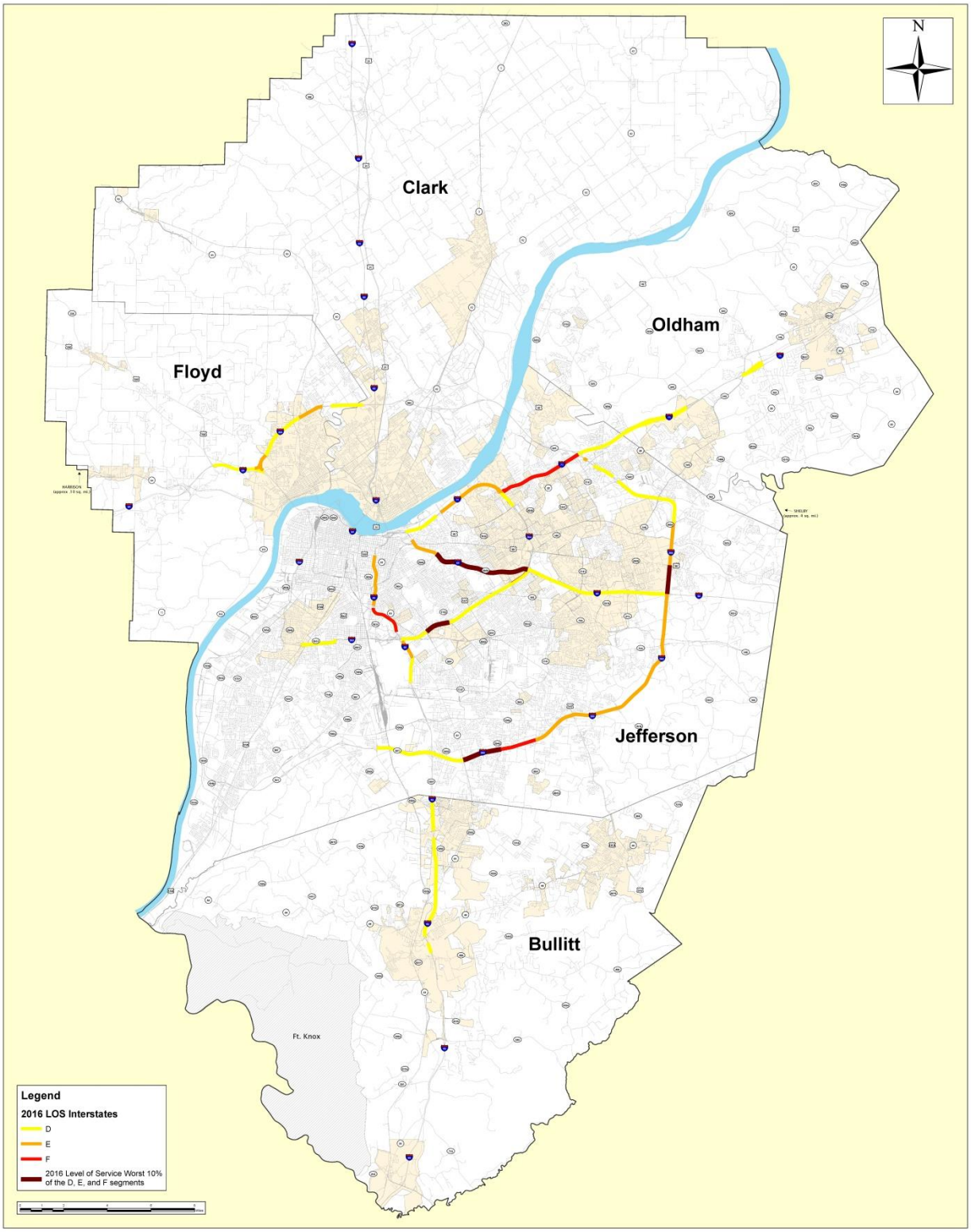
These performance measures relate to reducing congestion, and targets established for these measures may be found in the KIPDA Performance Management Plan. The strategies discussed in this document have the potential to support achievement of those targets.

IDENTIFYING CONGESTION

As a part of the identification of issues for the Connecting Kentuckiana Metropolitan Plan Update, a thorough analysis of congestion in the region was performed. In an effort to identify the roadways in the Louisville/Jefferson County KY-IN Metropolitan Planning Area (MPA) with the highest levels of congestion, segments along all interstate, arterial, and collector roadways were assigned a level of service (LOS). This LOS was based on a comparison of the most recent daily traffic count on each segment of a roadway to the estimated daily capacity of that segment. The capacity of a segment is based on the geometric configuration (i.e. the type of roadway, the number of lanes, the spacing of traffic signals, etc.) of the roadway and the methods described in the Highway Capacity Manual. The LOS is typically reported as a letter grade, A through F, with LOS A representing free-flowing traffic conditions, LOS F representing significant congestion, and the other letters representing the levels of congestion in between.

The process of assigning the LOS for all segments region-wide that are functionally classified as interstates, freeways, arterials, or collectors identified over 100 segments with an LOS of F. In order to identify the most congested segments amongst them, the Volume to Capacity (V/C) Ratio was also calculated using the same assumptions used in the identification of the LOS. The segments were ranked based on the V/C Ratios. The Top 10% of all segments that have an LOS of D or worse have been identified as the High Congestion Roadway Segments in this analysis.

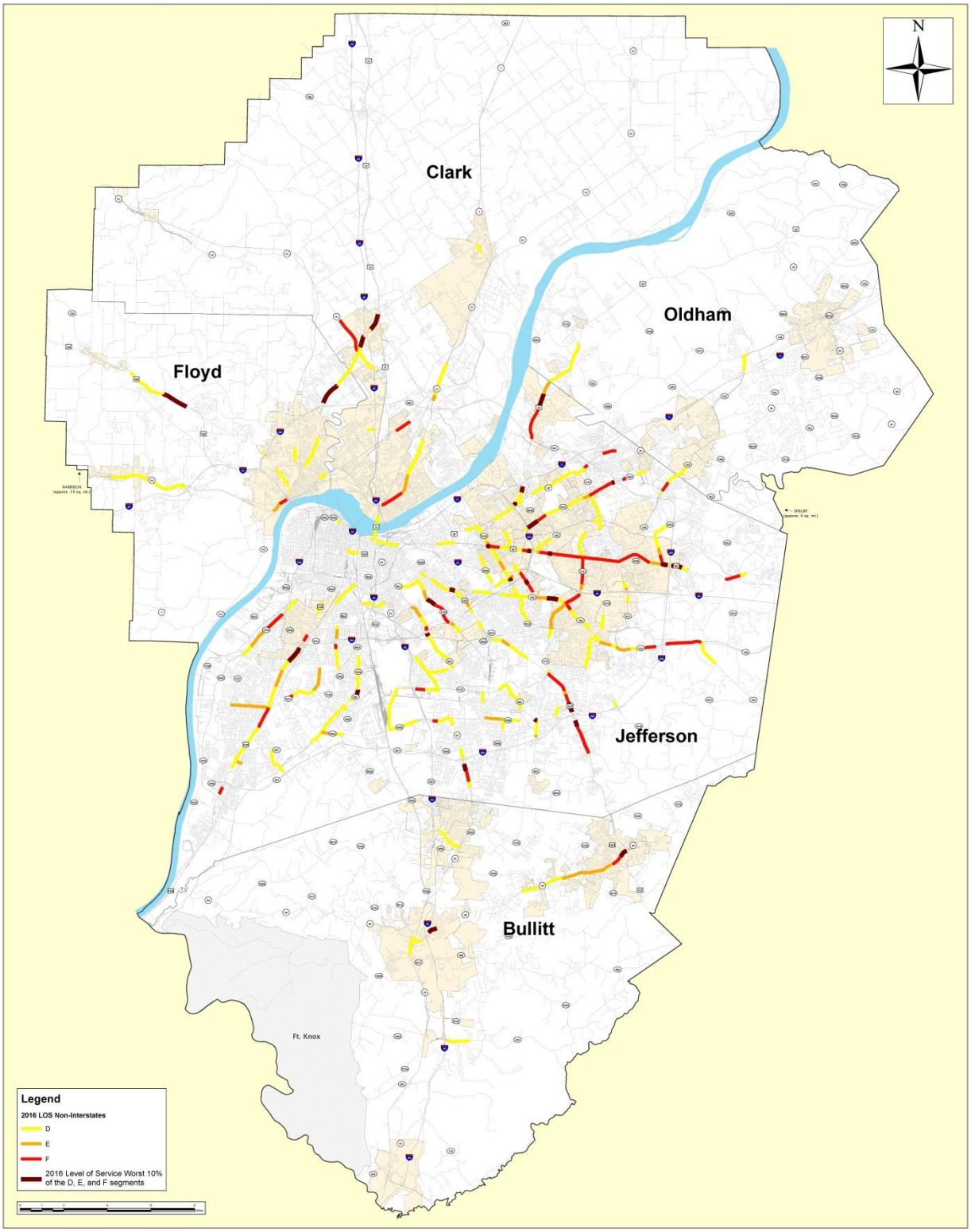
Maps showing congested segments are shown on the following pages.



LOUISVILLE (KY-IN) METROPOLITAN PLANNING AREA
2016 LEVEL OF SERVICE INTERSTATES

KIPDA

Map 2: 2016 Level of Service, D, E, F & Worst 10% Congested Segments: Interstates



Map 3: 2016 Level of Service, D, E, F & Worst 10% Congested Segments: Non-Interstates

TAD-LEVEL CONGESTION ANALYSIS

Roadway congestion is typically analyzed at the very local level: at intersections, at interchanges, and along the segments in between these locations. Analyzing the roadways using these methods can provide indications of isolated issues, but it does not help to indicate if congestion at a specific location is potentially due to other factors, including the congestion that may exist nearby, or whether the congestion at the isolated location is part of a bigger problem.

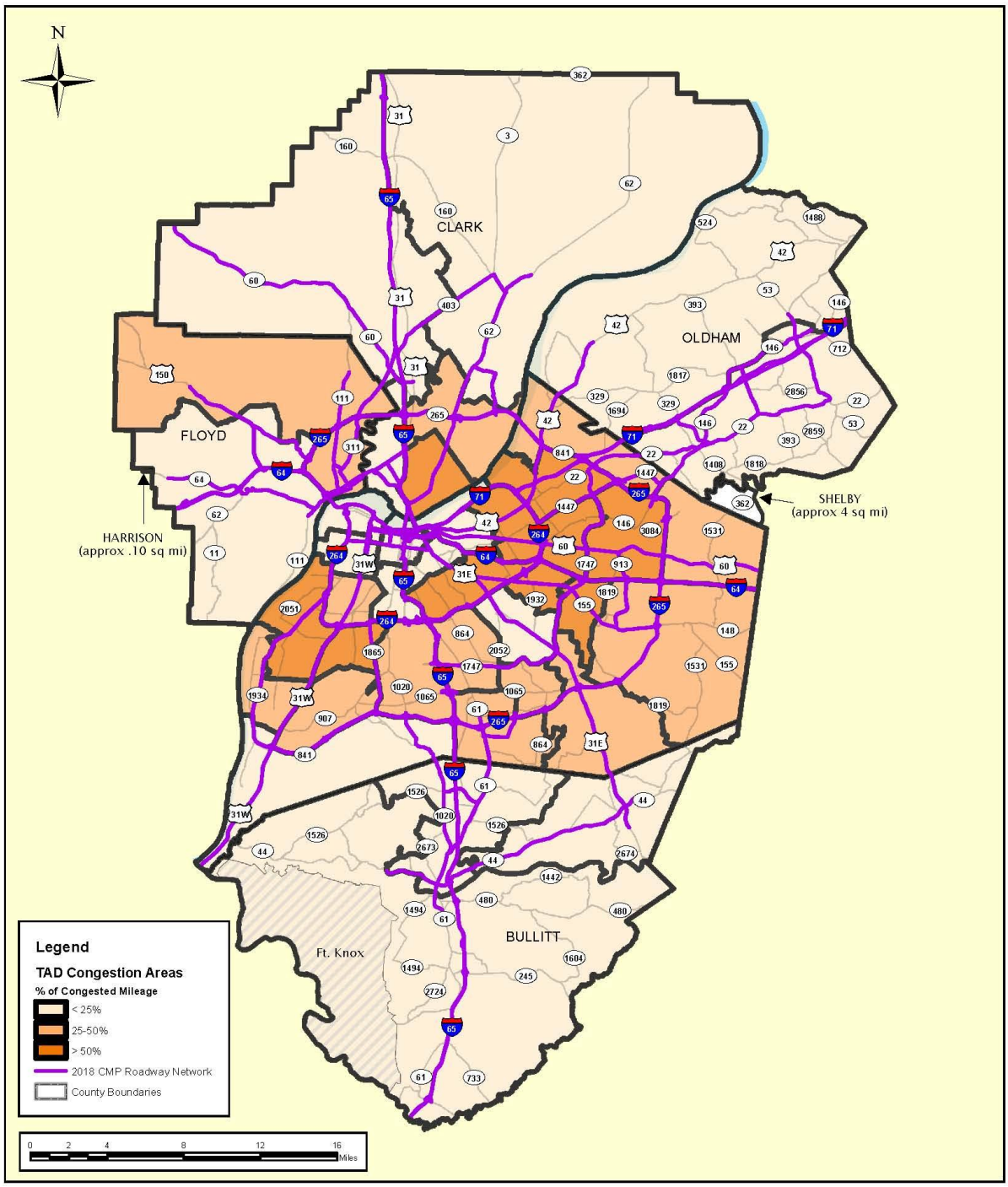
As an extension to the planning-level estimates of Level of Service on roadways, a process has been developed that uses the delineation of Transportation Analysis Districts (TAD) to help to demonstrate which areas might be experiencing widespread congestion. TADs are larger geographic areas composed of an aggregation of Transportation Analysis Zones (TAZ). The metric used to measure congestion at the area level is the percentage of roadways within the TAD that are congested (operate at Level of Service D or worse).

The process is described below:

1. Estimate the planning-level level of service for all roadways that are functionally classified as collectors and arterials.
2. Calculate the number of miles of roadways that were analyzed in (1) that are located in each TAD.
3. Calculate the number of congested (LOS D or worse) miles of roadways that were analyzed in (1) that are located in each TAD.
4. Divide the number of congested miles (3) by the number of total miles (2) to generate the percentage of congested miles within each TAD.
5. The TADs were categorized based on the percentage of congested miles:
    - Significant Congestion: Greater than 50 % of miles in a TAD are congested
    - Moderate Congestion: Between 25 and 50% of miles in a TAD are congested
    - Slight Congestion: Less than 25% of miles in a TAD are congested

A map showing the level of congestion of each TAD is shown on the following page:

The TAD Level Congestion Analysis will prove a good planning resource when considering the CMP Congestion Management Strategies that are more applicable on a regional scale. This would include concepts such as transit (elements of transit can also be applied at the corridor level), vanpools, staggered work hours, etc.



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LOUISVILLE (KY–IN) METROPOLITAN PLANNING AREA
TAD CONGESTION ZONES
ON THE CMP NETWORK

KIPDA

Map 4: TAD Congestion Zones

CONGESTION MANAGEMENT STRATEGIES

Identification and assessment of congestion mitigation strategies is an essential component of the CMP. The data and congestion analysis provide the framework for identifying congestion issues on or near the CMP network or in a High Congestion Zone in the KIPDA MPA. The following section is not an exhaustive listing of possible strategies to mitigate congestion, but does offer an outline of the various strategies used and encouraged in the KIPDA region. The strategies that have been selected are in alignment with the goals and objectives outlined in this plan, and offer recommended solutions to effectively manage congestion.

Local Context of Strategies

Strategies should fit into the context of the community, include public involvement, and take into consideration which solutions are appropriate for a specific corridor, development, or intersection. For example, high density, mixed use, urban areas are often pedestrian friendly environments with multi-modal connections. Strategies utilized in these areas will differ from ones implemented in suburban or industrial areas. Similarly, strategies to address freeway or job center congestion will differ from corridors that do not serve a high volume of commuter traffic.

Bicycle and Pedestrian

Providing a supportive pedestrian environment includes improvement and expansion of bike and pedestrian facilities. Some of these improvements include sidewalks, multi-use paths, street furniture, transit shelters, bike lanes, shared wide curb lanes, and bicycle parking and storage. In 2016, KIPDA staff collected a bicycle and pedestrian facility inventory on all roads in the MPA classified as Arterial and above. The inventory is updated periodically and is available on the KIPDA Online Resource Center. For more information refer to the *KIPDA Bicycle & Pedestrian Resource Guide*.[1]

Transit

Improving transit accessibility, expanding transit services, and improving transit operations increases the efficiency of the transit system, therefore making it a more attractive travel option. "The Transit Authority of River City (TARC) provides public transportation in the Greater Louisville area with bus routes in Jefferson, Bullitt and Oldham counties in Kentucky and Clark and Floyd counties in Indiana. TARC currently runs 41 routes, owns and operates 89 paratransit vehicles, and 230 buses."[2] Two-thirds of all trips taken are for work or school; reducing traffic congestion during high commuter travel times.

Park and Ride

Park and Ride facilities serve as collection areas for people to transfer to higher occupancy vehicles. Often these parking lots have connections to public transit options that allow roadway users to leave their car or bike and transfer to a bus, rail system, or carpool for the remainder of their commute. Park and ride facilities benefit congestion and air quality by reducing the number of vehicles on the road, usually during peak travel times and on highly traveled corridors. Locations of official Park and Ride lots are available on the KIPDA Online Resource Center.

[1] To be completed August 2018.

[2] https://www.ridetarc.org/about/mission

Rideshare

Ride sharing is the practice of sharing rides or transportation, especially by commuters, typically in the form of carpooling and vanpooling. Ridesharing can be formal or informal and reduces the number of single occupant vehicles on the roadway which leads to less congestion. Ticket-to-Ride is the ridesharing program in the Louisville/Jefferson County KY-IN Metropolitan Planning Area (MPA). This program helps organize carpools and vanpools. The only requirement for utilizing this program is that a person must either work and/or reside within the KIPDA nine-county region which expands beyond the boundaries of the MPA. Efforts center on carpooling, bike-pooling, and vanpooling while providing incentives for "alternative mode" commutes.

Transportation Systems Management and Operations

Transportation systems management and operations "refers to multimodal transportation strategies to maximize the efficiency, safety, and utility of existing and planned transportation infrastructure."[3] Management and Operations strategies encompass many activities, such as:

- Traffic Incident Management
- Traffic Signal Coordination
- Transit Signal Priority
- Bus Rapid Transit
- Freight and Work Zone Management
- Special Event Management
- Road Weather Management
- Congestion Pricing
- Managed Lanes
- Ridesharing and demand management programs
- Electronic Toll Collection
- Transit Smart Cards

Management and Operations is also connected to planning and infrastructure considerations such as access management, street network layout, and intersection design. Examples include:

- Use of Roundabouts
- Right-Turn Slip Lanes
- Median Islands
- Four-Way Stops
- Turning Lanes

For more information refer to the *KIPDA Transportation Systems Management & Operations Resource Guide*.[4]

[3] Grant, M., Rue, H., Trainor, S., Bauer, J., Parks, J., Raulerson, M., Rooney, K., and Suter, S. (2012). *The Role of Transportation Systems Management & Operations in Supporting Livability and Sustainability: A Primer* (FHWA-HOP-12-004). Washington, D.C.: United States Department of Transportation, Federal Highway Administration.

Intelligent Transportation Systems

Intelligent Transportation Systems (ITS) technologies advance transportation safety and mobility and enhance productivity by integrating advanced communications-based technologies into transportation infrastructure and into vehicles. ITS encompasses a broad range of wireless and traditional communications-based information and electronic technologies.[5] Examples include:

- Electronic Toll Collection
- Ramp Meter
- Red Light Camera
- Traffic Signal Coordination
- Transit Signal Priority
- Traveler Information Systems

For more information refer to the KIPDA Regional ITS Architecture Report.

Roadway Capacity Adding

These strategies address "adding more base capacity to the road network, such as adding additional lanes and building new highways, as well as redesigning specific bottlenecks (such as interchanges and intersections) to increase their capacity. Given the expense and possible adverse environmental impacts of new single-occupant vehicle capacity, management and operations strategies should be given due consideration before additional capacity is considered."[6]

- Constructing New HOV or HOT Lanes
- Removing Bottlenecks
- Intersection Improvements
- Center Turn Lanes
- Overpasses or Underpasses at Congested Intersections
- New Travel Lanes

[4] To be completed July 2018.

[5] Barbaresso, J., Cordahi, G., Garcia,D., Hill, C., Jendzejec, A., and Wright, K., (2014). *USDOT's Intelligent Transportation Systems (ITS) Strategic Plan 2015-2019* (FHWA-JPO-14-145). Washington, D.C.: United States Department of Transportation, Federal Highway Administration, Joint Program Office.

[6] Grant, M., Brown, B., Day, M., Winick, R., Bauer, J., Chavis, A., and Trainor, S., (2011). *Congestion Management Process: A Guidebook* (FHWA-HEP-11-011). Washington, D.C, United States Department of Transportation, Federal Highway Administration.

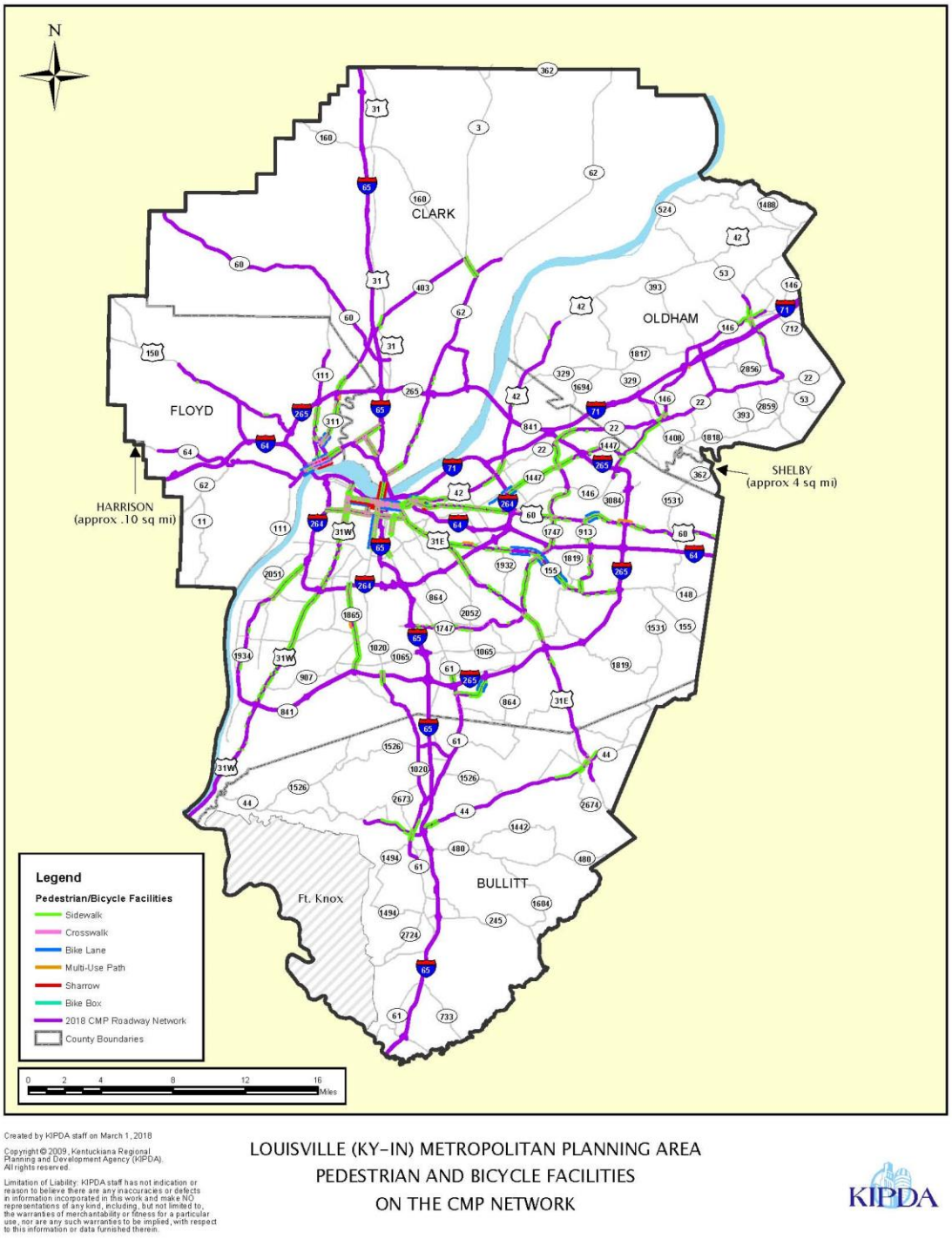
DATA COLLECTION

The following is a list of data that KIPDA staff will maintain and update periodically to support the CMP. The majority of this data will be available to the public on the KIPDA Online Resource Center. Project sponsors will be encouraged to utilize this data when developing projects.

Data	Source	Last Updated	Next Update
CMP Network	KIPDA	February 2018	Every 4 years
Traffic Counts (Level of Service)	KIPDA	Using 2016 data	Yearly
Travel Time Data	National Performance Management Research Data Set (NPMRDS)	July 2018	Yearly
Crashes	Kentucky Data: Kentucky Collision Analysis for the Public (crashes) and KYTC Planning Highway Information Database (VMT)	January 2018	Yearly
	Indiana Data: ARIES Collision Data (crashes) and INDOT Traffic Data (VMT)	January 2018	Yearly
Bicycle and Pedestrian Inventory	KIPDA	October 2017	Ongoing, as-needed basis
Transit Ridership	TARC	February 2018	Yearly
Transit Routes and Stop Locations	TARC	February 2018	Yearly
Park and Ride Lots	TARC	April 2018	Ongoing, as-needed basis
Vanpool Routes	KIPDA, Ticket to Ride	April 2018	Yearly
Regional ITS Architecture	KIPDA	May 2017	Every 4 years
Transportation Systems Management & Operations	KIPDA	May 2018	Every 4 years

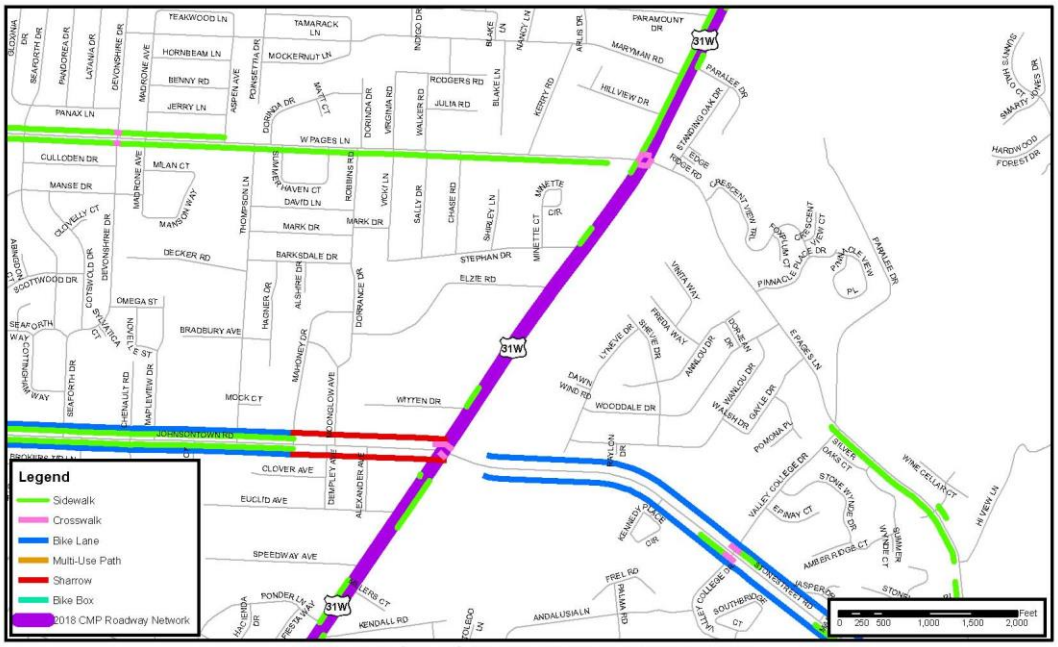
The following maps highlight much of the data that may prove helpful when it comes to implementing the strategies in this document and developing projects that mitigate congestion on the CMP Network. Interactive versions of these maps, as well as other data that KIPDA has collected and analyzed, are available on the KIPDA Online Resource Center.

The following map displays bicycle and pedestrian facilities on the CMP Network within the KIPDA MPO region. Locations on the CMP Network that lack bicycle and/or pedestrian facilities may be areas where the construction of new facilities could prove helpful in mitigating congestion.



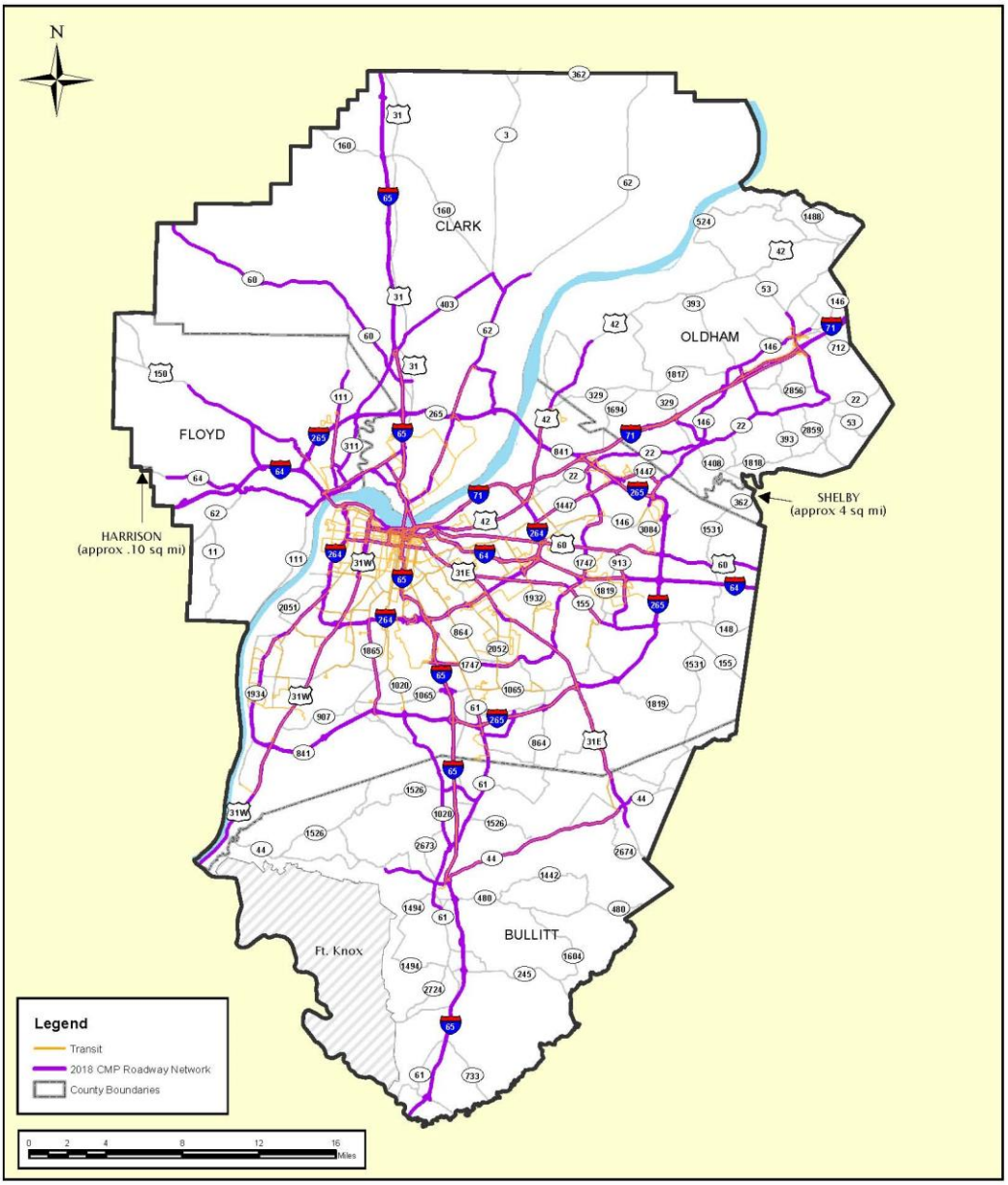
Map 5: Pedestrian and Bicycle Facilities on the CMP Network

The following map is an inset that highlights all of the various bicycle and pedestrian facilities on a portion of the CMP Network and within a half mile buffer of the network. While there are sidewalks on the CMP Network roadway at this location (US 31W/Dixie Highway) and within a half mile of the roadway, connectivity between these facilities is lacking, therefore this could be an area for improvement. A highly connected network of bicycle and pedestrian facilities enhances safety and increases utilization of the network as an alternative transportation mode.



Map 6: Pedestrian and Bicycle Facilities (Focus Area)

The following two maps exhibit transit routes within the entire KIPDA MPO region and transit routes only on the CMP Network. Locations where there are no transit routes on the CMP network may be areas to analyze whether or not expanding transit service would be appropriate and/or whether it would have an impact on reducing congestion.



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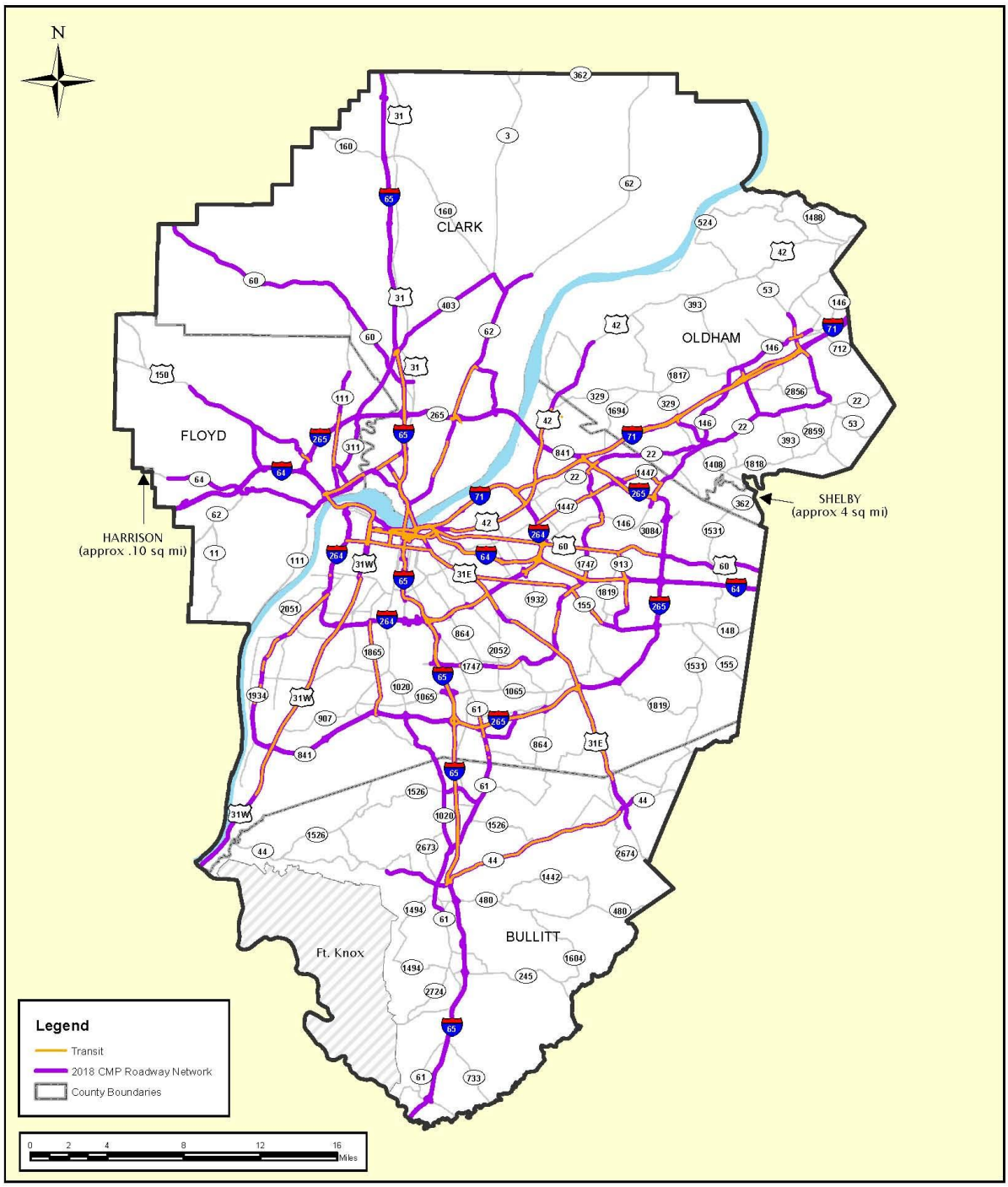
LOUISVILLE (KY–IN) METROPOLITAN PLANNING AREA
TRANSIT ROUTES
AND THE CMP NETWORK

KIPDA

Map 7: Transit Routes and the CMP Network



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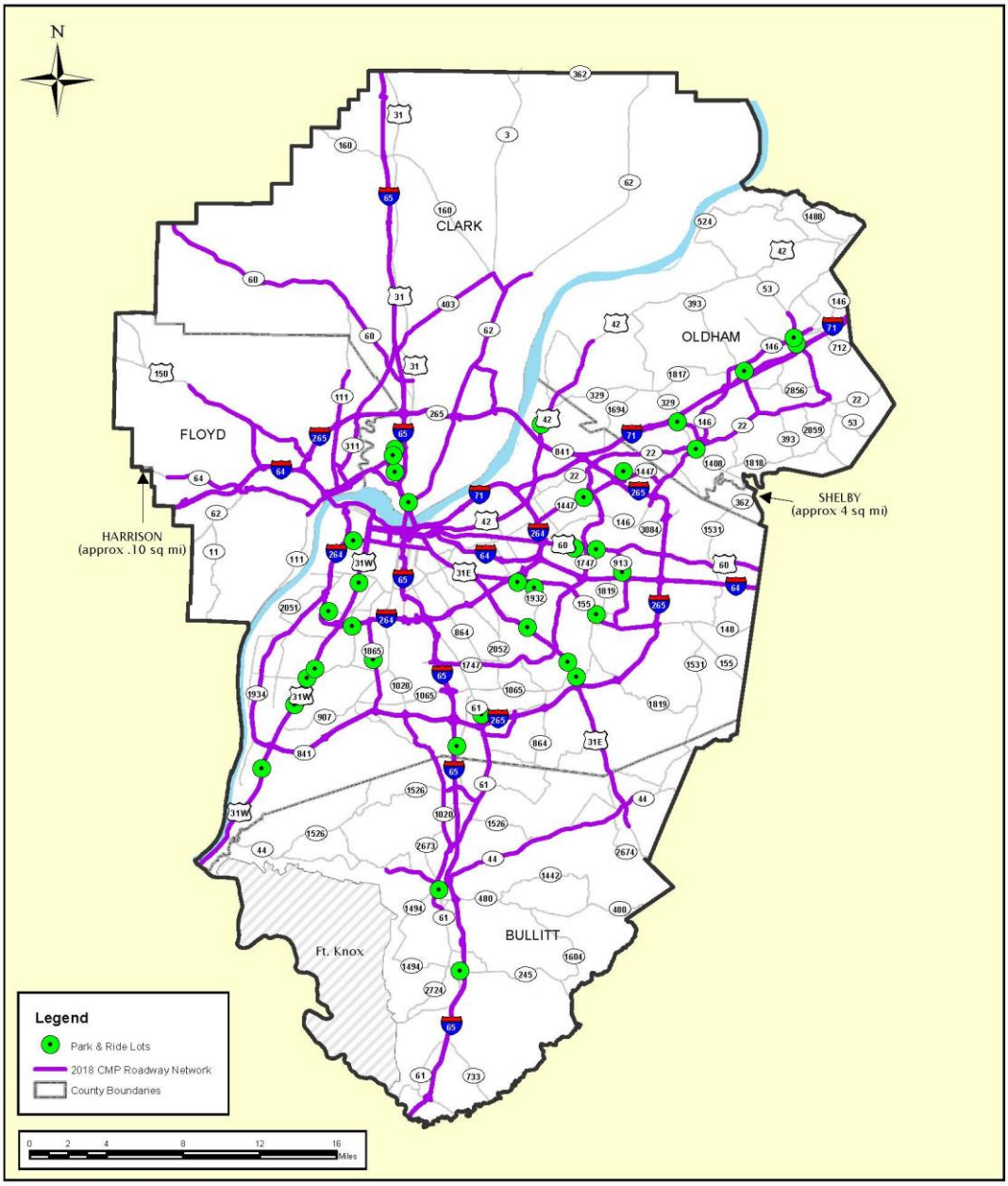
LOUISVILLE (KY–IN) METROPOLITAN PLANNING AREA
TRANSIT ROUTES
AND THE CMP NETWORK

KIPDA

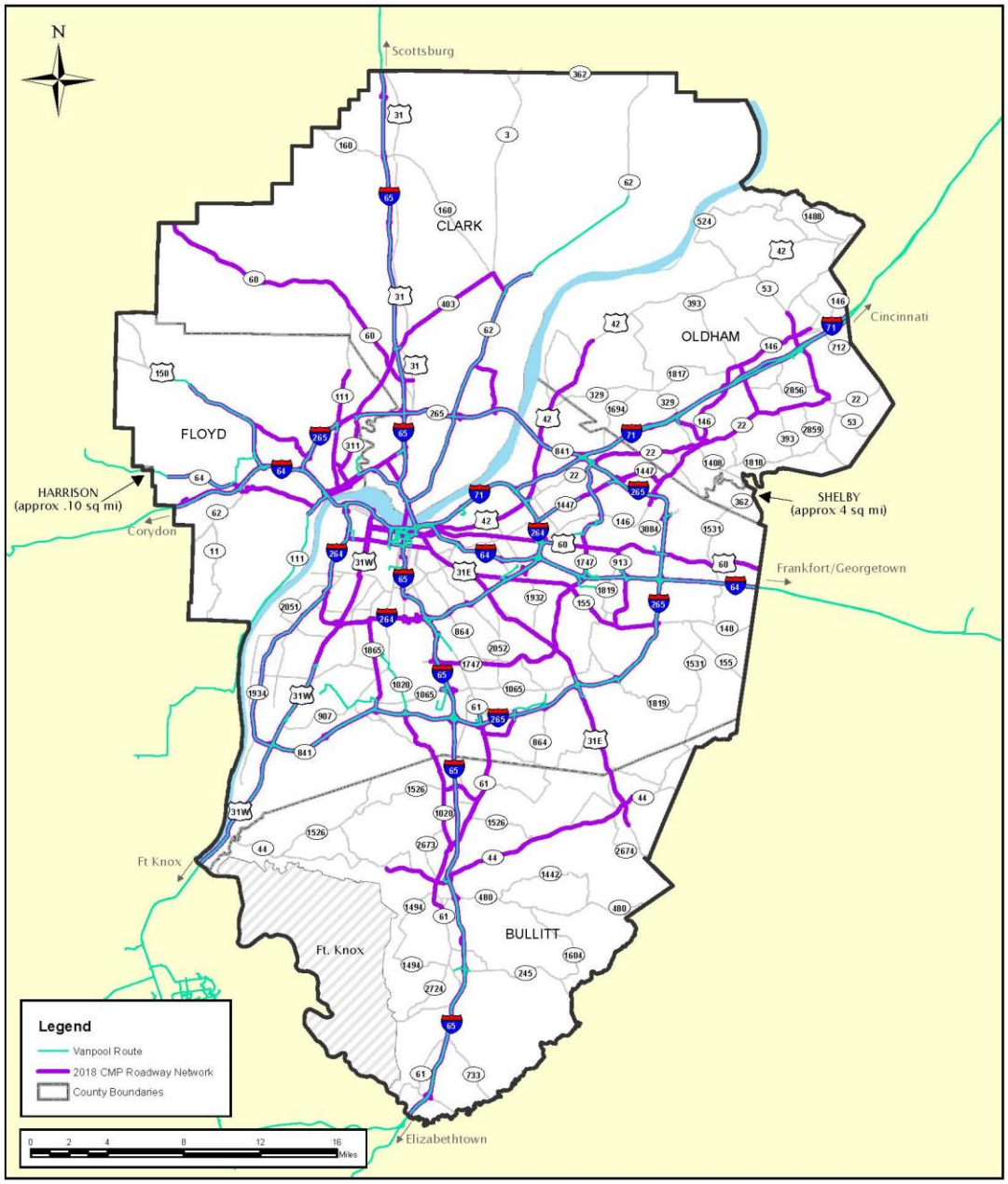
Map 8: Transit Routes on the CMP Network

The following map displays Park and Ride lots within half mile of the CMP Network in the KIPDA MPO region. Locations on the CMP Network where there are no nearby Park and Ride lots may be areas where implementing CMP strategies could prove helpful in mitigating congestion.



Map 9: Park and Ride Lots within 1/2 Mile of the CMP Network

The following map displays the Ticket-to Ride Vanpool Routes within the region, along with the CMP Network. Comparing current vanpool routes with the CMP network allows KIPDA and project sponsors to identify areas where this strategy could be utilized to combat congestion on a regional level.

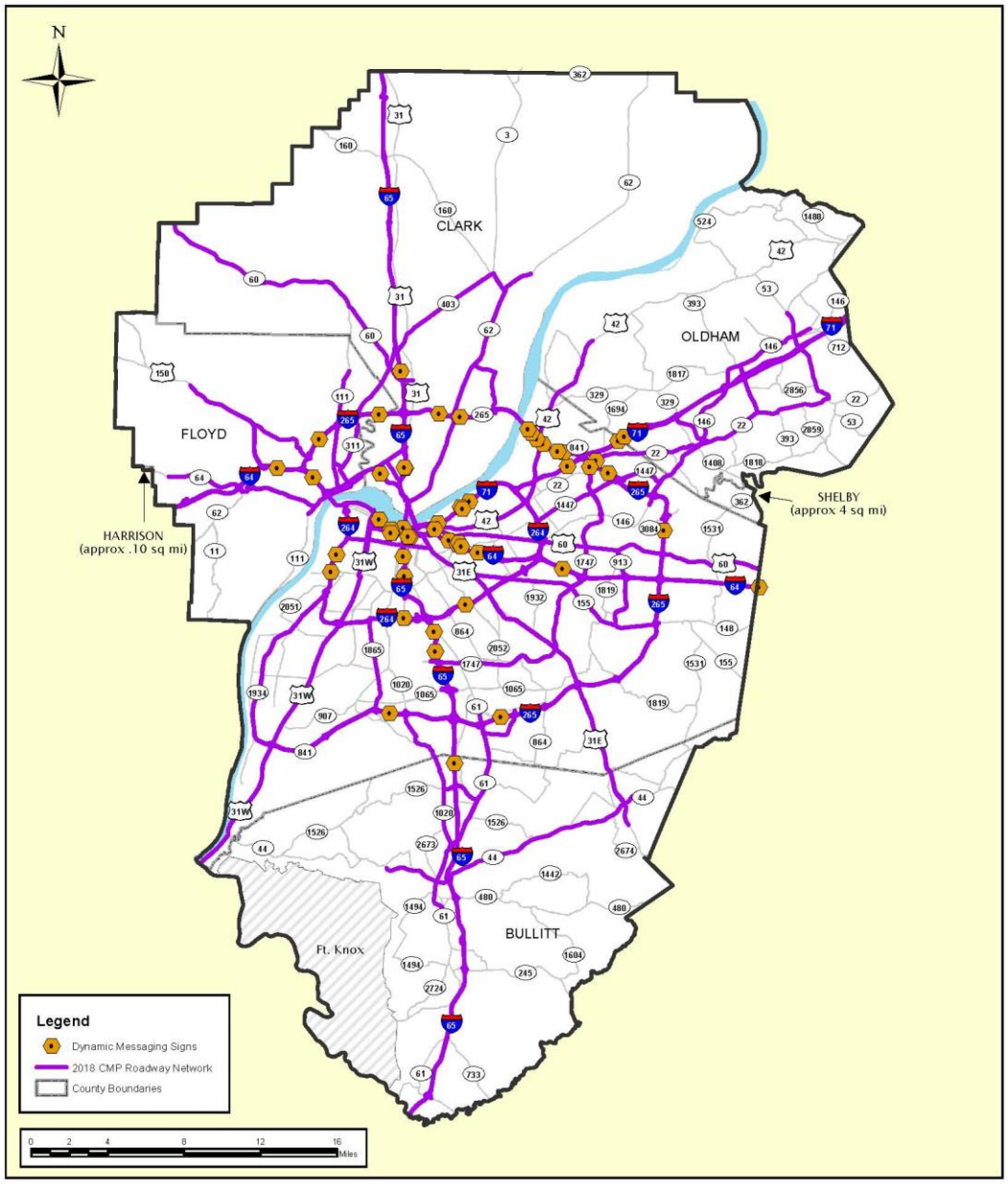


LOUISVILLE (KY–IN) METROPOLITAN PLANNING AREA
VANPOOL ROUTES
AND THE CMP NETWORK

KIPDA

Map 10: Vanpool Routes and the CMP Network

The following map displays the locations of TRIMARC's Dynamic Messaging Signs on the CMP Network. The message displayed on the signs can be modified based on the current state of the transportation system and is an effective tool to relay information to drivers during peak commute times or during weather and event management.



Map 11: Dynamic Messaging Signs on the CMP Network

IMPLEMENTATION OF STRATEGIES

Throughout project development, efforts will be made to assist project sponsors in their consideration of CMP strategies as congestion management measures. CMP-related processes have been established and planning tools made available that will integrate locally generated data, corridor-specific needs, regionally established goals and objectives, and performance -based transportation planning.

CMP Project Development

CMP project development begins with the KIPDA Louisville/Jefferson County (KY-IN) MPA Metropolitan Transportation Plan (MTP), in the future referred to as *Connecting Kentuckiana*. Development of MTP CMP projects may occur through the update and the amendment processes. Once programmed in the MTP, the CMP-related projects and strategies will ultimately advance to the Transportation Improvement Program (TIP) for implementation

While certain strategies are candidates for corridor level implementation (turning lanes, sidewalks) and others are more suited for regional consideration (transit and rideshare)there are also those strategies that may be applicable to both corridor level and regional implementation. Additionally, there are strategies that may address recurring congestion (signal timing, intersection improvements) and those that are more appropriate for non-recurring congestion (dynamic messaging signs). CMP-related projects and strategies will be considered at the corridor and regional levels, as well as in relation to recurring and non-recurring congestion. Using available data, congestion analysis, and existing transportation infrastructure inventories, the full range of congestion management strategies will be implementable.

Connecting Kentuckiana Project Development Guidelines

Implementation of strategies will begin with the *Connecting Kentuckiana* Project Development Guidelines and Project Application. In fostering a collaborative CMP process, project sponsors will be responsible for identifying initial project proposals designed to manage congestion on the CMP Network. The project sponsor will also be responsible for identifying what CMP Management Strategies may be utilized as part of an initial project proposal. The Project Development Guidelines will assist sponsors as they complete their Project Application by providing guidance and identifying resources for consideration in project development. Many of the resources identified in the Project Development Guidelines are relevant to the CMP. For instance, some of the information that will be made available to project sponsors that is important to the CMP will include:

- Bicycle infrastructure inventory
- Pedestrian infrastructure inventory
- CMP Network
- Transit routes
- Park and Ride Lots
- Vanpool routes
- Levels of current congestion
- Forecast 2040 congestion estimates (under a No Build Scenario)

The *Connecting Kentuckiana* Project Application will include items that are both directly and indirectly relevant to the CMP. For instance, each applicant will be responsible for identifying all pedestrian improvements associated with their proposed projects regardless of its relevance to the CMP Network. Each applicant, for example, will also be responsible for identifying whether or not their proposed project is located on the CMP Network. If a proposed project is located on the CMP Network, the project application may lead the project sponsor through a series of items designed to clarify the applicant's consideration of CMP Management Strategies.

KIPDA Staff Review

All proposed projects submitted for inclusion in the *Connecting Kentuckiana* MTP will undergo a project evaluation and ranking that will be initiated by KIPDA staff and will culminate in recommendations for consideration by the Transportation Policy Committee. A component of the Project Evaluation will focus on the commitments a proposed project may provide toward managing congestion on or immediately surrounding the CMP Network. In their initial project review, KIPDA staff may confer with project applicants concerning overlooked opportunities to integrate CMP Management Strategies within the scopes of proposed projects located on or immediately surrounding the CMP Network (*see Travel Demand Reductions Strategies Analysis* below). In the recommendation to the Transportation Policy Committee, KIPDA staff will also report on the proposed projects that contribute to managing congestion on or immediately surrounding the CMP network. In their review, KIPDA staff will examine the availability of CMP strategies both on and within a ½ mile of the CMP Network. The ½ mile buffer allows for recognizing that relieving congestion on the CMP Network is not limited to strategies on the Network itself but also along facilities that may contribute to congestion on the Network. Therefore, proposed projects on facilities that intersect the CMP Network and include CMP strategies within ½ mile of the Network will be recognized as projects that may contribute to improving the flow of traffic on the CMP Network.

Travel Demand Reduction Strategies Analysis

Increasing the availability of multi-modal transportation options is important to the MPO. This has been demonstrated in the Goals and Objectives developed for *Connecting Kentuckiana* where emphasis has been placed upon expanding connections through non-SOV alternatives. The CMP's Travel Demand Reduction Strategies Analysis supports those Goals and Objectives. The following actions will be taken by KIPDA staff, and if warranted, the project sponsor(s):

- Project sponsor submits CK project application to KIPDA staff.
- KIPDA staff reviews the project application for the following:
    a. Proposed projects description includes adding a significant increase in SOV capacity (if the proposed project does not include adding a significant increase in SOV capacity then it is no Travel Demand Reduction Strategies Analysis is warranted)
    b. Proposed projects is located on a CMP Network corridor (if the proposed project is not located on the CMP Network, then no Travel Demand Reduction Strategies Analysis is warranted)
    c. Proposed project application indicates that opportunities to add Travel Demand Reduction Strategies have been explored

- KIPDA staff reviews the proposed project, and if warranted, confers with the applicant concerning opportunities to modify their proposed project description and cost estimates to include Congestion Management Strategies.
- Upon finalizing the proposed project application, KIPDA staff begins the Project Evaluation Process

REVIEW OF STRATEGY EFFECTIVENESS

Review Time Frame

The implemented CMP strategies are required to be periodically evaluated to track progress, overall effectiveness, and consistency with the adopted KIPDA performance measures. The CMP does not have an established update cycle, although both the four-year Federal Certification Review cycle and the four-year MTP update cycle provide a baseline in the absence of an identified requirement. The CMP must, at a minimum, be updated often enough to provide relevant information as an input to each update of the MTP. The four-year update cycle will provide the opportunity to evaluate strategy effectiveness using the previously identified performance measures and congestion analysis.

KIPDA High Congestion Analysis

As new data becomes available, KIPDA staff will update the LOS analysis to provide the roadway segments that have a LOS of D or worse and the Worst 10% Congested Segments. The update of this analysis might prompt a review and change of the CMP network.

Inventory

There will be an inventory maintained of all existing alternative-mode infrastructure, including transit and vanpool routes. The inventory will be available on the KIPDA Online Resource Center and will be updated on a four- year basis (prior to the update of the MTP). Additionally, KIPDA staff will provide a report to the Transportation Policy Committee as the inventory is updated and will include a list of projects that include alternative-mode strategies on the CMP Network.