



TSMO PROGRAM

2023 STATEWIDE TRANSPORTATION MEETING

Presentation by Zack Neihof

Frankfort, Kentucky | April 13th, 2023



Vision

Striving to be national leaders in transportation who provide transportation infrastructure and services for the 21st century that deliver new economic opportunities for all Kentuckians.

Mission

To provide a *safe, efficient, environmentally sound and fiscally responsible* transportation system that delivers economic opportunity and enhances the quality of life in Kentucky.



What is TSMO?

Transportation Systems Management and Operations

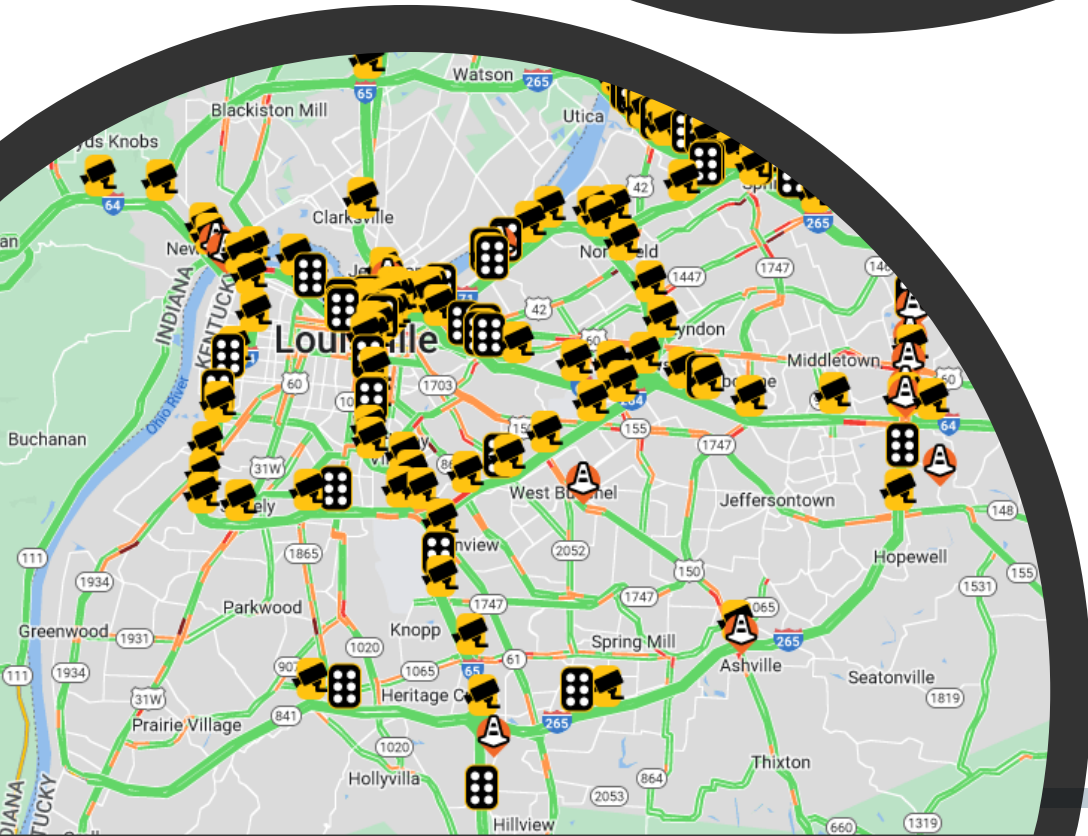
TSMO encompasses a broad set of strategies that aim to optimize the safe, efficient, and reliable use of existing and planned transportation infrastructure for **ALL** modes.



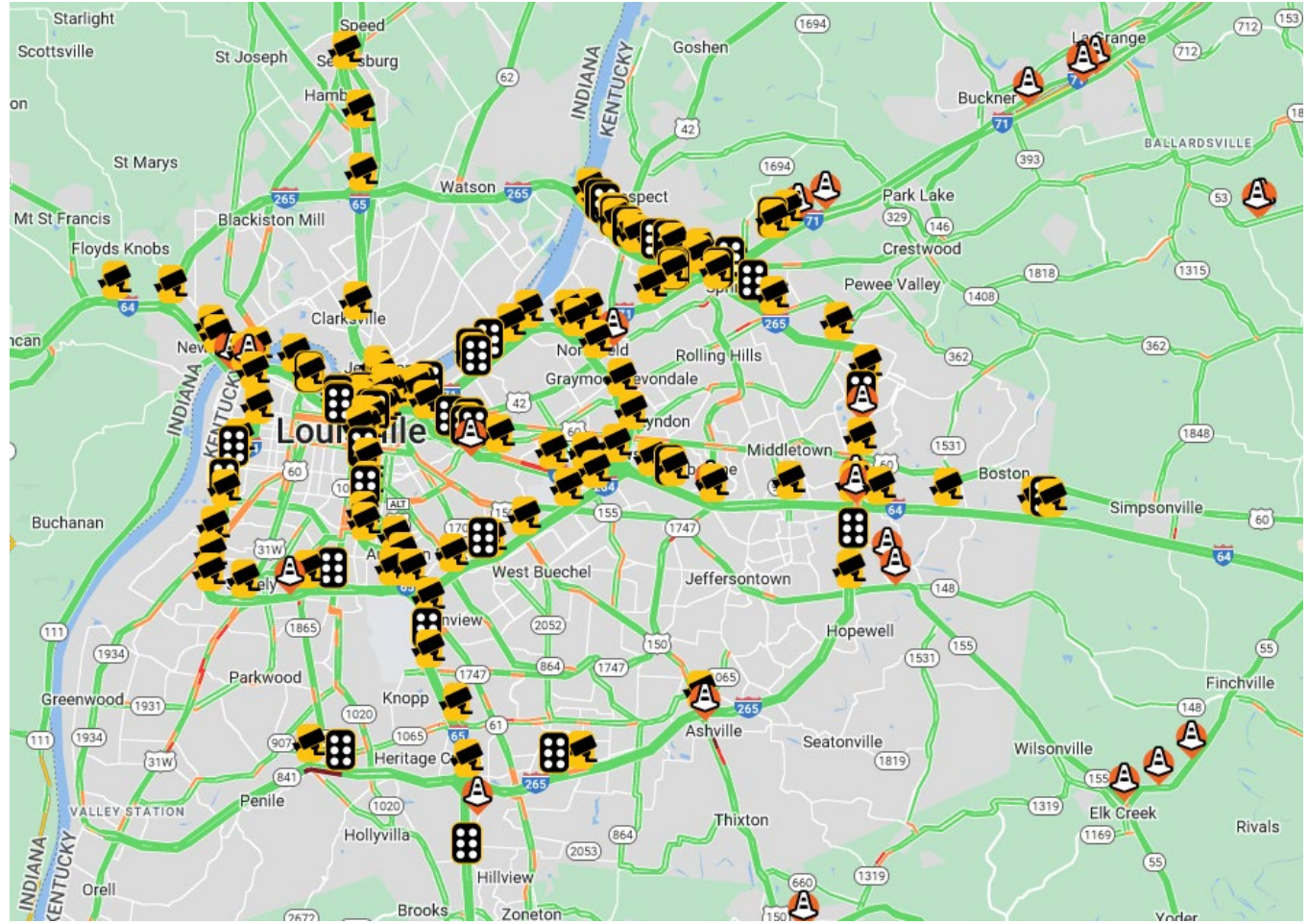
TSMO Defined

Transportation Systems Management and Operations

A program to improve the performance of the highway and street transportation system through implementation of systems (ITS), services, and projects. TSMO includes all the things needed to realize all the benefits of ITS applications.



TSMO for CUSTOMERS



DISTRICT 5							
County	Route	Road Name	Work Zone Begin Milepoint	Reference Milepoint	Work Zone End Milepoint	Current Avg Speed	Reference Information
Jefferson	I-64	I-64 NC	0.0	0.2	1.0	47.8	GoKY Google Maps Waze Here WeGo NWS Detailed Forecast



TSMO for PRACTITIONERS

TSMO for KENTUCKY



TSMO IS...?



Toolbox



Get the most out of the
investments we've made



What TSMO is NOT:

Not a “silver bullet”

Not a replacement for all future capacity projects

Not a solution for every project

FHWA: TSMO PROGRAM



3 Keys:

- Strategic Element
- Programmatic (Business) Element
- Tactical Element

A screenshot of the FHWA website page titled "Organizing and Planning for Operations". The page features a navigation menu with links for Home, About, Focus Areas, Resources, Glossary, Links, Sitemap, and Contact. A search bar is located on the right side of the navigation bar. The main content area is titled "Transportation Systems Management and Operations (TSMO) Plans" and includes a "KEY RESOURCES" box with links to "FHWA's Primer for Program Planning (HTML, PDF 2.2MB)" and "What is TSMO? - FHWA has answered common questions relating to TSMO". The page also lists three strategic, programmatic, and tactical elements of TSMO program planning and provides resources to help develop a TSMO program plan, including reports and publications.

U.S. Department of Transportation
Federal Highway Administration

FHWA Home | Feedback

Organizing and Planning for Operations

Home About Focus Areas Resources Glossary Links Sitemap Contact

Home / Transportation Systems Management and Operations (TSMO) Program Planning

Transportation Systems Management and Operations (TSMO) Plans

Transportation agencies across the country are moving from implementing ad hoc transportation systems management and operations (TSMO) projects towards institutionalizing TSMO as a core function of the agency. To structure and sustain this shift, many agencies have found it valuable to develop a TSMO program plan that outlines the strategic, programmatic, and tactical visions for TSMO and the steps needed to achieve them. Management and operations stakeholders work together with transportation planners, designers, and other partners to develop this vision by finding agreement on:

- Strategic elements: business case for TSMO; TSMO program mission; goals and performance measures
- Programmatic elements: organizational structure; staffing and workforce needs; leadership needs and roles; business processes
- Tactical elements: TSMO projects or services; policies for implementation.

TSMO program planning can help an agency increase the effectiveness of its TSMO efforts by providing a clear understanding of what the TSMO program entails, what it aims to achieve and how, and how it fits within the larger agency context. TSMO program plans can help stakeholders develop operations objectives to guide the selection of management and operations strategies, integrate projects in the region's planning and programming processes, and identify performance measures that will enable them to track progress.

Resources to Help You Develop a TSMO Program Plan

Reports and Publications

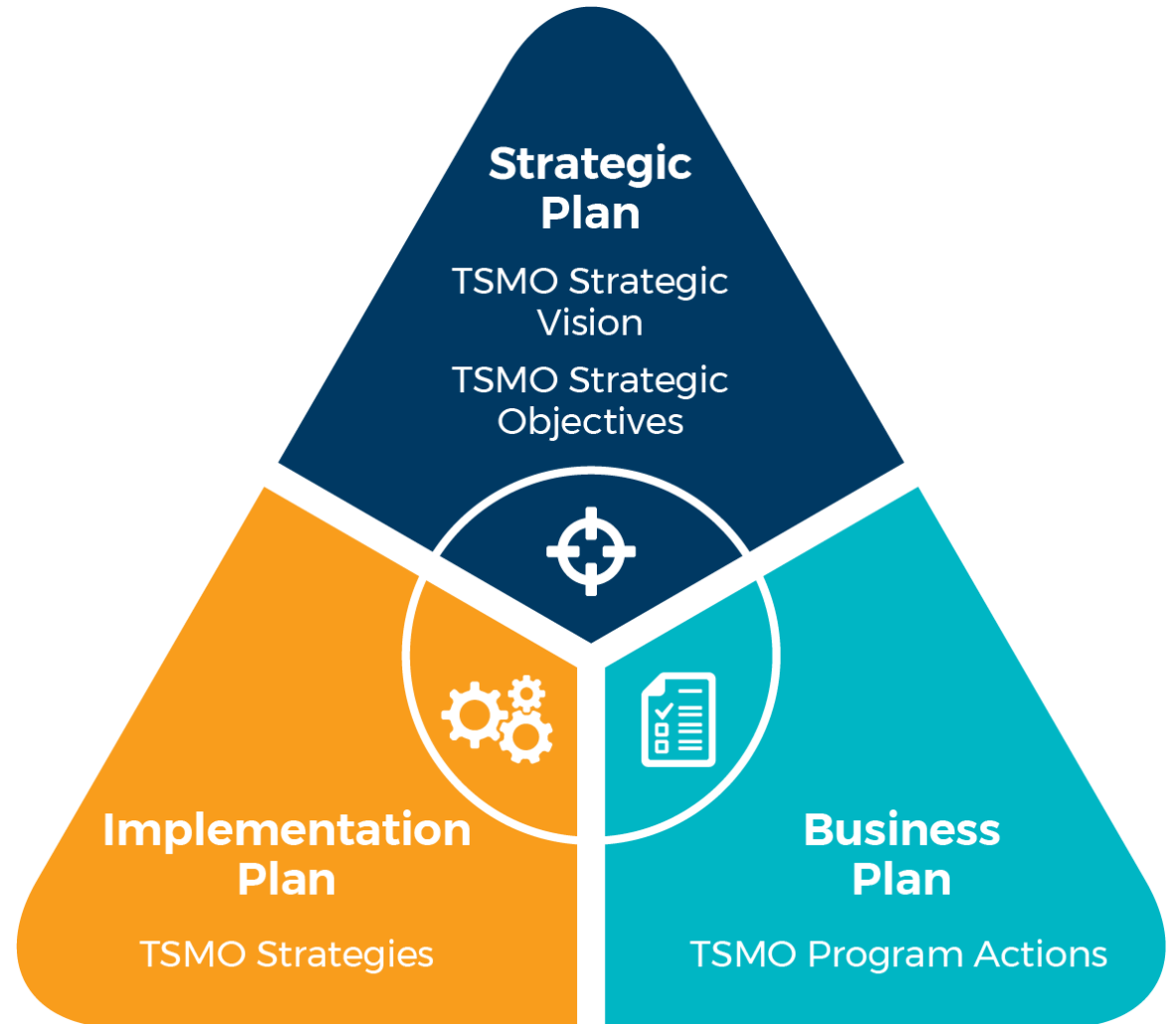
Developing and Sustaining a Transportation Systems Management & Operations Mission for Your Organization: A Primer for Program Planning (HTML, PDF 2.0 MB) - describes the elements and process of TSMO program planning

Improving Business Processes for More Effective Transportation Systems Management and Operations (HTML, PDF 2.5 MB)

NCHRP Report 20-07/345: Program Planning and Development for Transportation System Management and

KYTC: PROGRAM PLAN

- Strategic Plan
- Business Plan
- **Next:** Implementation Plan



KYTC'S STRATEGIC PLAN

How can TSMO help us accomplish our goals?



GOAL 1

Promote Safety in All Decision Making

GOAL 2

Strengthen Stakeholder and Customer Relationships

GOAL 3

Deliver Economic Opportunities and Enhance Quality of Life

GOAL 4

Optimize Performance through People and Innovation

GOAL 5

Nurture a Culture of Diversity and Inclusion



Goal 1: Promote Safety in ALL Decision Making

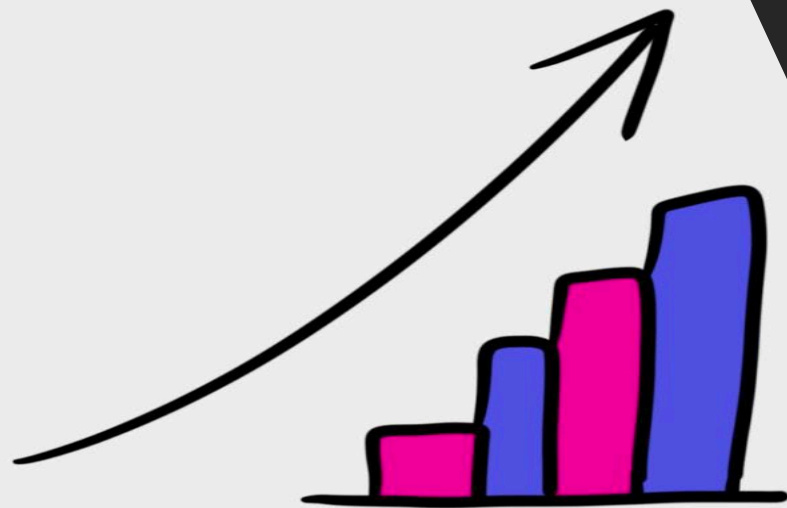


Goal 2: Strengthen Stakeholder and Customer Relationships



Goal 3: Deliver
Economic
Opportunities and
Enhance Quality of Life





Goal 4: Optimize Performance Through People and Innovation



Goal 5: Nurture a Culture of Diversity and Inclusion



Transportation Agency

EXECUTIVE LEADERSHIP

- Endorse TSMO with strategic plans and communications
- Consider TSMO directives in agency activities
- Include TSMO measures in agency dashboards
- Budget for TSMO activities



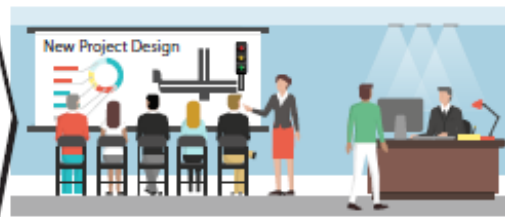
HUMAN RESOURCES

- Provide TSMO training
- Develop job categories for new workforce requirements for TSMO
- Establish a career path for those involved in TSMO



PROJECT DEVELOPMENT AND DESIGN

- Evaluate TSMO options to support performance-based practical design
- Include TSMO strategies in capacity projects to maximize investments
- Incorporate TSMO assets in infrastructure design
- Incorporate TSMO elements in design manuals



TRANSPORTATION MANAGEMENT

- Monitor travel conditions 24/7
- Coordinate with partners for traffic incident management
- Share operations data with planners



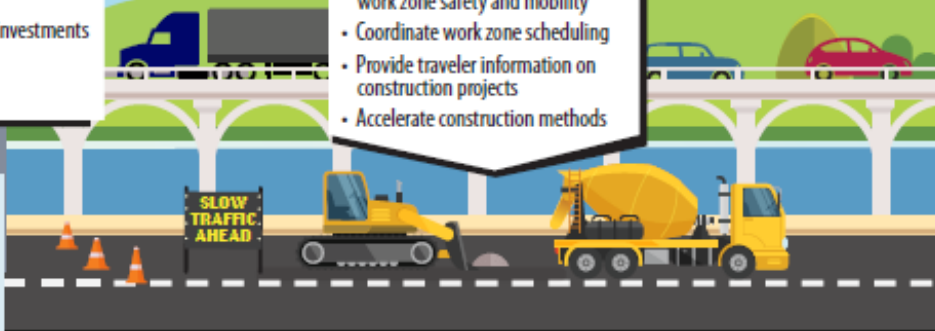
Transportation Management Center

PLANNING AND PROGRAMMING

- Consider TSMO solutions as alternatives to capacity expansion projects
- Incorporate travel time reliability, efficiency, and equity in performance goals and objectives
- Identify and prioritize operations needs and investments
- Evaluate TSMO strategies for programming
- Integrate TSMO into transportation plans

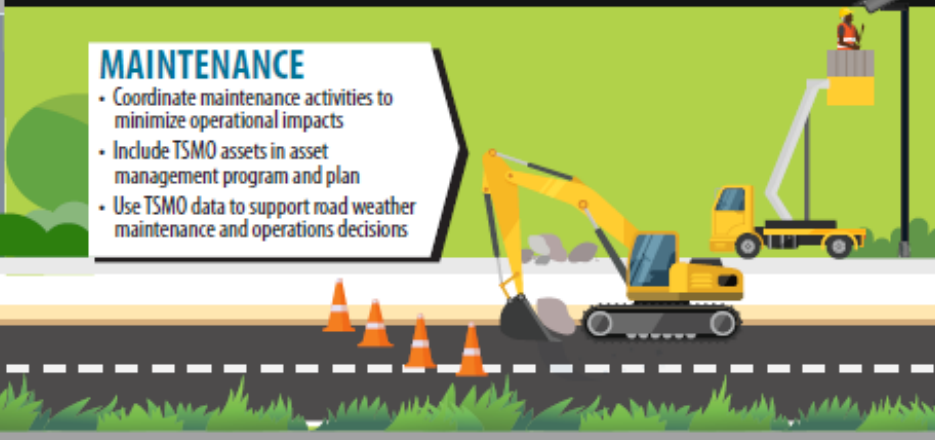
CONSTRUCTION

- Apply TSMO strategies to improve work zone safety and mobility
- Coordinate work zone scheduling
- Provide traveler information on construction projects
- Accelerate construction methods

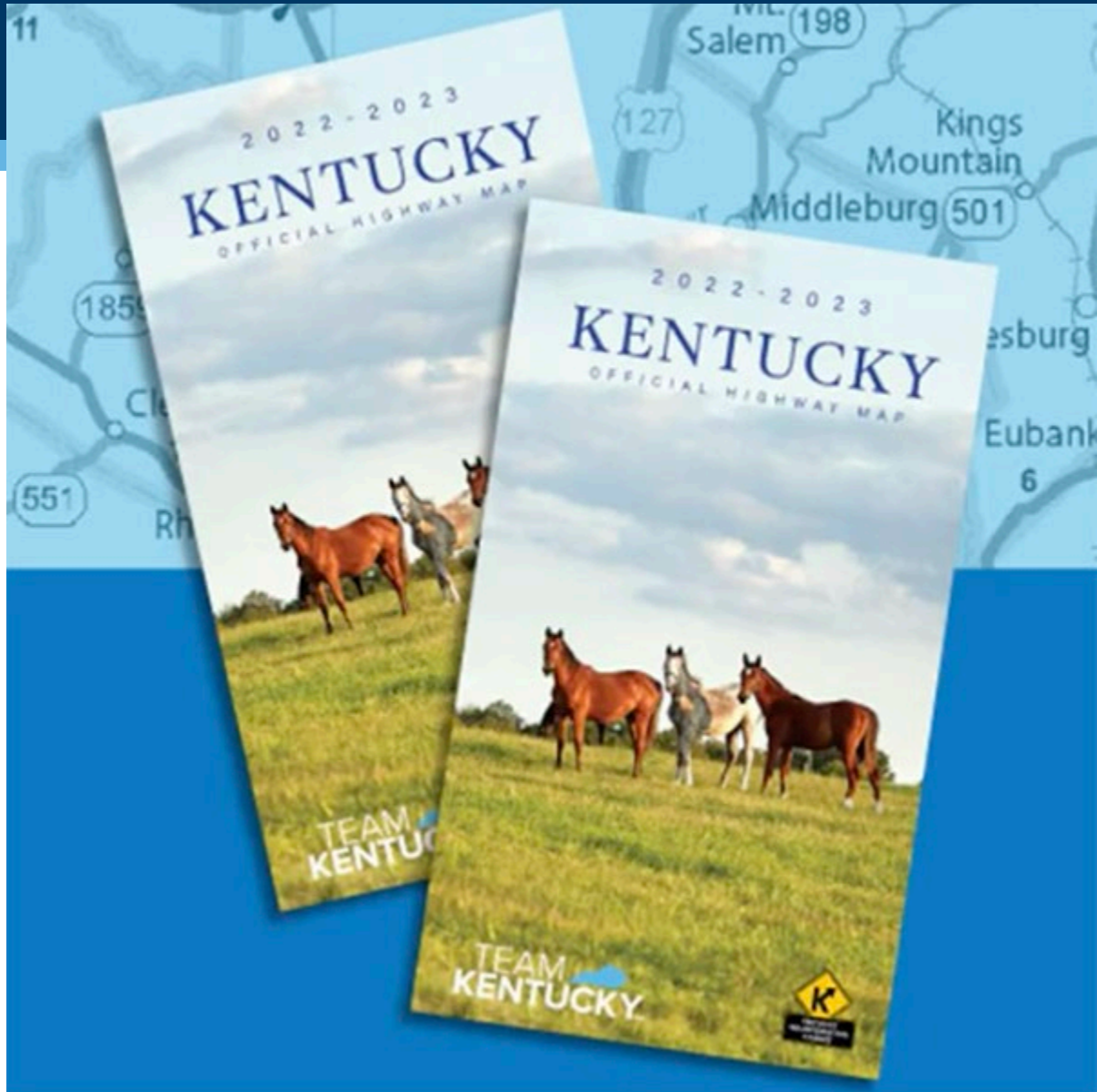


MAINTENANCE

- Coordinate maintenance activities to minimize operational impacts
- Include TSMO assets in asset management program and plan
- Use TSMO data to support road weather maintenance and operations decisions



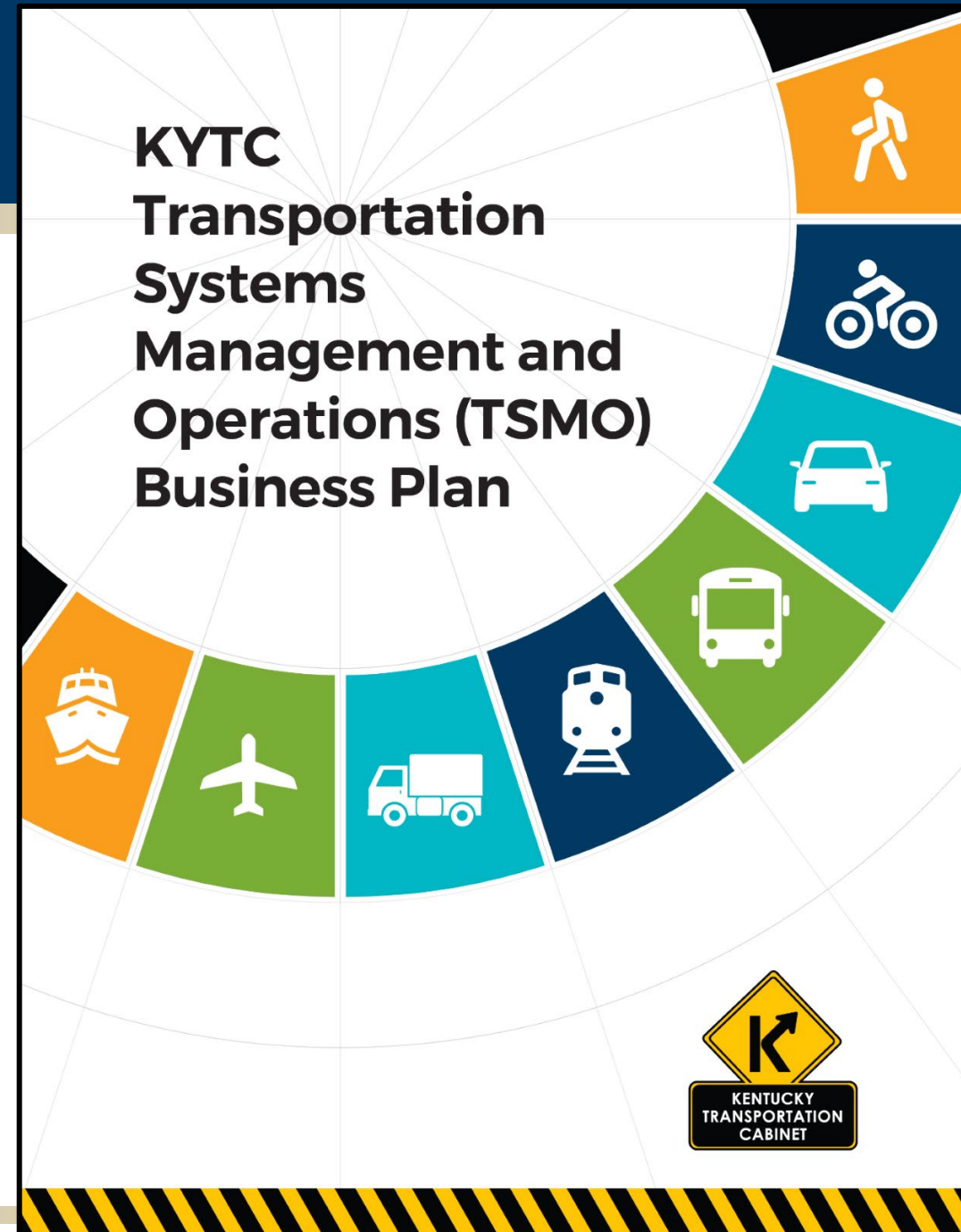
Transportation Systems Management and Operations (TSMO)

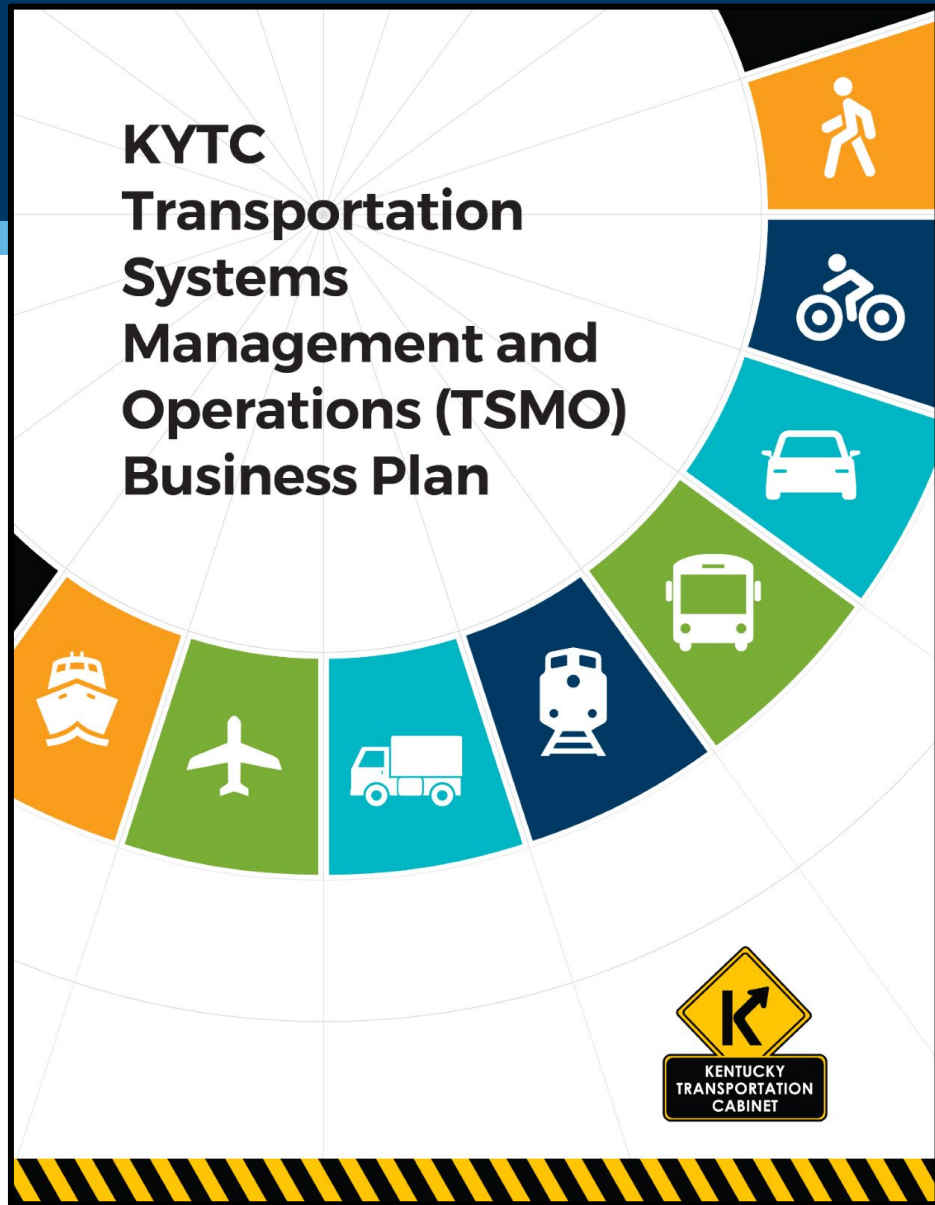


“The journey is the safest when the roadmap is the clearest.”

TSMO BUSINESS PLAN

What does a TSMO program at KYTC look like?





- TSMO Foundation
- TSMO and the Capital Program
- Other Business Processes

TSMO FOUNDATION

ESTABLISH KYTC TSMO PROGRAM

Research Peer TSMO Programs

Formalize TSMO Program Organization

Develop Compelling Vision

DEVELOP TSMO TRAINING PROGRAM AND ON-GOING TRAINING

Develop Tailored Curriculum

TSMO 101

Conduct Training

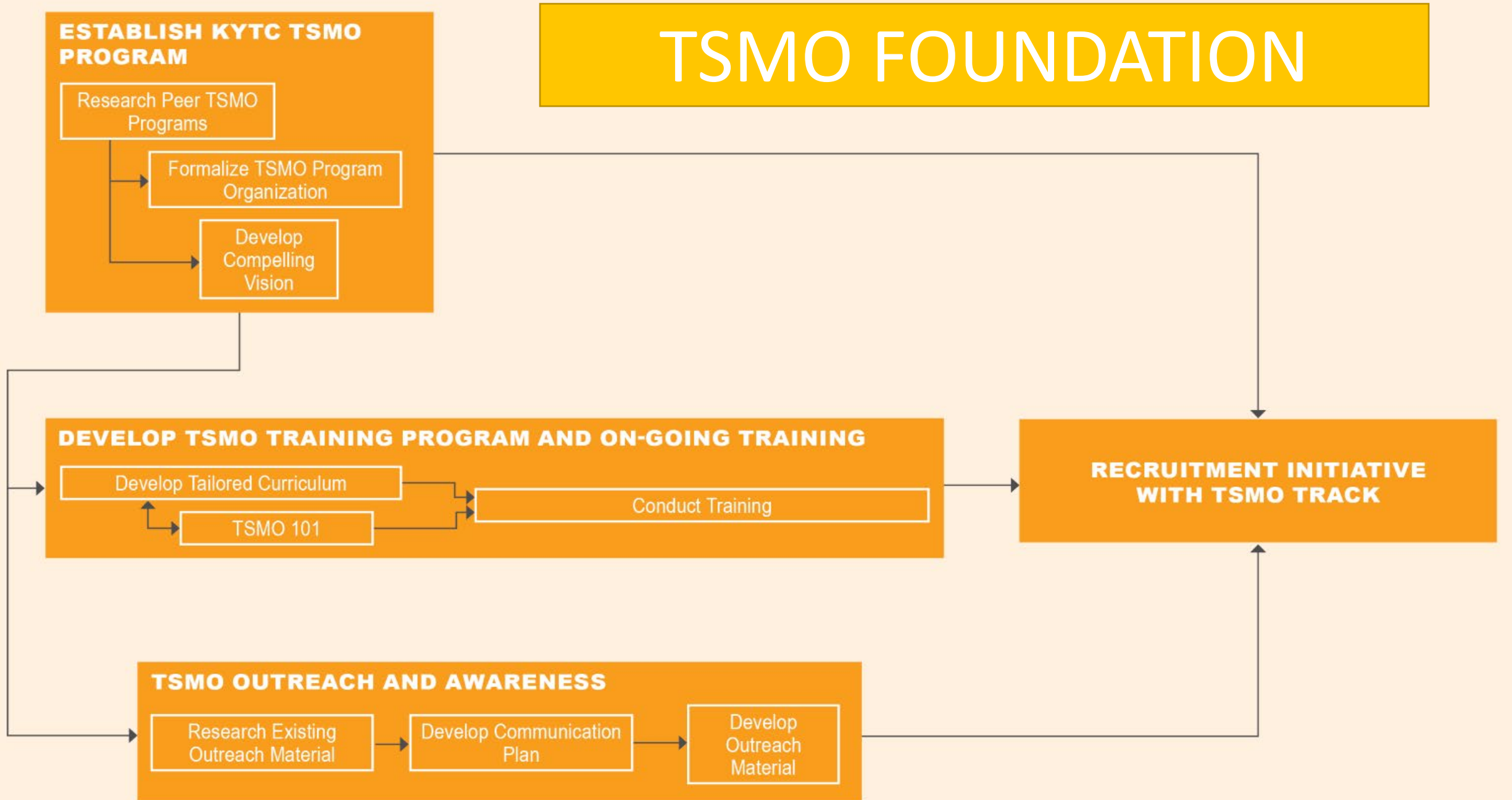
TSMO OUTREACH AND AWARENESS

Research Existing Outreach Material

Develop Communication Plan

Develop Outreach Material

RECRUITMENT INITIATIVE WITH TSMO TRACK



TSMO Training Program

- ❑ TSMO 101- for KYTC staff and partners
- ❑ Operations Academy
- ❑ NOCoE

operationsacademy[™]
SENIOR MANAGEMENT PROGRAM





INTEGRATE TSMO INTO PLANNING PROCESS

Continue Existing Integration Efforts

Assistance to MPOs to include TSMO in Planning Process

Relationship between TSMO Program and ITS Architecture

TSMO & THE CAPITAL PROGRAM

DETERMINE TSMO PERFORMANCE MEASURES

Review Peer Agency Measures

Identify Candidate Measures

Select Measures

Refine Measures

Develop Performance Reports/Dashboards

DEFINE PROGRAMMING PROCESS FOR TSMO

Identify Funding Opportunities

Establish Prioritization Criteria

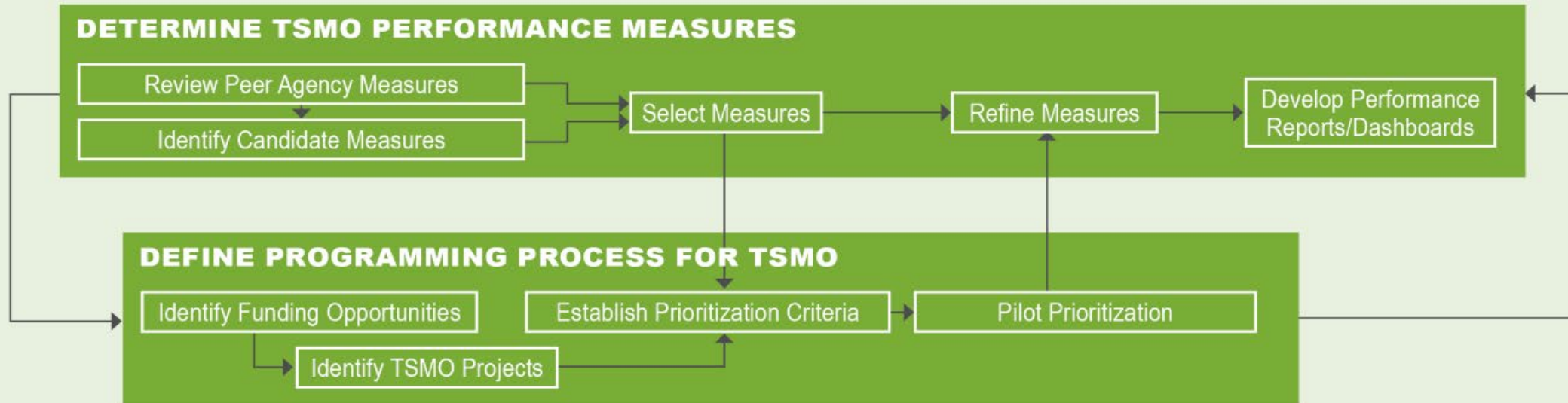
Pilot Prioritization

Identify TSMO Projects

INTEGRATE TSMO IN PROJECT DEVELOPMENT PROCESS

Guidance on Incorporating TSMO into Projects

Establish TSMO Participation in Scoping All Projects



OTHER CABINET PROGRAMS

INCORPORATE TSMO INTO ASSET MANAGEMENT

Research TSMO Asset Management Approaches

Determine if KYTC Asset Management can include TSMO

Select Approach

Collect Asset Data

Determine Asset Lifecycles

DEVELOP TSMO DATA SHARING PLAN

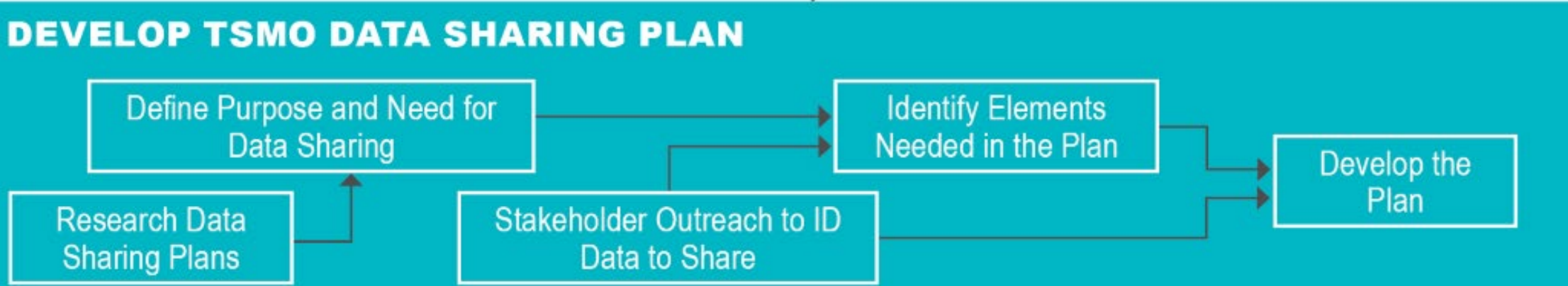
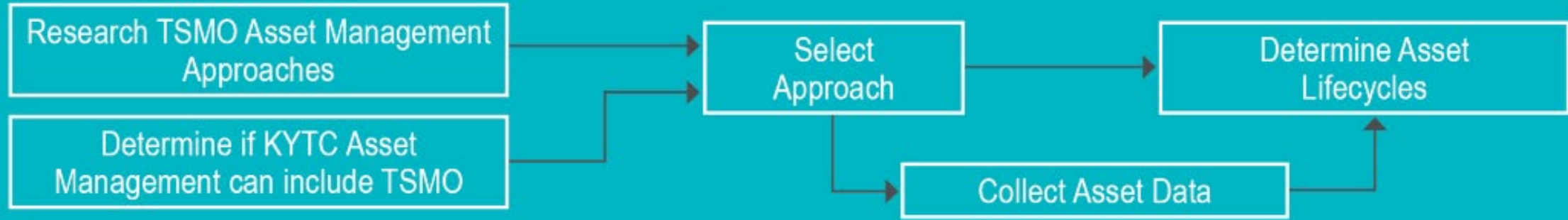
Define Purpose and Need for Data Sharing

Research Data Sharing Plans

Stakeholder Outreach to ID Data to Share

Identify Elements Needed in the Plan

Develop the Plan

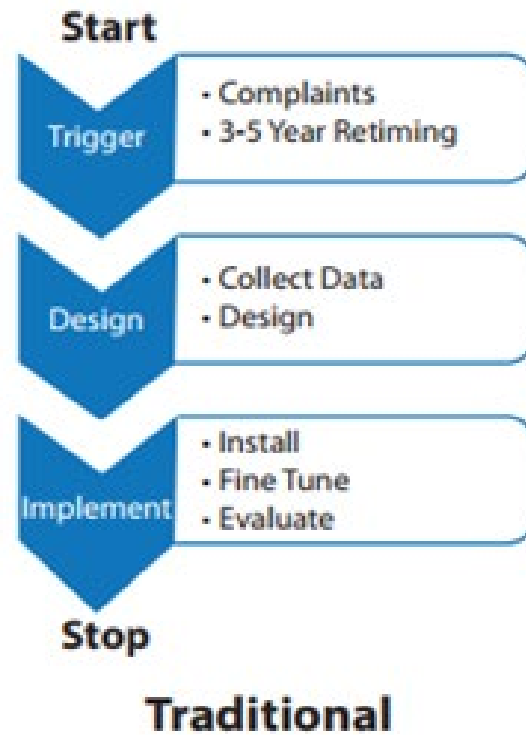




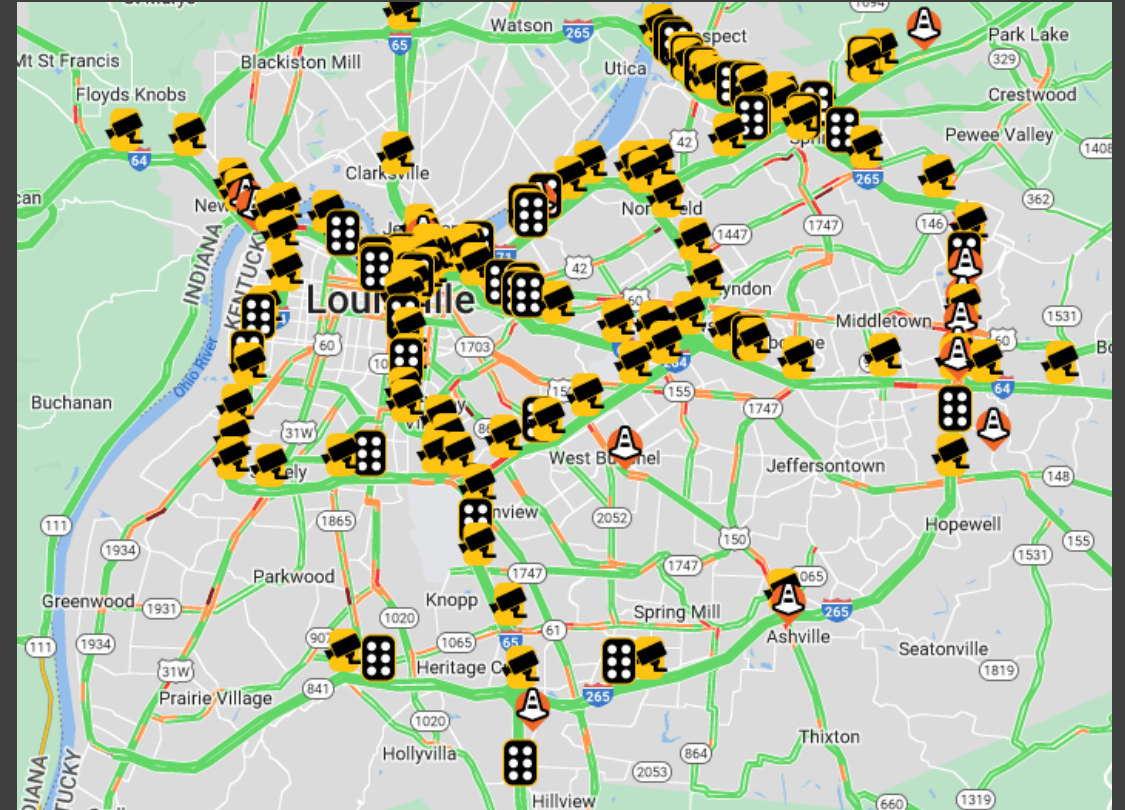
TSMO IN ACTION

SYSTEMS

Automated Traffic Signal Performance Measures (ATSPMs)



SERVICES



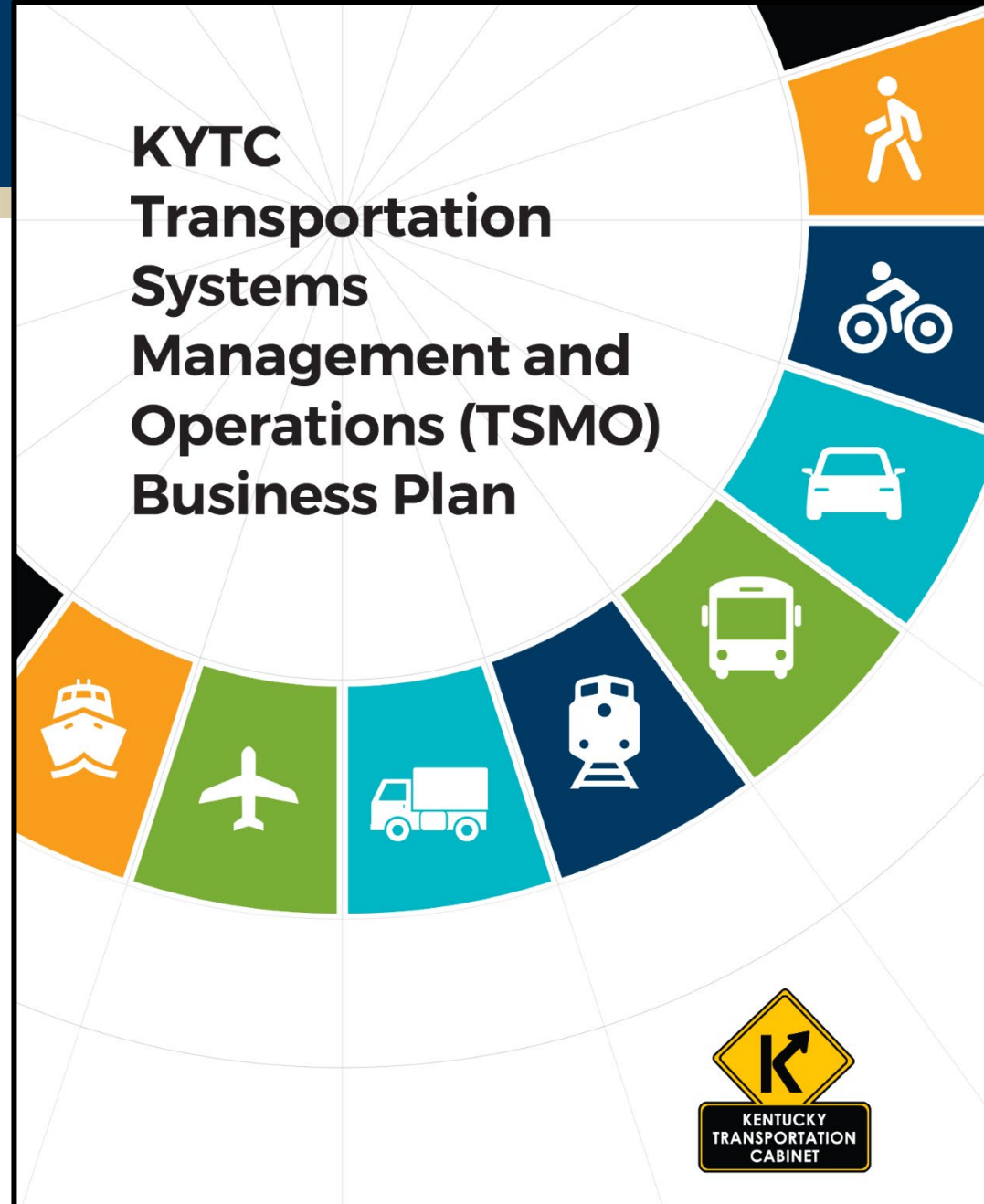
PROJECTS

- Example: Turn lane with signal phase change
 - Improved safety
 - Improved mobility



- What can YOU do to help?
- I'm glad you asked!

**KYTC
Transportation
Systems
Management and
Operations (TSMO)
Business Plan**





BE INFORMED-
ASK QUESTIONS.



BE INVOLVED -

HELP IMPLEMENT THE PROGRAM PLAN



BE INTENTIONAL -

**CONSIDER POTENTIAL TSMO SOLUTIONS IN
YOUR NEXT PROJECT!**



NEXT STEPS!

- Think of TSMO as a practical solution for your District's Traffic Operation challenges
- Be on the lookout for the TSMO 101 training this year
- Please reach out to if you have any questions or want to learn more!

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