

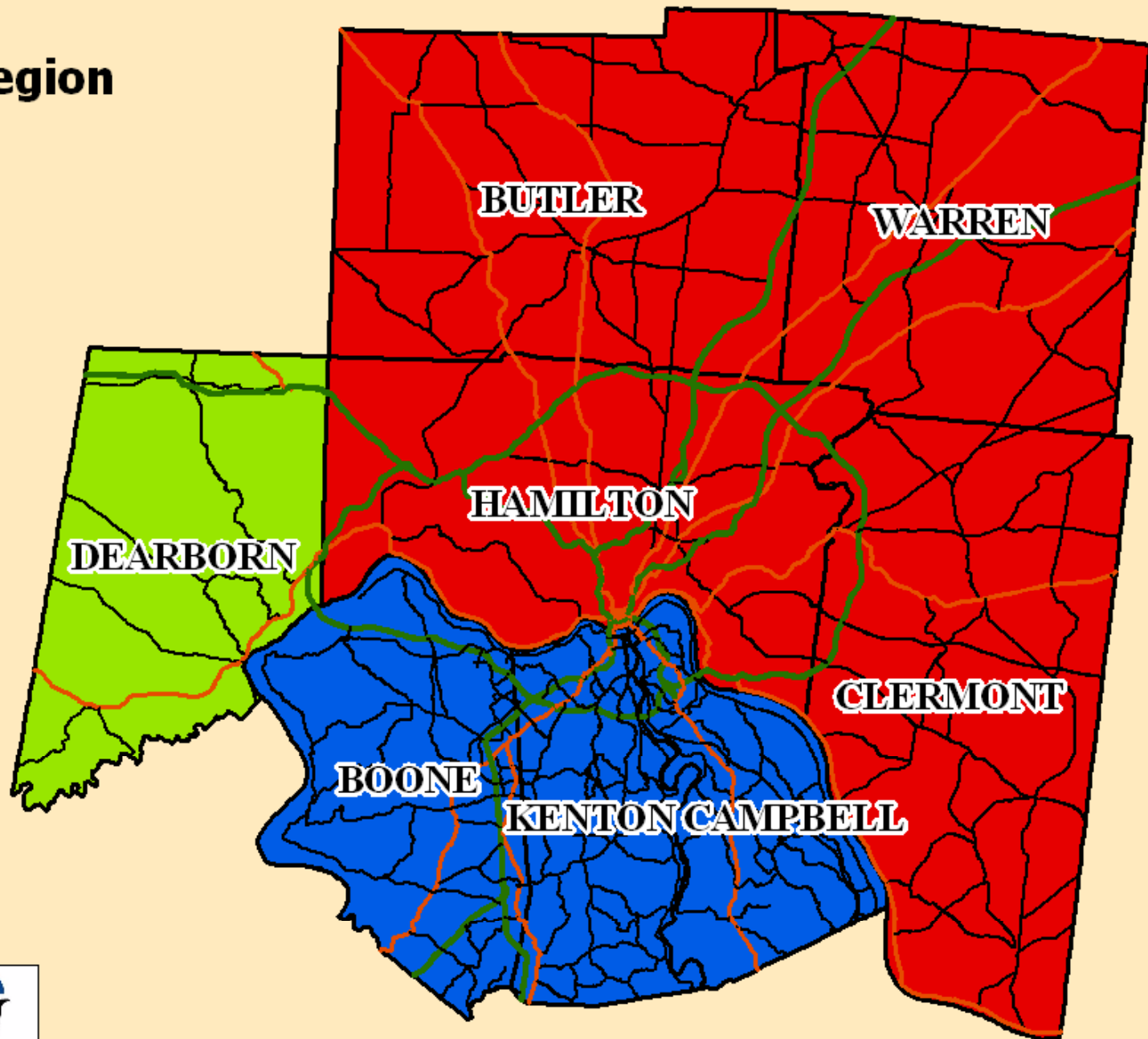
# Cincinnati (OKI) ITS Architecture and Strategic Plan

Indiana MPO Conference

October 8, 2008



# OKI Region



## ***Intelligent Transportation System (ITS)***

- Use and integration of electronics, communications, and information processing to improve the efficiency or safety of surface transportation.

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# ITS Architecture

## *ITS Architecture*

- Defines how systems functionally operate
- Maps the interconnection of information exchanges among these systems.

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# Why Update?

- 23 CFR 940 requires that all federally-funded ITS projects conform to a Regional ITS Architecture that meets all requirements of the National ITS Architecture.
  - ITS and transportation planning shall be consistent
- OKI's previous ITS Plan (2001 adoption) was deficient in meeting requirements and narrowly focused.



# ARTIMIS

- Advanced Regional Traffic Interactive Management & Information System

- Began in 1995
- 88 miles of freeway
- 80+ cameras
- 57 center lane miles of fiber-optic cable
- 1100 detectors
- 40 fixed changeable message signs
- Highway advisory radio
- Freeway service patrol vans
- 511 traveler information system and website ([artimis.org](http://artimis.org))



# Examples of ITS Components

- **Traffic Management** (ARTIMIS, Coordination with railroad operations)
- **Maintenance and Construction** (Vehicle and equipment tracking, road weather data collection)
- **Public transportation** (Fare collection management, real-time transit information)
- **Traveler information** (511, in-vehicle information)
- **Commercial vehicle operations** (Electronic clearance, HAZMAT detection and mitigation)
- **Emergency Management** (911, disaster response and recovery)
- **Archived Data Management** (Traffic counters, Speed and travel time data)
- **Vehicle Safety Systems** (Intersection safety warning, collision avoidance system, other dedicated short range communications)



# Architecture Update

- OKI ITS Architecture Update and Strategic Plan Framework
  - Adopted March 2008
  - Prepared by HNTB Ohio
  - Products
    - TURBO database
    - Website
    - Report



# Architecture and Strategic Plan

- Geographic Area
  - Covers systems and roads throughout the OKI MPO region
- Time Frame
  - Existing Today → 20 years in the future
- Coordinate regional ITS direction
- Tie-in with OKI's 2030 Plan
- Assist agencies in complying with FHWA Rule

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# Stakeholders

Boone County

City of Cincinnati

Clermont Transportation Connection

Northern KY/Cincinnati Airport

FHWA

Hamilton County

Kentucky Transportation Cabinet

Ohio DOT

OKI

Metro Transit

Transit Authority of Northern  
Kentucky

Cincinnati Police

Indiana DOT

Kenton County

KY Homeland Security

Kentucky State Police

ODPS

Ohio EMA

Ohio State Highway Patrol

US Coast Guard

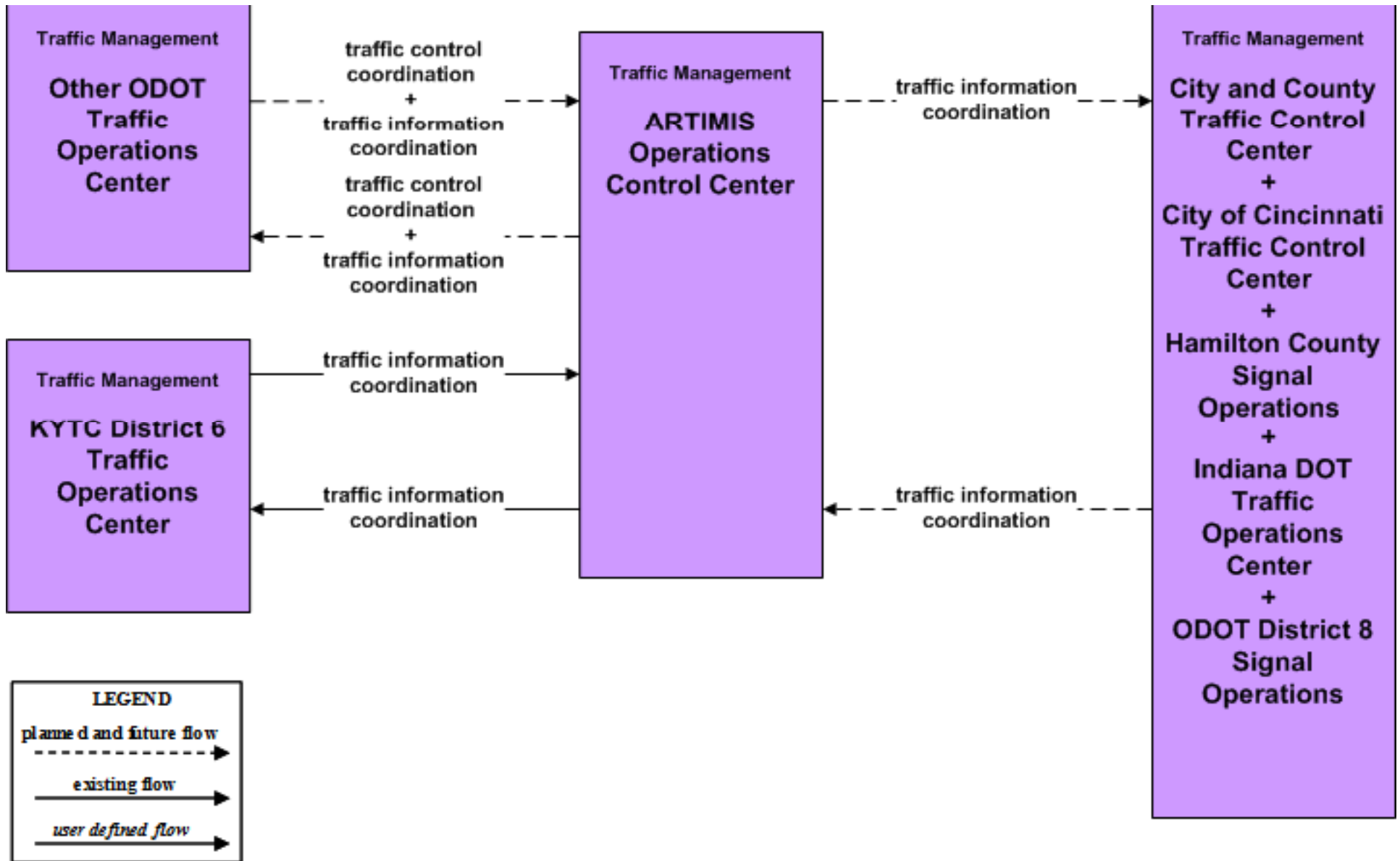


# Project Overview Timeline

	October 2007	November 2007	December 2007	January 2008	February 2008	March 2008
Inventory Meetings	★					
Initial Arch. Update						
Workshop			★			
Market Packages						
Projects Workshop					★	
Report						
Website						
Turbo						
Present to OKI Board						★



# Regional Traffic Control ARTIMIS





## Draft Cincinnati (OKI) Regional ITS Architecture

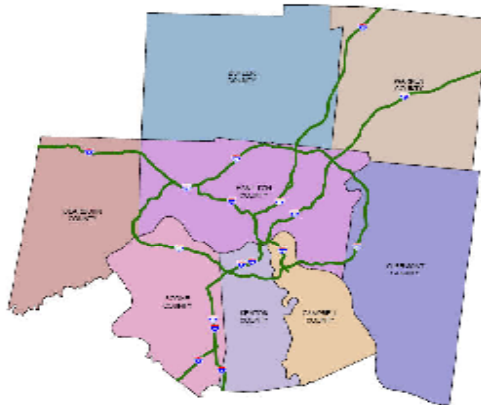
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The **OKI Regional ITS Architecture** is a roadmap for transportation systems integration in the OKI (Ohio-Kentucky-Indiana) Regional Council of Government tri-state area over the next 15 years. The OKI Regional ITS Architecture has been developed through a cooperative effort by the region's transportation agencies, covering all surface transportation modes in the region.

This draft OKI Regional ITS Architecture was developed through a series of stakeholder meetings and by reviewing the 2001 OKI Regional ITS Plan document, which included a regional ITS architecture. Additional information for the OKI Regional ITS Architecture was gathered through stakeholder input during a stakeholder workshop held on December 6, 2007. This draft OKI Regional ITS Architecture documents how stakeholders envision that each

agency's systems will work together in the future and how that sharing of information and resources will help provide a safer, more efficient, and more effective transportation system for travelers in the region.

The architecture is an important new tool that will be used by:

- Planning agencies to incorporate integration opportunities and operational needs into the transportation planning process;
- Operating and implementing agencies to recognize and implement transportation integration opportunities in the Region; and
- Other organizations and individuals that use the transportation system in the Region.

The architecture provides an overarching framework that spans all of these organizations and individual transportation projects. Using the architecture, each transportation project can be viewed as an element of the overall transportation system, providing visibility into the relationship between individual transportation projects and ways to cost-effectively build an integrated transportation system over time

# Future Projects

47 Potential ITS Related Projects Identified

\$20M for Kentucky

\$80M for Ohio

\$1M for Indiana

\$10M in Transit Updates



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# Future Projects

- METRO cameras linked to ARTIMIS
- Ramp Metering on I-75
- Snow and Ice Detection Management and Advanced Snow Plow Systems
- Hamilton County Evacuation Plan
- Vehicle Infrastructure Integration–Safety Monitoring
  - Advanced warnings for work zones
  - Traffic incidents
  - Hazardous road conditions/closures sharp curves or red like running



# Maintaining the Architecture

- OKI is the responsible agency
- As-needed amendments by Intermodal Coordinating Committee (technical committee to Board)
- Periodic maintenance concurrent with long-range Plan (Regional Transportation Plan) Update; Every 4 years.

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# Implementation

## OKI 2030 Regional Transportation Plan ITS Recommendations

- Ohio = \$50m, Kentucky = \$15m, Indiana = \$1m
- Key projects
  - Port security cameras
  - Upgrade Metro AVL system
  - ARTIMIS targeted expansion
  - I-75 and I-471 ramp metering
  - Highway-rail intersection advanced safety systems
- FY 2008-2011 TIP
  - ARTIMIS expansion to Dearborn County, Indiana (2 cameras with fiber optic connection to Cincinnati operations center) - \$325,000
  - I-74 ramp metering
  - Springdale ITS
  - Emergency vehicle preemption



# Contact Info

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