Greenup/Boyd County Freight Plan

Statewide Transportation Planning Meeting

10/20/2021

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Introduction

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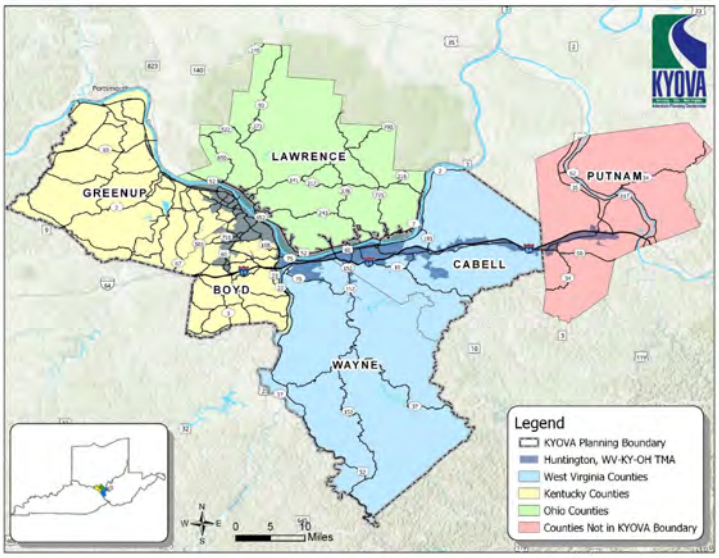
KYOVA Interstate Planning Commission

KYOVA
Kentucky • Ohio • West Virginia
Interstate Planning Commission



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Why Create A Freight Plan?

- **Impact on Communities:** Impact of highway and rail traffic
- **Good Jobs:** Freight dependent industries create jobs for all education levels
- **Federal Policy Direction:** MPO Freight Plans not required, but likely to happen in the future
- **Funding**: Increased focus nationally on freight projects

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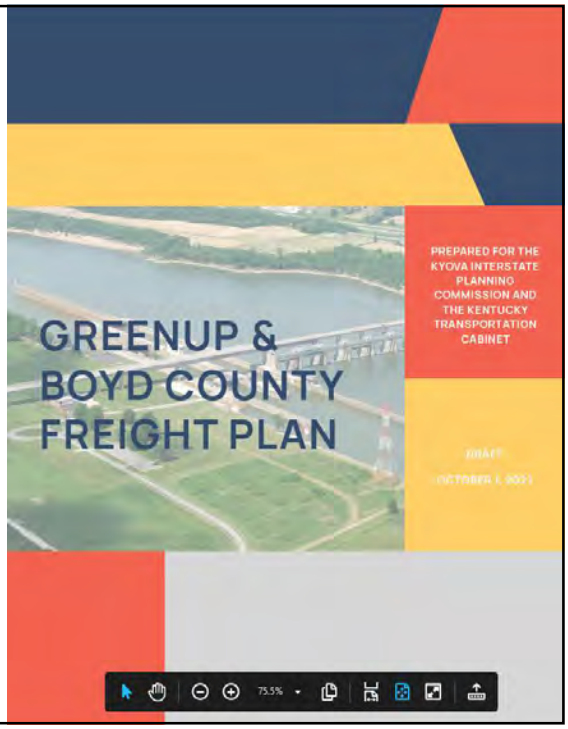
Project Overview

- Purpose
  - Develop a comprehensive understanding and profile of the existing (multimodal) freight network
  - Support decision-makers with funding and investment decisions to address freight needs
- Build Upon
  - State Freight and Rail Plans
    - Kentucky
    - Ohio
    - West Virginia
  - Ironton Truck Study
  - Multimodal Economic Impact Study for Huntington Tri-State Airport
  - KYOVA Metropolitan Transportation Plan



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#1 Objectives and Performance Measures

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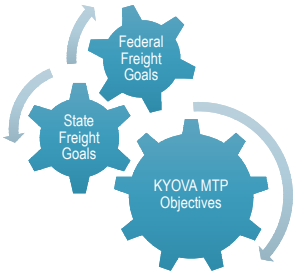
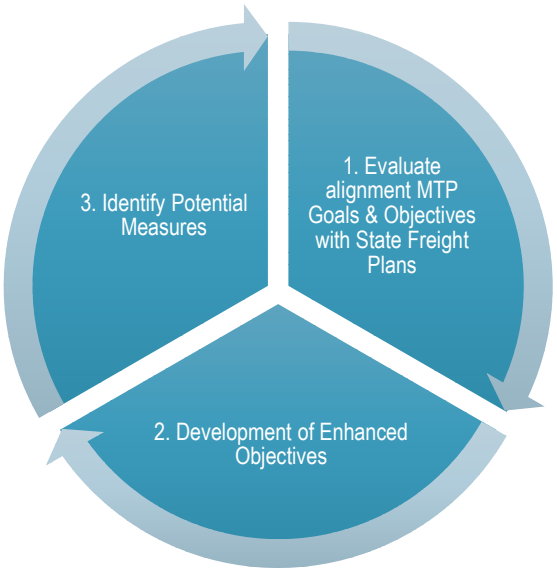
Objectives and Performance Measures

- Freight objectives and performance measures
  - Support MTP and State Freight Plans





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Future MTP Objectives

Preservation	Seek opportunities to use access management, pavement/bridge management techniques, and design treatments to improve the mobility of the KYOVA Freight Network
Economics	Give priority to projects that improve access to intermodal facilities and/or focus on business retention and expansion opportunities.
Operational Efficiencies	Promote highway, transit and freight operational efficiencies through the use of technological improvements
Safety	Promote programs and projects that reduce the number and severity of traffic crashes, especially at RR crossings.
	Reduce commercial truck crashes.
Security	Protect the capacity of I-64, strategic bridges and other regional corridors that serve as critical freight and evacuation routes
Environment and Energy	Minimize detrimental impacts of freight movement upon neighborhoods.
Integration and Connectivity	Integrated design approaches that include deliveries
	Promote infrastructure investment that supports multimodal freight connectivity points.
Financial Responsibly	Evaluate multimodal freight mode options before investing in added highway capacity.

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Potential Freight Performance Measures

Preservation	• Pavement ratings on the Freight Network • Bridge ratings on Freight Network
Economics	• TTTR on Freight Network • Delay on Freight Network
Operational Efficiencies	• Operational Investments/TIP Total
Safety	• Railroad Grade Crossing Crashes • Truck Crash Rate
Security	• V/C Ratio – Critical Routes • LOS – Critical Corridors
Environment and Energy	• EJ Impacts • Emissions (Model Output)
Integration and Connectivity	• Investment in connectivity points and/or last mile facilities that serve modal hubs
Financial Responsibly	• Local investment in the KYOVA Freight Network • % of spending on preservation on the KYOVA Freight Network

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Congestion Management Process

- Review of Existing CMP
  - Already included Freight
- Ideas
  - Freight Strategies
  - Leverage Freight Plan Analysis
  - Congestion vs Reliability

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#2 Freight Profile

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Freight System Profile

- Define the Multimodal Freight Network
- Existing Conditions Analysis
- Freight Profile

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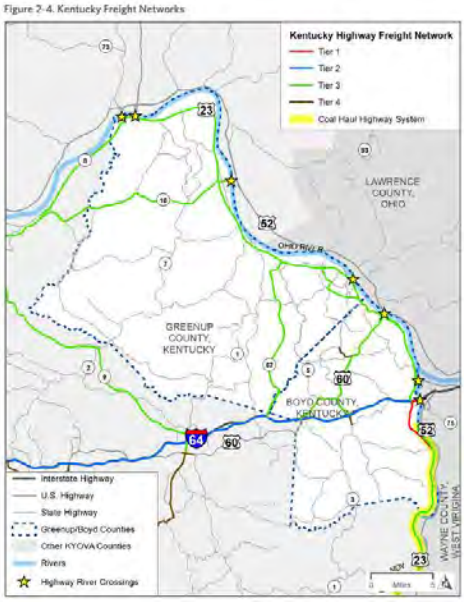
Kentucky Freight Networks

- Expands on National Truck Network
- Connects local industry to National Networks
- Tiered system
  1. Portions of I-64 and US 23 connecting ports and other major facilities to the network are included in the study area.
  2. All portions of I-64 that are not included in Tier 1 are assigned to Tier 2.
  3. Multiple highways in the study area are on Tier 3 including US 23, KY 10, and KY 67.
  4. One Tier 4 segment is within the study area connecting US 60 to facilities near the community of Summit.



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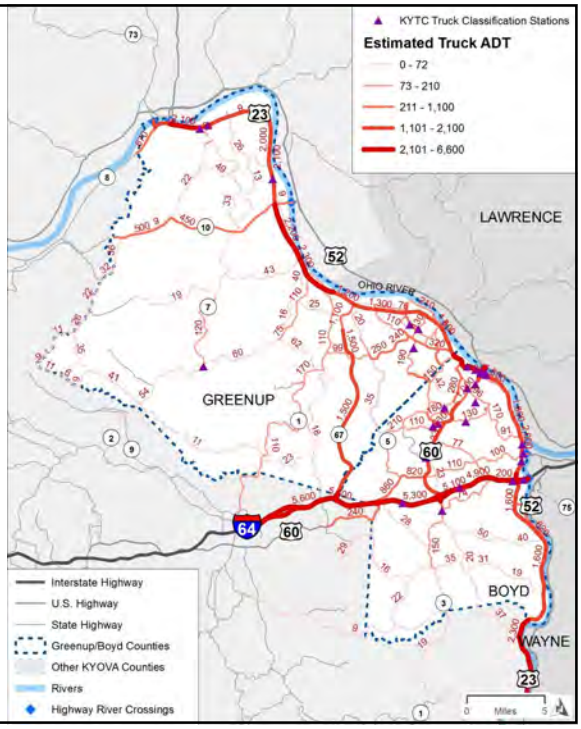
StreetLight Data

- Online transportation data provider:
  - Collects and processes truck GPS data
- Used to assess
  - Overall Activity
  - Truck Volume Estimates
  - Origin-Destinations
  - Top Routes



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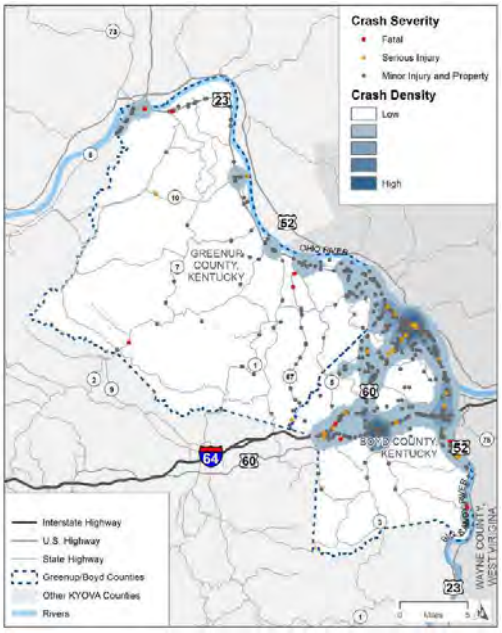
Truck Crashes

- Single-vehicle crashes (run off road, fixed object) make up 26% of truck crashes
- Crash hotspots in Ashland and Flying J travel plaza on I-64
- Also reviewed overlap w/KYOVA Safety Study



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Truck Origin-Destination

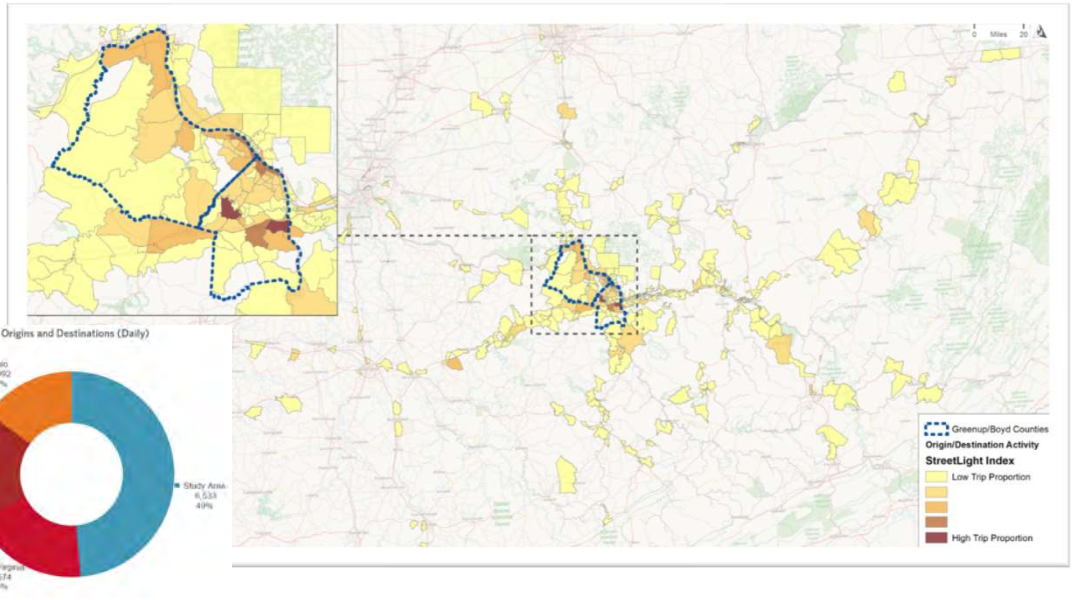
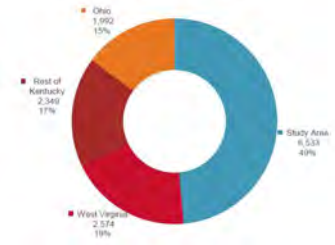


Figure 3-8. Key Truck Origins and Destinations (Daily)



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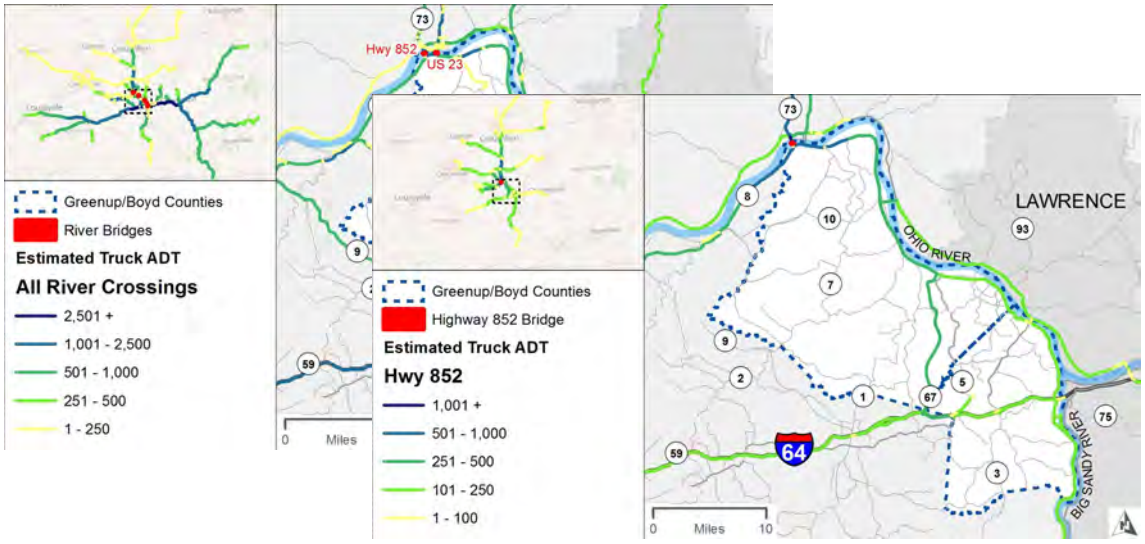
Top Route Analysis



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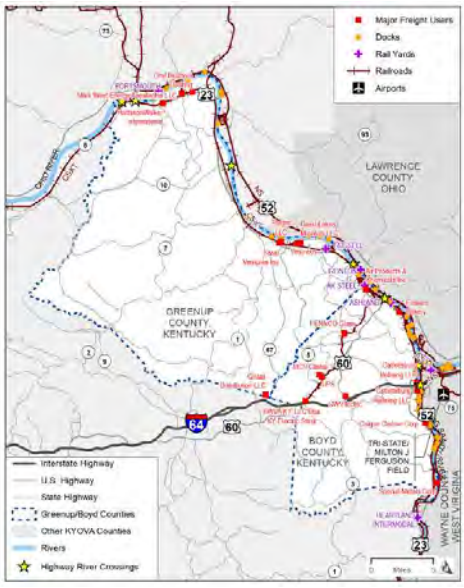
Multimodal Freight Facilities

- Major Freight User Inventory:
  - 24 locations within study area
- Majority of major freight multimodal facilities are located:
  - Adjacent to US-52, Ohio River
  - Adjacent to I-64
  - Adjacent to US-60
- Local Freight Network



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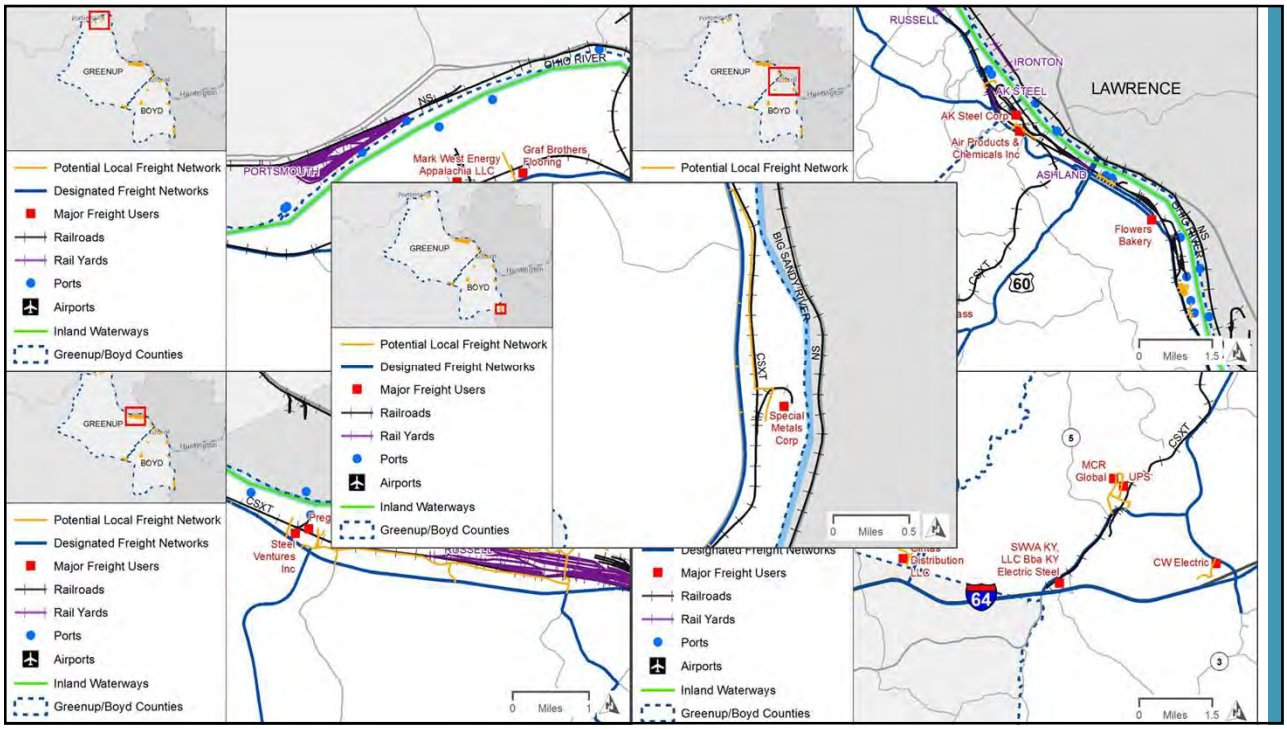

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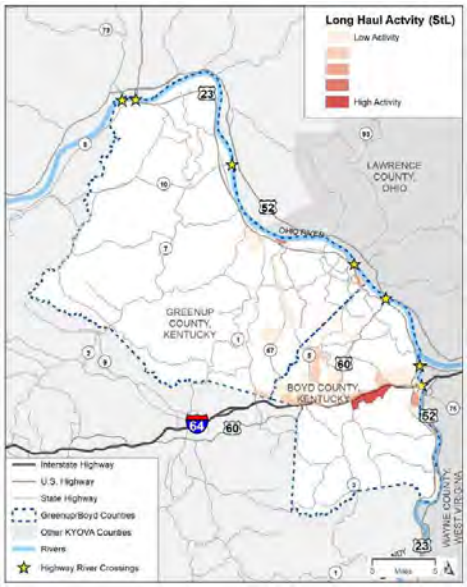
Truck Parking

- High-level analysis based on analysis of StreetLight data for:
  - Trip duration > 6 hours
- High activity areas:
  - Flying J Travel Plaza
  - Steel of West Virginia / Pregis Corporation
  - Former AK Steel facility (2019 data)



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Marine Freight

- Marine Highway M-70 (Ohio River)
- Commercially Navigable River: Big Sandy River
- Port of Huntington Tri-State
- In 2018, 42M tons valued at $10.5 B move by waterway to/from the Greenup-Boyd Riverport Authority Market Area

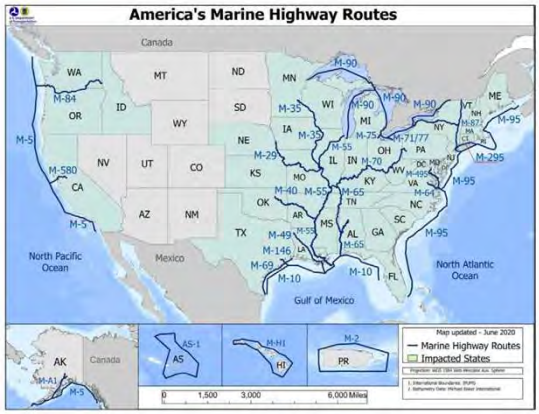

Figure 2-5: MARAD Designed Marine Highways

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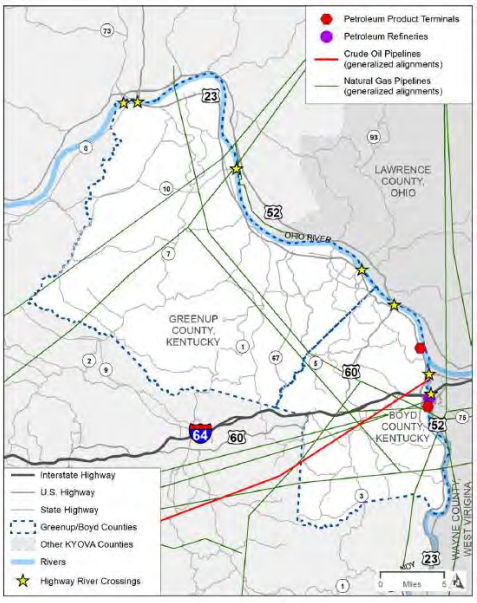
Pipeline

- Limited Information Available
- Marathon Catlettsburg Refinery a major refinery and national pipeline junction
- Relationship to KIPDA Regional Freight Mobility Study



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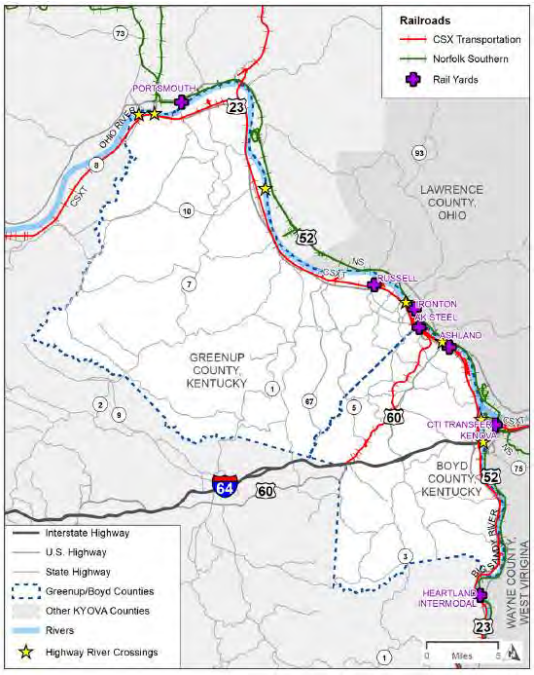
Railroads

- 3 large CSX rail yards within Greenup-Boyd
  - Russell
  - AK Steel (former)
  - Ashland
- Additional NS rail yards located in neighboring counties



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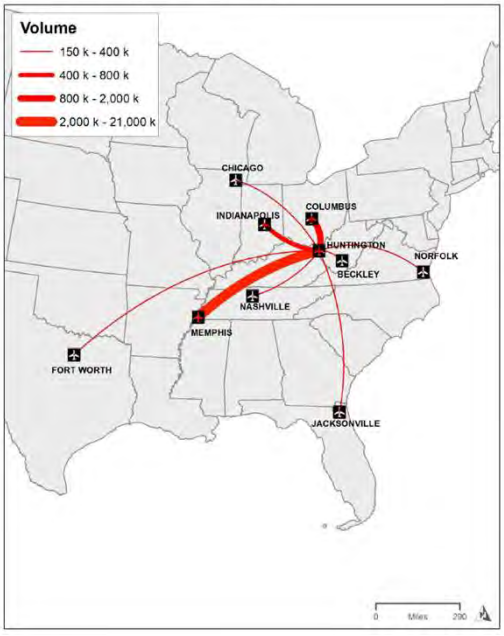
Air Cargo

- Huntington Tri-State Airport located 2 miles east of study area in West Virginia
- 21 M lbs. of freight handled in 2019
- Key connecting cities include:
  - Memphis
  - Columbus
  - Indianapolis

Figure 2-12. Air Cargo Flows (in Pounds)



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#3 Economic Development

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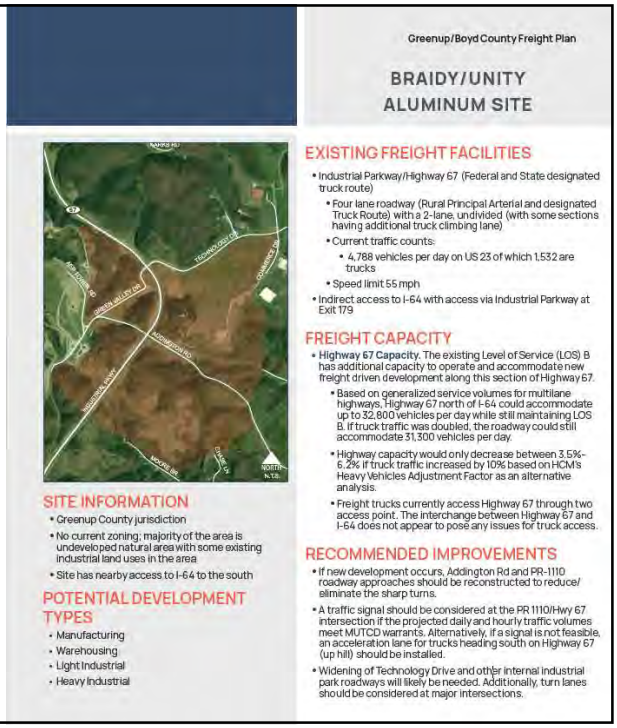
Economic Development

- Reverse site selection process
- Freight-intensive uses
  - Can the existing network sustain it?
  - What needs to be addressed?



Greenup/Boyd County Freight Plan

BRAIDY/UNITY ALUMINUM SITE

SITE INFORMATION

- Greenup County jurisdiction
- No current zoning; majority of the area is undeveloped natural area with some existing industrial land uses in the area
- Site has nearby access to I-64 to the south

POTENTIAL DEVELOPMENT TYPES

- Manufacturing
- Warehousing
- Light Industrial
- Heavy Industrial

EXISTING FREIGHT FACILITIES

- Industrial Parkway/Highway 67 (Federal and State designated truck route)
  - Four lane roadway (Rural Principal Arterial and designated Truck Route) with a 2-lane, undivided (with some sections having additional truck climbing lane)
  - Current traffic counts:
    - 4,788 vehicles per day on US 23 of which 1,532 are trucks
  - Speed limit 55 mph
- Indirect access to I-64 with access via Industrial Parkway at Exit 179

FREIGHT CAPACITY

- **Highway 67 Capacity.** The existing Level of Service (LOS) B has additional capacity to operate and accommodate new freight driven development along this section of Highway 67.
  - Based on generalized service volumes for multilane highways, Highway 67 north of I-64 could accommodate up to 32,800 vehicles per day while still maintaining LOS B. If truck traffic was doubled, the roadway could still accommodate 31,300 vehicles per day.
  - Highway capacity would only decrease between 3.5%-6.2% if truck traffic increased by 10% based on HCM's Heavy Vehicles Adjustment Factor as an alternative analysis.
  - Freight trucks currently access Highway 67 through two access point. The interchange between Highway 67 and I-64 does not appear to pose any issues for truck access.

RECOMMENDED IMPROVEMENTS

- If new development occurs, Addington Rd and PR-1110 roadway approaches should be reconstructed to reduce/eliminate the sharp turns.
- A traffic signal should be considered at the PR 1110/Hwy 67 intersection if the projected daily and hourly traffic volumes meet MUTCD warrants. Alternatively, if a signal is not feasible, an acceleration lane for trucks heading south on Highway 67 (up hill) should be installed.
- Widening of Technology Drive and other internal industrial park roadways will likely be needed. Additionally, turn lanes should be considered at major intersections.

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#4 SWOT Analysis

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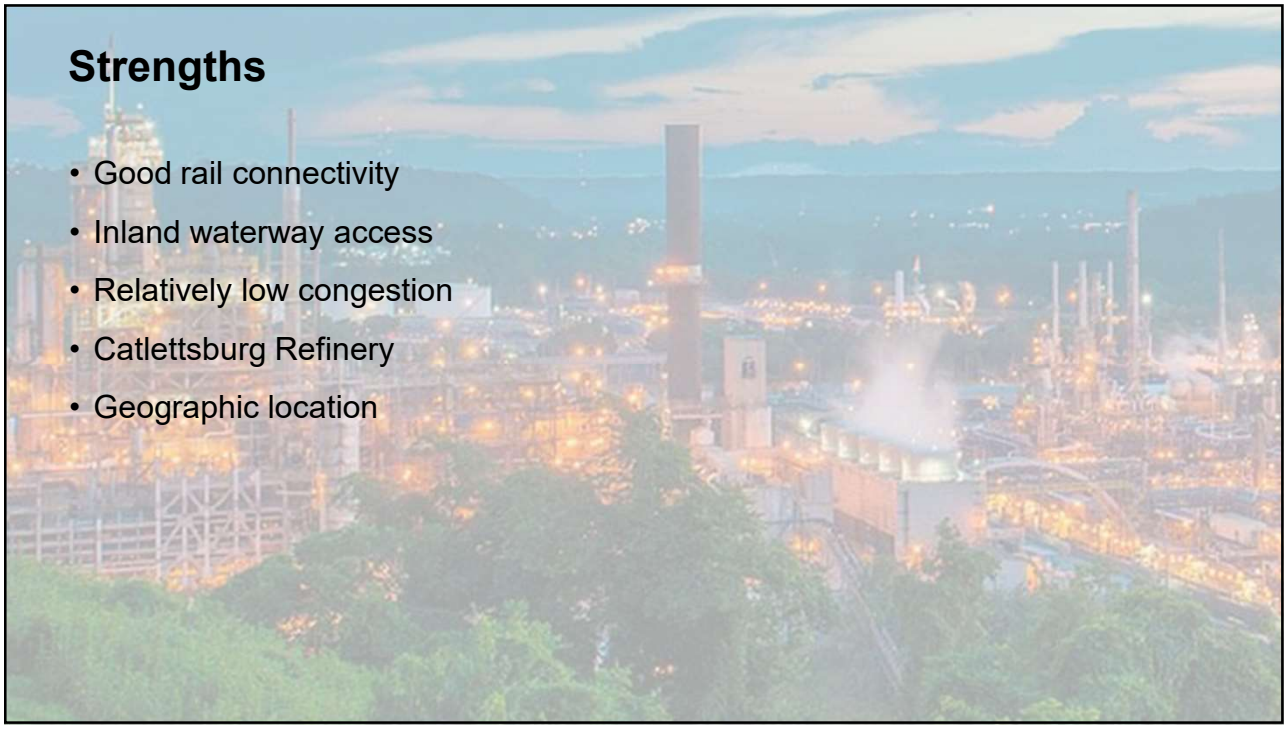

Strengths

- Good rail connectivity
- Inland waterway access
- Relatively low congestion
- Catlettsburg Refinery
- Geographic location

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Weaknesses

- Low population density, distance to metropolitan centers
- 83% of Ohio River tonnage are coal and petroleum products (in this area)
  - Structural market challenges – Coal fired power plants -> natural gas
- Prime industrial areas are located within the flood plain
- Pavement conditions on US 23
- Low volumes of O/D movements (88% through movements)

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Opportunities

- Inland waterway capacity
- Brownfield redevelopment (AK Steel Plan)
  - Multimodal connectivity
- Crash hotspots
  - Ashland and the Flying J on I-64
- Business parks – focus on connectivity and access

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#5 Recommendations

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Recommendations

POLICIES, PROGRAMS AND PARTNERSHIPS

DESIGNED TO DEVELOP HOLISTIC IMPROVEMENTS TO THE FREIGHT SYSTEM.

PROJECTS

SPECIFIC INFRASTRUCTURE PROJECTS TARGETED AT IMPROVING FREIGHT MOBILITY.

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Policies, Programs and Partnerships (Good Repair)

MTP GOAL	Preserve, maintain, and enhance the existing transportation system.
FREIGHT OBJECTIVE	Seek opportunities to use access management, pavement/bridge management techniques, and design treatments to improve the mobility of the KYOVA Freight Network
RECOMMENDATIONS	• Develop an asset management plan that focuses on key freight corridors • Use bridge sensors to actively monitor river bridge conditions • Explore weigh-in-motion technology to monitor loads on key corridors and bridges • Pursue pavement rehabilitation projects along corridors identified with needs in Chapter 2 – Like U.S. 23 • Consider using pavement designed for heavy truck traffic on freight corridors • Coordinate multi-state communication efforts to drivers when key bridges or corridors are closed

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Policies, Programs and Partnerships (Economic Vitality)

MTP GOAL	Support the economic vitality of the region, especially by enabling global competitiveness, productivity, and efficiency.
FREIGHT OBJECTIVE	Give priority to projects that improve access to intermodal facilities and/or focus on business retention and expansion opportunities.
RECOMMENDATIONS	• Leverage the results of this plan to increase KYOVA's role in regional economic development efforts • Implement local recommendations identified by the KYTC Riverports Study • Work with local and state economic development partners to identify development opportunities near the area's existing rail yards and facilities • Leverage existing river access points that are underutilized • Maintain multistate efforts to access the Huntington International Airport air cargo facilities • Focus on Llast mile investments that focus on providing provide connectivity between modes

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Policies, Programs and Partnerships (Operations)

MTP GOAL	Improve the operational efficiency of the transportation network.
FREIGHT OBJECTIVE	Promote highway, transit, and freight operational efficiencies through the use of technological improvements.
RECOMMENDATIONS	• Use travel demand management initiatives to reduce traffic on key freight corridors • Explore innovative solutions like micro-transit/ mobility-as-a-service vendors to solve workforce mobility challenges. • Improve signage – both directional and dynamic messaging signs

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Policies, Programs and Partnerships (Safety)

MTP GOAL	Enhance the safety of the transportation system for all users.
FREIGHT OBJECTIVE	Promote programs and projects that reduce the number and severity of traffic crashes, especially at railroad crossings. Reduce commercial truck crashes.
RECOMMENDATIONS	• Integrate freight into the next KYOVA safety study • Partner with Operation Lifesaver and other groups to improve grade crossing safety education • Develop spot improvements in corridors with significant crash frequencies • Work with CSX to improve safety at grade crossings with a high hazard index or geometric issues • Ensure that new grade crossing risks are mitigated As as new freight-dependent businesses develop near multimodal corridors, ensure that new grade crossing risks are mitigated.

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Policies, Programs and Partnerships (Security)

MTP GOAL	Enhance the security of the transportation system for all users.
FREIGHT OBJECTIVE	Protect the capacity of I-64, strategic bridges and other regional corridors that serve as critical freight and evacuation routes.
RECOMMENDATIONS	• Prioritize improvements that harden critical infrastructure or provide resiliency • Work with local law enforcement to ensure critical infrastructure is actively monitored • Partner with statewide/multi-state homeland security efforts focused on infrastructure

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Policies, Programs and Partnerships (Environment)

MTP GOAL	Protect and enhance the environment and promote energy conservation.
FREIGHT OBJECTIVE	Minimize detrimental impacts of freight movement upon neighborhoods.
RECOMMENDATIONS	• Improve signal timing along key freight corridors that traverse neighborhoods, downtowns or pass near civic infrastructure to reduce idling (and the subsequent emissions) • Study the use of truck signal priority to reduce emissions • Explore funding programs to leverage KYOVA's role as a convenor to help facilitate zero emissions freight movement (i.e., electric trucks) • Champion efforts to remediate brownfield that could serve as prime economic development opportunities.

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Policies, Programs and Partnerships (Connectivity)

MTP GOAL	Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
FREIGHT OBJECTIVE	Encourage integrated design approaches that include deliveries along and in a complete streets context, streetscape or traffic calming initiative(s) Promote infrastructure investment that supports multimodal freight connectivity points.
RECOMMENDATIONS	• Create an MPO-wide freight plan based on the framework developed by this plan • Integrate the recommendations of the KYTC Freight Plan and Riverport Study • Leverage KYOVA's position as a multimodal crossing to create economic development • Pursue MARAD Marine Highway Project Status for key economic development initiatives • Complete Mmaintenance and improvements that are needed on many of the Ohio River lock and dams (downstream from the KYOVA region), as several have outlasted their design life. • Provide expertise and assistance to local governments as they retrofit or rehabilitate areas with freight needs.

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Policies, Programs and Partnerships (Financial Resp.)

MTP GOAL	Maintain financial responsibility in the development and preservation of the transportation system.
FREIGHT OBJECTIVE	Evaluate multimodal freight mode options before investing in added highway capacity.
RECOMMENDATIONS	• Evaluate multimodal options before appropriate KYOVA dollars or supporting outside funding requests • Provide expertise and assistance to their local partners interested in pursuing discretionary grant opportunities.

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Project Prioritization Process – Step 1

1 Step 1: Project Identification

- A list of projects was compiled from previous freight and transportation planning efforts throughout the region including:
  - Greenup/Boyd County Freight Plan – Freight Profile Results
  - Boyd-Greenup Small Urban Transportation Study
  - Ashland Areas 2040 Metropolitan Transportation Plan
  - Congestion Management Process: Final Report
  - KY SHIFT Program
  - KYOVA Transportation Improvement Plan
  - KYOVA project team proposed a small number of additional projects
- These projects were then screened to only include projects that were on the freight network that was identified in the freight profile and projects that would improve freight mobility. Other transportation projects, such as sidewalk improvements, were removed. This resulted in a list of freight projects

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Project Prioritization Process – Step 2

2 Step 2: Scoring Projects

The list of freight projects were scored (from 0 to 1) based upon six criteria. A score was calculated for each of the criteria by dividing all project calculations into quartiles and awarding 0 to 1 points based upon which quartile merited.

- **Safety:** Truck Annual Average Daily Traffic (AADT), Project Vehicle Miles Travelled (VMT), Total Crashes and Crash Rate
- **Economic Development:** Project VMT and if the project is adjacent to a designated economic development area
- **Asset Management:** AADT, pavement condition and bridge condition
- **Congestion:** Listed in Congestion Management Plan and/or Vehicle Hours Delay (VHD)
- **Benefit/Cost Ratio:** Total score per millions in project cost
- **Local Priorities:** High, moderate and low factor based on projects prioritized by local transportation groups

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Project Prioritization Process – Step 3

3 Step 3: Prioritize Projects

- Total score was calculated using a weighted score based on the KY SHIFT process:
  - **Safety:** 20%
  - **Economic:** 15%
  - **Asset Management:** 10%
  - **Congestion:** 10%
  - **Benefit/Cost Analysis:** 15%
  - **Local Priorities:** 30%

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Project Prioritization Process – Step 4

4 Step 4: Implementation Tiers

- Following the weighted ranking, the projects were divided into four tiers based on a combination of project ranking and ease of execution (short, medium, long term).
  - **Tier I:** Projects KYOVA should focus on executing first due to high priority or because the project could be implemented quickly.
  - **Tier II:** Projects to be implemented once many of the Tier I initiatives are completed.
  - **Tier III:** Projects KYOVA should focus on executing long-term; several of these projects either require larger investments or will require planning studies.
  - **Tier IV:** Projects that KYOVA should focus on if or when a freight industry development is proposed nearby.

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Project P

1 Project Rank (with Local Priorities)

Project Number | 29

US-23 Safety Improvements (Crash Rate Greater than 105% of State Avg)

KTC Route ID: 045-US-0023-000

Item # or CHAF #: --

Start MP 0.0 — End MP 7.6

Urban | Rural

Approx. Project Cost

$ 4,500,000

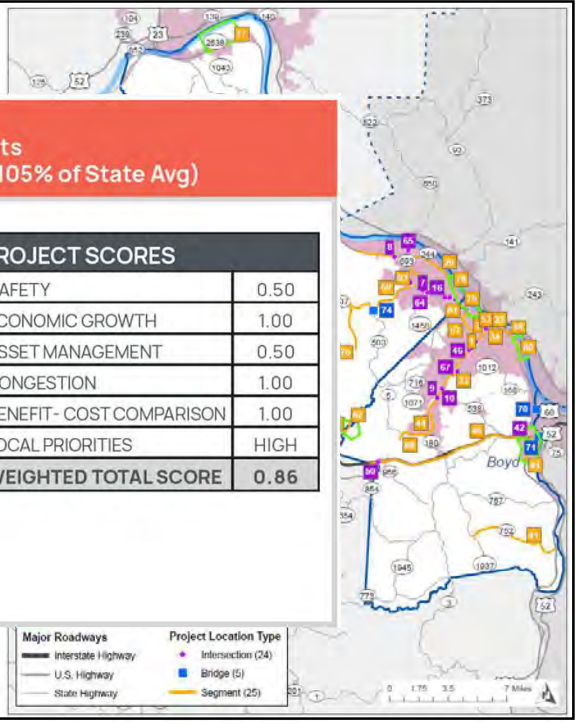
Type: Segment Project

Priority Tier: I II III

Comments

- US-23: SR-67-to-County Line (8 mi.) R-Cut Conversion

PROJECT SCORES	
SAFETY	0.50
ECONOMIC GROWTH	1.00
ASSET MANAGEMENT	0.50
CONGESTION	1.00
BENEFIT - COST COMPARISON	1.00
LOCAL PRIORITIES	HIGH
WEIGHTED TOTAL SCORE	**0.86**



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Questions
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INTERSTATE
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