

## 7 Recommendations

### 7.1 Introduction

The preceding chapters have laid out the entire planning development process, data collection, data analysis, and identification of key strengths and deficiencies of each freight transportation mode. This chapter presents the recommendations which are based on the preceding analysis of strengths and weaknesses of the OKI regional freight system. Recommendations can vary from capital projects to strategies that address deficiencies over the next 30 years. These recommendations have been identified as part of the regional needs assessment conducted in Chapter 4. These recommendations present a planning level, solution proposal to addressing system deficiencies. To the extent possible, each of these recommendations has been tested against the performance metrics developed in Chapter 5. Through a high-level, qualitative evaluation, OKI was able to evaluate the merits of each recommendation and whether they meet the goals. These recommendations have then been prioritized based on a time-horizon (immediate, mid and long term) that reflects the urgency of carrying out the proposed recommendation.

### 7.2 Structure of Recommendations

As each recommendation is presented in this chapter, the problem statement has been summarized. The focus in this chapter is placed on the recommended improvement or strategy needed to address specific deficiencies. Following a short text summary, capital cost estimates for each of the recommendations are developed based on existing studies, data from similar projects, or planning-level cost estimates. It is important to note that, to date, no engineering analysis has been performed for most of the recommendations, so cost estimates are at a conceptual planning level and provide the best estimates given current understanding of the issue and data available. Cost estimates are provided in year 2011 dollars.

The timing for each recommendation is categorized as “immediate” (0 – 5 years), “mid term” (5 – 10 years) or “long term” (over 10 years) depending on the urgency of the freight system deficiency and the recommendation’s contribution to the freight plan’s goals.

### 7.3 Evaluation Measures

The recommendations will work to remedy freight deficiencies to keep the region competitive in the future and build on the region’s freight transportation assets as a driver of economic development. In evaluating the potential freight project recommendations, OKI sought to establish a common link between freight goals and regional transportation goals that were discussed in Chapter 5. Thus, the evaluation process was not quantitative in nature, but rather a qualitative review that screened freight deficiencies against regional transportation goals. All recommendations were evaluated to contribute to one or more of the freight-related goals:

- **Mobility and Intermodal Connectivity** – Projects that improve freight mobility by reducing congestion or developing better connections between modes of transportation in the region.

- **Economic Vitality** – Projects that promote economic development by providing freight connections for new and expanded businesses or lowering shipping costs for businesses in the region.
- **Environment and Public Health** – Projects that improve air quality or reduce energy consumption and consider existing and future land use.
- **Safety and Security** – Projects that improve safety (such as those that address high crash rates), projects that reduce hazards (such as a railroad grade separation), and projects that address freight system security, including hazardous material spills, and natural or human disasters.
- **System Preservation and Condition** – Projects that improve or preserve the condition of existing freight infrastructure, including deficient railroad track, deficient bridges, or highway pavement heavily distressed by truck traffic.

Each of the freight project and policy recommendations was evaluated based on the above goals. The evaluation results for all 58 freight plan recommendations are presented in Table 7-1 through Table 7-4. For summary and comparison purposes, the recommendation’s potential and positive impact on each of the five goals was measured using “high = +++,” “medium = ++,” or “low = +.”

## 7.4 Top Regional Priorities

The freight transportation needs for the OKI region are immense and have resulted in a large number of recommendations. For each recommendation, there exists a clear, definable need. Given the overwhelming amount of need, however, it became clear to OKI that those recommendations having the greatest potential impact on the entire region must be highlighted. The below list summarizes the 12 top regional freight priority recommendations, which are supported as immediate projects. These improvements are required to address deficiencies in the freight transportation network that exist today. These top regional priorities are also the recommendations that would have the highest impact in addressing each of the plan’s five strategic goals.

The Brent Spence Bridge is the sine qua non of any freight, transportation or economic development plan. As such, it stands alone in importance. However, this should not diminish the critical need for other projects that are needed to address the region’s freight needs. In fact, the Brent Spence Bridge, without these other improvements, will not deliver a freight network that will be competitive in coming decades.

### Priority Regional Freight Recommendations (listed in alphabetical order)

- ❖ Activate the “Port” in the Port of Greater Cincinnati Development Authority (\$300,000 annually)
- ❖ ARTIMIS Message Signs (\$1,388,000)
- ❖ Brent Spence Bridge (\$2,300,000,000)
- ❖ CVG Air Cargo Park (\$50,000,000)
- ❖ East Sharon Road Study (\$250,000)
- ❖ Grand Avenue Improvement, Taylor Mill (\$4,500,000)
- ❖ Hamilton-Mason Road Mouse Hole: Rail Underpass Widening and Reconstruction (\$12,000,000)
- ❖ Hopple Street Passing Track and Crossovers (\$8,000,000-\$10,000,000)
- ❖ I-75 Mill Creek Expressway and Thru the Valley (\$644,900,000)
- ❖ I-471 Reconstruction (\$36,615,000)
- ❖ Reading Road Grade Separation, Sharonville (\$25,000,000)
- ❖ Regional Public-Private Freight Rail Partnership (\$100,000 annually)

Table 7-1: Roadway Freight Recommendations

Page Number	Name of Recommendation	Mobility and Intermodal Connectivity	Economic Vitality	Environment and Public Health	Safety and Security	System Preservation and Condition	Recommendation Timing (Immediate, Mid Term, Long Term)
<b>REGIONAL TRUCK FREIGHT MOBILITY</b>							
7-8	ARTIMIS Message Signs	+++	++	+++	++	n/a	Immediate
7-9	Brent Spence Bridge	+++	+++	+++	+++	+++	Immediate
7-10	Eastern Corridor	+++	+++	++	++	++	Mid Term
7-11	I-75 Mill Creek Expressway and Thru the Valley	+++	+++	++	+++	+++	Immediate
7-12	I-471 Reconstruction	++	+++	++	++	+++	Immediate
<b>LOCAL TRUCK ACCESS PROJECTS</b>							
<b>Boone County, Kentucky</b>							
7-13	Gunpowder Road Improvement	+++	++	+	+	+	Long Term
7-13	I-71/I-75 Richwood and Mt. Zion Interchanges	+++	++	++	++	++	Mid Term
<b>Butler County, Ohio</b>							
7-14	Hamilton-Mason Road Mouse Hole	+++	+++	++	+++	++	Immediate
7-14	Cincinnati-Dayton Road Mouse Hole	++	++	++	++	++	Mid Term
7-15	Kyles Station Road Mouse Hole	++	++	+	++	+	Long Term
7-15	Princeton Road Mouse Hole	++	++	+	++	+	Long Term
7-15	West Chester Road Mouse Hole	++	++	+	++	+	Long Term
7-15	I-75/Union Centre Boulevard Interchange	+++	+++	++	++	+	Long Term
7-16	South Hamilton Crossing	+++	+++	++	++	++	Immediate
<b>Campbell County, Kentucky</b>							
7-16	US 27 Improvements	++	++	+	++	++	Long Term
<b>Clermont County, Ohio</b>							
7-17	SR 125/Ohio Pike Access Management	++	++	+	++	+	Long Term
7-17	US 50/Roundbottom Rd Intersection	++	+	+	++	+	Mid Term
7-17	US 50/SR 132/SR 276 Intersection	++	+	+	++	+	Mid Term
7-18	US 50/SR 222 Intersection	++	+	+	++	+	Long Term

**Table 7-1: Roadway Freight Recommendations (continued)**

Page Number	Name of Recommendation	Mobility and Intermodal Connectivity	Economic Vitality	Environment and Public Health	Safety and Security	System Preservation and Condition	Recommendation Timing (Immediate, Mid Term, Long Term)
<b>LOCAL TRUCK ACCESS PROJECTS (continued)</b>							
<b>Dearborn County, Indiana</b>							
7-18	South SR 1 Corridor Improvement	+	+	++	++	+	Long Term
7-18	SR 1 Intersection Improvements	++	++	+	+++	+	Mid Term
7-19	SR 1 Truck Climbing Lane	++	+	+	++	+	Mid Term
7-19	US 50/State Line Road Intersection	++	+	+	+++	+	Immediate
<b>Hamilton County, Ohio</b>							
7-20	Ancor Connector	++	++	++	++	+	Mid Term
7-21	East Sharon Road Study	+++	+++	++	+++	+++	Immediate
7-21	Governor's Way/Union Cemetery Road Intersection	++	++	++	++	++	Mid Term
7-22	New Ohio River Crossing Future Study	+++	+++	++	+	+	Long Term
<b>Kenton County, Kentucky</b>							
7-22	Grand Avenue Improvement, Taylor Mill	+++	+++	++	+++	+++	Immediate
7-23	KY 16/KY 17 Intersection	++	+	+	++	++	Long Term
7-23	KY 536 Road Improvements	+++	+++	+	++	++	Mid Term
7-24	Mary Grubbs Highway Extension	++	+++	+	+	+	Mid Term
7-24	Ritte's Corner	+++	+	++	+++	+++	Immediate
7-25	Truck Access South of I-275	+++	++	+	++	+	Long Term
<b>Warren County, Ohio</b>							
7-26	Columbia Road Improvement and Kings Island Drive Extension	++	+++	+	++	+	Immediate
7-26	Gateway Boulevard Extension	++	+++	+	++	+	Long Term
7-26	King Avenue/Grandin Road Horizontal Curve Correction	++	++	+	+++	++	Immediate
7-27	New Connector Road	++	++	+	++	++	Immediate
7-27	SR 123 Improvements	++	++	+	+	++	Long Term
7-27	Turtlecreek Road Bridge and Intersection	++	++	+	++	++	Immediate
7-28	Union Road Improvements	++	++	+	+	++	Long Term

Table 7-1: Roadway Freight Recommendations (continued)

Page Number	Name of Recommendation	Mobility and Intermodal Connectivity	Economic Vitality	Environment and Public Health	Safety and Security	System Preservation and Condition	Recommendation Timing (Immediate, Mid Term, Long Term)
<b>TRUCK FREIGHT POLICY RECOMMENDATIONS</b>							
7-28	National Highway System Intermodal Connectors and Facilities: Sharon Intermodal Yard and East Sharon Road/I-75 Intermodal Connector	+++	+++	+	++	++	Immediate
7-29	National Highway System Intermodal Connectors and Facilities: Dixie Highway/I-71/I-75 Intermodal Connector	+++	+++	+	+	+++	Immediate
7-30	National Highway System Intermodal Connectors and Facilities: AK Steel/I-75 Intermodal Connector	+++	+++	+	+	+++	Immediate
7-30	Regional Express Truck Lanes Feasibility Study	+++	+++	++	++	++	Immediate
7-31	Regional Truck Size and Weight Regulation	++	+++	+	++	+++	Immediate
7-33	Alternative Fuel Stations for Truck Fleets	+	++	+++	+	+	Mid Term

**Table 7-2: Rail Freight Recommendations**

Page Number	Name of Recommendation	Mobility and Intermodal Connectivity	Economic Vitality	Environment and Public Health	Safety and Security	System Preservation and Condition	Recommendation Timing (Immediate, Mid Term, Long Term)
7-34	Regional Public-Private Freight Rail Partnership	+++	+++	+++	+++	+++	Immediate
7-35	At-Grade Crossing: Safety Study	+	+	+	+++	++	Immediate
7-37	Rail Quiet Zones	+	+	+++	+++	+	Immediate
7-38	Hopple Street Passing Track and Crossovers	+++	+++	++	++	++	Immediate
7-39	Mill Creek Additional Track	+++	+++	++	++	++	Mid Term
7-40	Capacity Improvements to CSX's Cincinnati Terminal Subdivision north of NA Junction	+++	+++	++	++	++	Mid Term
7-41	Rail Corridor Banking	+++	++	+	+	+++	Immediate
7-42	Railroad Economic Development Properties	++	+++	+	+	++	Immediate
7-43	Reading Road Grade Separation, Sharonville	+++	+++	+++	+++	+++	Immediate
7-44	Western Hills Viaduct	+++	+++	++	++	++	Long Term

**Table 7-3: River/Inland Waterway Recommendations**

Page Number	Name of Recommendation	Mobility and Intermodal Connectivity	Economic Vitality	Environment and Public Health	Safety and Security	System Preservation and Condition	Recommendation Timing (Immediate, Mid Term, Long Term)
7-44	Activate the "Port" in the Port of Greater Cincinnati Development Authority	+++	+++	++	++	++	Immediate

**Table 7-4: Air Freight Recommendations**

Page Number	Name of Recommendation	Mobility and Intermodal Connectivity	Economic Vitality	Environment and Public Health	Safety and Security	System Preservation and Condition	Recommendation Timing (Immediate, Mid Term, Long Term)
7-47	CVG Air Cargo Park	+++	+++	++	++	++	Immediate

Total estimated cost of top regional freight priority recommendations is \$3,085,053,000. Each of these recommendations is discussed in more detail in the sections that follow along with all other recommendations for the region. The recommendations continue to be presented in this document by alphabetical order and freight mode (highway, rail, river/inland waterway and air).

## 7.5 Roadway Freight Recommendations

Trucks handle almost 60 percent of the region's freight transportation today. Truck volume—as measured in the volume of trucks and the miles they drive—is forecasted to increase three percent annually over the next 30 years. At this rate, truck travel in the region will double in just 24 years. To accommodate this growth in trucking, the following projects were identified.

### 7.5.1 Regional Truck Freight Mobility

#### *ARTIMIS Message Signs*

Interviews with regional trucking companies showed that dynamic messaging signs are very popular; however, many interviewees felt they are placed too close to the point of congestion to allow for trucks to take alternative routes. It was suggested that the location of dynamic message signs be reviewed and potentially moved or additional signs introduced at new sites to make them more useful for the trucking industry.

ODOT is evaluating less costly Destination Dynamic Message Signs (DDMS), with wireless communications, which could be efficiently located at more places on the regional freeway system. As most ARTIMIS dynamic message signs are nearing 20 years of age, identifying cost-effective replacement signs is imperative.

Current ARTIMIS message signs in the OKI region are concentrated on north-south traffic movements along the I-71 and I-75 corridors and connecting roadways. Regional growth and traffic patterns require more message signs on western and eastern approaches to the region, with these four locations as the highest priority:

- Clermont County: SR 32, westbound, approaching I-275
- Dearborn County: I-74 eastbound, approaching I-275 (before the SR 1 interchange)
- Western Hamilton County: I-275 westbound, one mile before the interchange with SR 126
- Western Hamilton County: I-275 eastbound, one mile before the interchange with I-74

The locations above call for large dynamic message signs mounted on a truss over the roadway. The cost for such a sign is approximately \$350,000 each. The four locations above will require the planning efforts of ODOT and INDOT staff, both to identify funding for the message signs and to identify the appropriate siting and design for each installation. In addition, INDOT will have to



ARTIMIS Message Signs

become a signatory to the current bi-state agreement between KYTC and ODOT, to ensure coordination and operating protocols for the new signs in Indiana.

ODOT's pilot DDMS are smaller, ground-mounted, roadside signs that cost approximately \$23,000 each. These smaller signs provide more direct information on travel time to a specific destination, and their lower cost will allow installation of more signs, such as around I-275.

**Cost:** \$1,388,000 (estimate of \$347,000 per location, based on overhead, LED dynamic message sign at four locations, and five DDMS, at \$23,000 each, on I-275)

**Timing:** Immediate

**Implementing Agencies:** ODOT and INDOT, according to location

### ***Brent Spence Bridge***

OKI's top regional transportation priority is the replacement of the Brent Spence Bridge on the busiest freight corridor in the nation. The Brent Spence Bridge is old and carries twice the number of vehicles as it was designed to carry. Daily backups from congestion on the bridge can extend more than three miles. These concerns have led to this project being considered a top priority by the KYTC, ODOT, OKI, and the cities of Covington, Kentucky, and Cincinnati, Ohio.



**Brent Spence Bridge**

The Brent Spence Bridge carries I-71/75 over the Ohio River and is substandard from a capacity standpoint for the traffic it carries today. Opened in 1963, the bridge was designed to carry 80,000 vehicles per day, but currently handles 150,000—30,300 of which are trucks. The USDOT's National Bridge Inventory lists the Brent Spence Bridge as functionally obsolete because of capacity, sight distance and safety concerns associated with its current configuration.

From a freight standpoint, the OKI region would cease to function if the Brent Spence Bridge fails. While freight traffic can now back up because of congestion on the bridge, a failure of the structure would be catastrophic.

The only alternate highway routes to the Brent Spence Bridge are I-275 and I-471. These routes and their connecting roadways are not constructed to handle the large increase in vehicular traffic that would be diverted. The result would be gridlock for truck freight, adding time and increasing costs for shippers. The inability to adequately serve freight traffic would have deleterious effects on business, employment and regional income.

A project to replace the Brent Spence Bridge is under development by KYTC and ODOT. The goals of the project are to improve traffic flow and safety, correct geometric deficiencies and enhance connection to key regional and national transportation corridors. While the environmental process is not yet complete, the project is expected to entail construction of a new I-71/75 bridge adjacent to the existing Brent Spence Bridge, with the existing bridge converted to handle local traffic movement.

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While replacing the bridge will improve freight mobility, it will be equally important for transportation planners to accommodate truck detours during this multi-year construction project.

**Cost:** \$ 2,300,000,000<sup>37</sup>

**Timing:** Immediate

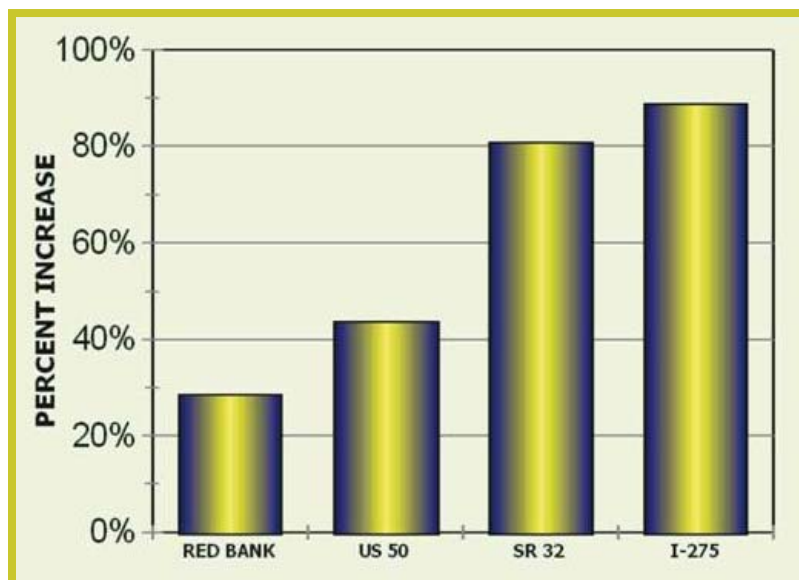
**Implementing Agencies:** KYTC and ODOT

### **Eastern Corridor**

The existing Eastern Corridor transportation network is characterized by high accident rates and heavy congestion and delays during peak travel times, which primarily affect commuter or passenger motorists however, smaller delivery vehicles, dump trucks and other commercial vehicles also rely on the roadway network. Roadway issues are attributed to the two-lane facilities that have not been substantially improved in four decades and do not meet current capacity demand. Poor connectivity between Cincinnati/Hamilton County employment centers and heavy truck traffic result in the inefficient movement of goods and services.

The current phase of the Eastern Corridor is being administered by ODOT in cooperation with the Federal Highway Administration, the Federal Transit Administration and a local partnership, including Hamilton County, Clermont County, the city of Cincinnati, the Southwest Ohio Regional Transit Authority/Metro and OKI. Although four projects are underway as part of the program's overall goal of improving transportation in and around the Eastern Corridor, funding has not been secured to make all needed improvements.

**Figure 7-1: Projected Truck Volume Growth**



Source: Eastern Corridor Study

<sup>37</sup> Source: OKI 2030 Regional Transportation Plan-Amendment 6, February 2011

The Eastern Corridor includes rail transit recommendations using the current NS Oasis freight rail line. The proposed rail corridor is approximately 17 miles in length, and extends between the Riverfront Transit Center in downtown Cincinnati and I-275 in the city of Milford. It is imperative that use of this rail line for freight be continued should passenger service be introduced. The opportunity for economic development of rail adjacent properties for light/heavy industrial use is an important asset to both Hamilton and Clermont counties.

Because of its impact on truck traffic mobility of all classifications, implementation of the Eastern Corridor is supported and further recommended by this plan.

**Cost:** \$815,800,000 (Year of Expenditure cost estimates are gathered from the OKI 2030 Regional Transportation Plan for Red Bank Road, \$346,300,000; SR 32 Relocation, \$292,000,000; 50 percent of Eastern Corridor Oasis Rail Transit \$177,500,000 to take into account improvements to track not passenger stations)

**Timing:** Mid Term

**Implementing Agencies:** City of Cincinnati, Clermont County, Hamilton County, ODOT

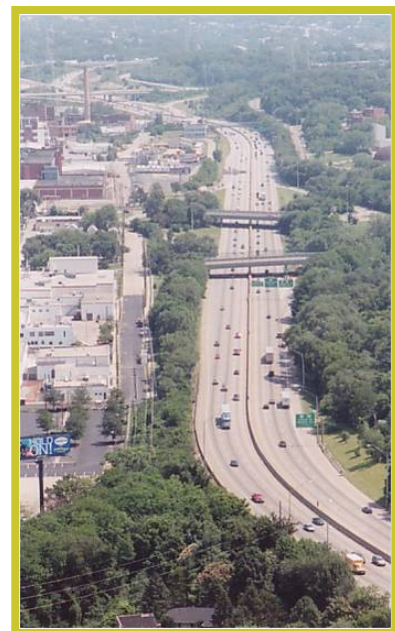
### *I-75 Mill Creek Expressway and Thru the Valley*

The I-75 corridor is undergoing significant reconstruction, which will improve conditions in this major north-south truck corridor. While a large portion of I-75 between the Brent Spence Bridge and I-275 experiences congestion, the entire corridor is expected to have Level of Service “F” by 2030 if improvements are not made. Some of the I-75 improvement projects are currently underway while others are slated for funding and construction in ODOT’s Transportation Review Advisory Council process. Improvements along the I-75 corridor include adding a fourth through lane and fifth auxiliary lane, where warranted, to correct congestion and safety issues. In addition, every interchange along the corridor is slated for some type of improvement based on an existing condition such as poor turning radii (Hopple Street/Martin Luther King Drive), limited access (Shepherd Lane/Mangham Drive), or underutilization and benefit to overall corridor flow (Towne Boulevard). While the I-75 improvements are vital to freight traffic, it will be equally important for ODOT to have a coordinated plan for emergency removal of accident vehicles in order to adequately maintain traffic mobility during construction and minimize detour traffic in neighborhoods along I-75.

**Cost:** \$644,900,000

**Timing:** Immediate

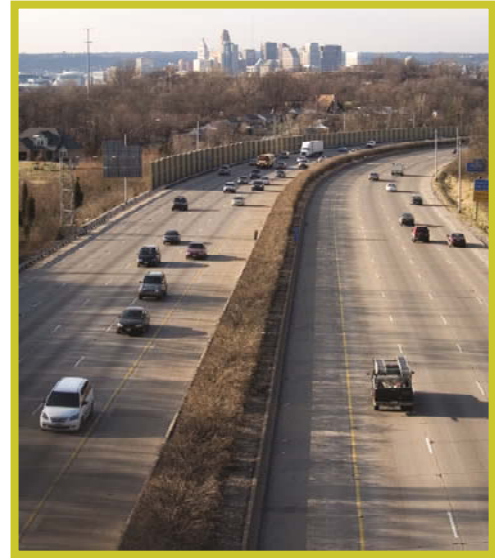
**Implementing Agency:** ODOT



**I-75 Mill Creek Expressway and Thru the Valley**

### ***I-471 Reconstruction***

The I-471 corridor forms one of northern Kentucky's major north-south transportation spines. Within its nine miles, I-471 connects or traverses with US 27 (Alexandria Pike and Monmouth Street), I-275, KY 8, and KY 9 (Licking Pike and AA Highway). I-471 accommodates travel volumes of close to 100,000 total vehicles a day, 10 percent of which are trucks.<sup>38</sup> With future improvements planned for the I-75 corridor and Brent Spence Bridge, even greater emphasis is placed on the need to maintain and improve I-471 to handle the additional volumes of diverted passenger and freight traffic. In accordance with the OKI I-471 Corridor Study (October 2008), this recommendation would include consideration of bus on shoulders/express bus service, ramp monitoring and metering, resurfacing, and potential lane additions. While the I-471 improvements are vital to freight traffic, it will be equally important for ODOT to adequately maintain traffic during construction, to ensure access and reduce detour traffic in areas served by I-471.



**I-471 Reconstruction**

**Cost:** Ramp Metering: \$1,369,000; Bus on Shoulders: \$246,000; Reconstruction: \$25,000,000; Potential Lane Additions: \$10,000,000 (if done in coordination with reconstruction)

**Timing:** Immediate

**Implementing Agency:** KYTC

### **7.5.2 Local Truck Access Projects**

Through outreach with local officials, a number of issues with truck traffic were identified that cause congestion, safety, and pavement condition issues. None of these local roads will experience the truck volume of the Brent Spence Bridge, yet existing freight issues for these communities will only be exacerbated when truck volume increases as forecasted over the next 30 years. These local roads are often referred to as the “last mile” in the freight distribution network where congestion, geometric deficiencies, overhead bridge clearances, and pavement condition can hamper efficient freight transportation. Furthermore, in older neighborhoods and the urban core of the region, narrow streets and traffic congestion can hamper local delivery trucks, which are vital to retail commerce and small businesses.

This freight plan recommends that the following highway improvements be evaluated and programmed with local public sponsors. Locations on the federal aid highway system would be eligible for federal funds through the states or through OKI. The region can accommodate these projects as part of OKI's 2030 planning process, and fund them through a combination of (1) existing allocation of federal-aid highway funds; (2) federal freight funding (being discussed as part of transportation reauthorization proposals); and (3) local matching funds. OKI encourages each

<sup>38</sup> Source: OKI 2006

implementing agency to consider Complete Streets policies as they plan, design and build roadway recommendations to provide complete, safe access to all road users. The Complete Streets approach would further address the accommodation of trucks and parcel delivery vans that serve businesses in the urban core. Project recommendations are organized alphabetically by jurisdiction.

### ***Boone County, Kentucky***

#### **Gunpowder Road Improvement**

Looking ahead at truck volumes and freight demands, a long-term project for Boone County entails an improvement of Gunpowder Road from US 42/127 to Mt. Zion Road. North of US 42/127, Gunpowder Road is KY 237. Improvements for this northern segment of KY 237 are already underway which, when combined with enhancements to Gunpowder Road, would create a direct connection to I-71/I-75. Gunpowder Road is a two-lane corridor. This recommendation calls for Gunpowder Road to be widened to a five-lane roadway.



**Gunpowder Road Improvement**

**Cost:** \$21,000,000

**Timing:** Long Term

**Implementing Agency:** KYTC

#### **I-71/I-75 Richwood and Mt. Zion Interchanges**

Richwood Road and Mt. Zion Road carry high volumes of truck traffic traveling from Boone County distribution and manufacturing centers to I-71/I-75. The KYTC Six-Year Plan includes upgrades of the Richwood Road interchange, creating a diverging diamond configuration, and the Mt. Zion Road interchange at I-71/I-75. For efficient and safe traffic flow, the Richwood Road interchange project should include a grade separation for the NS railroad crossing, which is located within 1,500 feet of the interstate. Mt. Zion Road already has a grade separation in place along this same NS rail line.



**I-71/I-75 Richwood and Mt. Zion Interchanges**

**Cost:** Richwood: \$22,750,000 and Mt. Zion: \$19,750,000

**Timing:** Mid Term

**Implementing Agency:** KYTC

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**Butler County, Ohio**Hamilton-Mason Road Mouse Hole

With a growing suburban population, Butler County has a number of east-west arterial roadways that pass beneath an elevated, north-south oriented rail line. These roadway tunnels are colloquially known as “mouse holes.” Several “mouse holes” are becoming choke points for the roadway network in terms of width, clearance and capacity issues. These issues are a recurring concern for the NS railroad bridges passing over Hamilton-Mason, Cincinnati-Dayton, Princeton, Kyles Station and West Chester roads in southeastern Butler County. In particular, Hamilton-Mason Road’s five-lane section to the west is reduced to one lane in each direction at the NS bridge overpass.

**Hamilton-Mason Road Mouse Hole**

While not a truck freight issue, per se, addressing these “mouse holes” will require the cooperation and active participation of NS railroad, as construction could disrupt their operations.

To address this immediate roadway capacity issue, the “mouse hole” at Hamilton-Mason is of the highest priority to Butler County. To efficiently streamline implementation of this improvement with minimum disruption and cost to freight operations and the public, a private-public collaborative effort will be required between Butler County and NS. As the scope of this project is developed, improvements to the railroad trackage and/or bridge structure may also be advantageous.

**Cost:** \$12,000,000**Timing:** Immediate**Implementing Agency:** Butler County

Subsequently, Butler County’s other “mouse holes” require improvements due to width and clearance issues. Again, a private-public partnership between Butler County and NS is vital to accomplishing these improvements with the investment of time and money.

Cincinnati-Dayton Road Mouse Hole**Cost:** \$13,000,000**Timing:** Mid Term**Implementing Agency:** Butler County**Cincinnati-Dayton Road Mouse Hole**

Kyles Station Road Mouse Hole**Cost:** \$14,000,000**Timing:** Long Term**Implementing Agency:** Butler County**Kyles Station Road Mouse Hole**Princeton Road Mouse Hole**Cost:** \$12,000,000**Timing:** Long Term**Implementing Agency:** Butler County**Princeton Road Mouse Hole**West Chester Road Mouse Hole**Cost:** \$16,000,000**Timing:** Long Term**Implementing Agency:** Butler County**West Chester Road Mouse Hole**I-75/Union Centre Boulevard Interchange

Rapid growth in West Chester Township continues to stress capacity of the recently constructed Union Centre Boulevard interchange at I-75. Butler County reports that the interchange is currently operating at capacity. Major retail, light industrial and school district developments to the west of this interchange have been a major contributor to traffic volumes of all types. Between 2003 and 2007, truck counts on I-75 increased 29 percent (18,920 trucks per day to 24,500 trucks per day). Property to the east of the interchange is beginning to develop with more of a focus on both heavy- and light-industrial land uses. It is a major distribution hub for the entire county.

The scope of the project is to improve the operations of the interchange without increasing the volume of traffic on I-75. The improvement will include adding lanes to both I-75 exit ramps and reconfiguration of Union Centre Boulevard.

**Cost:** \$4,000,000**Timing:** Immediate**Implementing Agencies:** Butler County and ODOT**I-75/Union Centre Boulevard Interchange**

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### South Hamilton Crossing

The South Hamilton Railroad Grade Separation Project will replace an existing at-grade railroad crossing on Central Avenue with a grade separation created by extending Grand Boulevard to the west in the city of Hamilton. This will connect SR 4 (Erie Boulevard) on the east side of the four existing railroad tracks with US 127 (Pleasant Avenue) and University Boulevard to the west. The Butler County Transportation Improvement District (TID) is leading the project and following ODOT's 10-Step Project Development Process for Minor Projects. The project has been identified as one of the top priorities of the city of Hamilton Council and Butler County Engineer's Office to enhance economic development and improve the transportation network on the south side of Hamilton and relieve congestion in the Central Business District. The CSX rail line involved in this project carries 55 trains a day, which are estimated to create blockages for 11,100 Grand Boulevard travelers daily.



**South Hamilton Crossing**

**Cost:** \$28,000,000

**Timing:** Immediate

**Implementing Agency:** Butler County TID and city of Hamilton

### *Campbell County, Kentucky*

#### US 27 Improvements

Over 500 trucks travel US 27 daily between Sunset and AA Highway. The OKI I-471 Corridor Study (October 2008) recommended the implementation of a non-traversable median with mid-block U-turns at some locations along this highway segment. This recommendation is included in this plan because of its recognized congestion management and safety benefits.

**Cost:** \$20,000,000

**Timing:** Long Term

**Implementing Agency:** KYTC



**US 27 Improvements**

**Clermont County, Ohio****SR 125/Ohio Pike Access Management**

SR 125/Ohio Pike carries a significant volume of truck traffic between I-275 and the town of Amelia, which is located less than 10 miles to the east. Congestion and traffic flow problems on SR 125 are exacerbated by the lack of any access management controls. ODOT has begun an access management effort (PID 81425) to address access management controls and improve truck traffic flow for the remaining four miles to Amelia.

**Cost:** \$10,000,000

**Timing:** Long Term

**Implementing Agency:** ODOT



**SR 125/Ohio Pike Access Management**

**US 50/Roundbottom Road Intersection**

US 50 carries the second-highest volume of truck traffic in the county, particularly between the Roundbottom Road intersection and the town of Owensville. At the intersection with Roundbottom Road, turning movements for trucks are problematic. Improvements would include a comprehensive upgrade of the intersection as well as turning radii.

**Cost:** \$200,000

**Timing:** Mid Term

**Implementing Agency:** ODOT and Clermont County



**US 50/Roundbottom Road Intersection**

**US 50/SR 132/SR 276 Intersection**

A second intersection along US 50 experiencing heavy truck volumes (averaging 1,402 trucks a day) and problems with truck turning movements is at SR 132/SR 276. To improve geometric deficiencies, some additional roadwork would be required in this project recommendation.

**Cost:** \$300,000

**Timing:** Mid Term

**Implementing Agency:** ODOT



**US 50/SR 132/SR 276 Intersection**

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### US 50/SR 222 Intersection

Another intersection along US 50 that experiences heavy truck volumes (approximately 1,643 trucks a day) and problems with truck turning movements is at SR 222.

**Cost:** \$100,000

**Timing:** Long Term

**Implementing Agency:** ODOT



US 50/SR 222 Intersection

### *Dearborn County, Indiana*

#### South SR 1 Corridor Improvement

SR 1 suffers high congestion as it meets US 50 and nears the I-275 interchange. Traffic backups occur frequently along SR 1 (as far north as the intersection at Nowlin Avenue) and impede freight and commuter traffic. There has been discussion about rebuilding this segment of SR 1 to



South SR 1 Corridor Improvement

alleviate congestion and create more efficient traffic flow through the area. INDOT has tried to address some of the issues with the intersection of US 50/SR 1 and the I-275 connector by adjusting signal timings and adding turn lanes, yet congestion issues persist.

**Cost:** \$3,000,000

**Timing:** Long Term

**Implementing Agencies:** INDOT and Dearborn County

#### SR 1 Intersection Improvements

SR 1 travels north-south across the county from St. Leon to Lawrenceburg. SR 1 carries traffic volumes as high as 14,000 vehicles per day near US 50 and I-275. This roadway is also heavily traveled by trucks. While signs discouraging truck traffic are posted, the industry continues to use the roadway as a shortcut between I-74 and I-275, as well as a non-highway alternative route into Lawrenceburg. The route is plagued with steep grades, poor sight distances, numerous access points, uneven pavement and rolling topography. Although SR 1 is far from an optimal roadway for trucks, drivers continue to ignore



SR 1 Intersection Improvements

posted signs and use the route. With continued truck usage and forecasted higher truck volumes, Dearborn County officials stress the need for greater maintenance and improvements, including adding a passing blister and turn lanes at each intersection along the corridor, including Pribble, Mt. Pleasant, York Ridge, Sawdon Ridge, and North Dearborn roads.

**Cost:** \$2,000,000 (all five intersections)

**Timing:** Mid Term

**Implementing Agencies:** INDOT and Dearborn County

### SR 1 Northbound Climbing Lane

Truck usage of SR 1 as an alternative route to I-74/I-275 has been detailed previously. Adding to the long list of SR 1 deficiencies is the fact there are no passing lanes along the entire SR 1 corridor however, automobiles often pass slower-traveling trucks (even with double-striped center lines) which creates safety concerns.

The 1-mile segment of northbound SR 1 (located 1.5 miles south of Dover) has a severely steep grade, which reduces truck speeds to well below posted limits. It is recommended that the steep grade segment on SR 1 be analyzed for truck climbing lanes and, if warranted, a climbing lane be constructed to separate trucks from other northbound, uphill through traffic.

**Cost:** \$3,000,000

**Timing:** Mid Term

**Implementing Agencies:** INDOT and Dearborn County

### US 50/State Line Road Intersection

There are no dedicated turn lanes at the US 50/State Line Road intersection. This creates two separate situations where truck congestion occurs, turning movements are hindered, and safety is jeopardized. There is a historic monument located on the northeast corner of the intersection. Dearborn and Hamilton county officials have discussed the possibility of creating a free-flowing right turn lane from westbound US 50 onto State Line Road. The design of this improvement



SR 1 Northbound Climbing Lane



US 50/State Line Road Intersection

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would create a safe median around the monument in its current location while permitting traffic the appropriate turning radii necessary for safe transition onto US 50 without impeding US 50 westbound through traffic.

The other turning concern at the intersection is for movements from southbound State Line Road onto US 50. One lane handles all traffic at this intersection where State Line Road terminates at US 50. A two-lane approach is needed that would separate westbound and eastbound traffic turning movements. An eastbound left turn lane would decrease traffic congestion by removing eastbound left turning traffic from the inside through lane.

**Cost:** \$500,000

**Timing:** Immediate

**Implementing Agencies:** Dearborn and Hamilton counties

### *Hamilton County, Ohio*

#### Ancor Connector

The existing NS Pea Vine railroad underpass on Mt. Carmel Road near Roundbottom Road is too small for many trucks to pass. As a result, truck traffic chooses an alternative route along Broadwell Road. Trucks are also prohibited on the portion of Mt. Carmel Road



**Ancor Connector**

south of Broadwell Road, further exacerbating the situation. One possible solution for this area is construction of the proposed Hamilton County Ancor Connector project that would create a two-lane facility with appropriate turn lanes between Broadwell Road and SR 32 east of Roundbottom Road. Officials noted that the Ancor area is one of the few remaining locations available for development within the entire county. The Ancor Connector could provide an alternate route for truck traffic, while opening up land for development.

**Cost:** \$15,000,000

**Timing:** Mid Term

**Implementing Agency:** Hamilton County

### East Sharon Road Study

There are significant trucking issues on East Sharon Road around the truck entrance/exit to the Sharon NS Railroad Yard and Medallion Drive. Daily truck traffic in and out of the yard is significant. If double-stack trains begin traveling the NS line from Columbus into Cincinnati, container off-loading and truck activity could increase proportionately. Turning movements in and out of the yard are impacted by poor sight lines because of topography and the proximity of a rail overpass. Highlighting the hazardous condition, there was a fatal crash at this intersection in 2010 involving freight and passenger vehicles. The access to/from the yard is within 300 feet of Medallion Drive, which adds to the unsafe conditions. Also, Sharon Yard is not paved, so the cities of Sharonville and Evendale have reported concerns regarding truck trackage of dirt and mud onto East Sharon Road.



**East Sharon Road Study**

East Sharon Road is the location of manufacturing facilities such as Ford's Sharonville Transmission Plant, as well as a number of distribution and light manufacturing facilities. The road carries daily traffic volumes of 19,397 and is the major corridor linking Sharonville with I-75.

NS sets their capital improvements plan annually. Based on current freight volumes, the Sharon Yard is not scheduled for any improvements. The recommendation is to analyze this segment of East Sharon Road, including both the intersection of Medallion and entrance/exit to Sharon Yard and determine a comprehensive strategy for improving multi-modal transportation movements that benefit both the Sharonville and Evendale communities, as well as facilitate potential growth in NS freight activities.

**Cost:** \$250,000

**Timing:** Immediate

**Implementing Agencies:** Cities of Sharonville and Evendale

### Governor's Way/Union Cemetery Road Intersection

While turning radius issues were noted as a general concern throughout Hamilton County, the intersection at Governor's Way and Union Cemetery Road was identified as a major concern with current volumes of truck traffic.

**Cost:** \$1,000,000

**Timing:** Mid Term

**Implementing Agency:** Hamilton County



**Governor's Way/Union Cemetery Road Intersection**

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### New Ohio River Crossing Future Study

There has been discussion regarding the construction of a new Ohio River bridge that would connect western Hamilton County to Boone County between the Brent Spence and Carroll C. Cropper bridges. This has been a controversial topic with much community opposition in the past amongst long-established residential communities in western Hamilton County. All agree that the political will for such a project is not present. However, the project is not without transportation and economic development interest to the region. Two OKI studies have recommended this new crossing or study of this new crossing. One study estimated that the forecasted volume of a western county river crossing could be as many as 50,000 vehicles per day, much of it from the heavily congested Brent Spence Bridge. A new crossing could also provide intermodal access from the regional freeway system to barge terminals in Boone County. Because of extremely steep topography and narrow two-lane facilities, roadway access to barge facilities in Boone County along KY 8 is lacking. A study for a potential new Ohio River crossing should consider freight access to US 50 in Hamilton County and KY 8 in Boone County that serves barge terminals.

It is emphasized that prior to any future discussion or study of a new Ohio River crossing, the OKI region's foremost priority is the full funding and completed construction of all Brent Spence Bridge improvements. Once completed, the improved Brent Spence Bridge may show that consideration of a new Ohio River Crossing is unwarranted.

**Cost:** \$350,000

**Timing:** Long Term

**Implementing Agencies:** Hamilton and Boone Counties

### *Kenton County, Kentucky*

#### Grand Avenue Improvement, Taylor Mill

In Kenton County, there is redevelopment potential on the western banks of the Licking River, near the I-275 crossing. Much of this stretch of riverfront was formerly occupied by CSX and its Decoursey Yards rail operations. The former L&N classification yard at Decoursey closed when CSX initiated operations at Queensgate in 1981. Over the last several years, the use of this property for yard service has diminished. As a result, CSX has removed large amounts of yard rail track from this area, leaving prime undeveloped parcels with good rail and water access available for brownfield redevelopment. Efficient truck access between I-275 and the Decoursey Yards area along KY 177/Decoursey Pike is lacking. A recommended solution involves the improvement of Grand Avenue between KY



**Grand Avenue Improvement, Taylor Mill**

177/Decoursey Pike and KY 16/Taylor Mill Road, so that it can handle future truck traffic. Improvement of mobility from the river to I-275 would also assist in reducing the amount of freight traffic traveling through Ritte's Corner and other local roadways to the north.

**Cost:** \$4,500,000

**Timing:** Immediate

**Implementing Agencies:** Kenton County and city of Taylor Mill

### KY 16/KY 17 Intersection

Tight turning radius issues exist at the KY 16/Decoursey Avenue and KY 17/Madison Pike intersection. The recommendation would entail redesign for safe and efficient turning movements for all vehicle types.

**Cost:** \$20,000,000

**Timing:** Long Term

**Implementing Agencies:** City of Covington, Kenton County and KYTC



**KY 16/KY 17 Intersection**

### KY 536 Road Improvements

Recent improvements to major north-south routes in Kenton County have highlighted the need for better east-west access. Both KY 16 and KY 17 provide excellent access to I-275. KY 536 currently connects to I-71/I-75 in neighboring Boone County (Mt. Zion Road). However, sections of KY 536 (Bristow Road/Shaw Road/Harris Pike) are unimproved, narrow two-lane roads with numerous intersections that are deficient for truck traffic. Recent residential and commercial developments in the city of Independence have increased congestion. Improvement of this route would provide much needed congestion relief and open more of the southern portion of Kenton County for development. KY 536 improvements could also provide a more direct connection across the tri-county area to the I-71/I-75 corridor and reduce more circuitous routing for traffic heading south on I-71/I-75. There are alternative solutions that would create a Mt. Zion Road to the AA Tri-County Connector. In the absence of I-71 and I-471 connections, Kenton and Campbell counties access is greatly hindered. The design phase for KY 536's reconstruction and widening to five lanes from the Boone County Line to KY 17 has been completed. This project's right-of-way and utility phases are listed in the OKI Transportation Improvement Program (TIP) and slated for completion in fiscal year 2012. Design, right-of-way, and utilities are estimated at \$31,410,000. The project is listed in the OKI 2030 Regional Transportation Plan (June 2008) however, the construction phase is currently unscheduled and unfunded.



**KY 536 Road Improvements**

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**Cost:** \$18,300,000 (in OKI 2030 Regional Transportation Plan)

**Timing:** Mid Term

**Implementing Agency:** Kenton County

### Mary Grubbs Highway Extension

County officials are also interested in the potential to extend the Mary Grubbs Highway that currently dead ends into an industrial park on the Boone County border. This highway provides a direct interchange connection with I-71/I-75. Eastward extension would provide access needed to support additional industrial tenants in this rapidly developing area. A structure was recently built in Walton, Kentucky (Boone County) to move trucks into/out of the industrial park by traveling under the railroad tracks. The route for this proposed roadway extension in Kenton County would be from the new Mary Grubbs Highway railroad bridge, proceeding eastward along a new alignment to KY 17 near the KY 17/KY 16 intersection.



Mary Grubbs Highway Extension

**Cost:** \$90,000,000

**Timing:** Long Term

**Implementing Agency:** Kenton County or KYTC

### Ritte's Corner

As identified in the Northern Kentucky Area Planning Commission's *Latonia Small Areas Study Existing Conditions Report* (February 2011), freight traffic from the Mobil Terminal and Lally Pipe and Tube on Locust Pike in Taylor Mill regularly travel through Latonia to reach I-275. All freight traffic is routed through the five-leg intersection of KY 16/Winston, Decoursey and Southern avenues which is locally referred to as "Ritte's Corner." Kenton County and city of Covington officials also shared concern over this intersection and its inability to handle truck traffic. Heavy truck traffic moving through this intersection from KY 16/Winston Avenue to the south on Decoursey Avenue must negotiate a sharp right turn of approximately 45 degrees.



Ritte's Corner

As a result, trucks frequently over track onto the adjacent sidewalk and evidence of contact with existing utility poles have been identified. This over tracking creates maintenance issues with sidewalks and utility poles and poses a serious safety hazard to pedestrians. These turning movements also require large trucks to travel slowly, which often results

in intermittent periods of delay at and around this intersection. To avoid this maneuver, some northbound trucks have been observed turning right onto Southern Avenue rather than using Decoursey Avenue. This route creates additional problems in the area such as large trucks operating in areas not intended or constructed for such heavy usage. The residential areas on Southern Avenue and within the vicinity of Holy Cross High School are generally the most affected by this alternate route.

The Latonia Small Areas Study made a short-term (0 – 5 years) recommendation that the intersection at Ritte’s Corner be improved to allow for smoother freight operations. Improvements to the intersection should include minor changes at the southeast corner of Winston Avenue and Decoursey Pike, including the relocation of the utility pole on the corner. Redesign of the corner may also be warranted however, any redesign of the pedestrian area must not negatively affect the Korean War Memorial Park. Changes to the intersection may provide an easier turning path for truck traffic, relieving some of the associated congestion.

**Cost:** \$75,000

**Timing:** Immediate

**Implementing Agencies:** Cities of Covington and Latonia

#### Truck Access South of I-275

In southern Kenton County, below I-275, roadway access is a problem between the river, KY 177, and KY 16. Locust Pike is a north/south route that runs parallel and on the west side of the Licking River. This roadway cannot handle large volumes of heavy trucks because of its narrowness and geometric limitations. Improving connections to KY 177 and KY 16 via Porter and Wolf roads could be another solution to these I-275 truck access problems.

**Cost:** \$11,500,000

**Timing:** Mid Term

**Implementing Agency:** Kenton County



**Truck Access South of I-275**

**Warren County, Ohio**

Columbia Road Improvement and Kings Island Drive Extension

To support future development of the Columbus Business Place, improvements on Columbia Road and a northern extension of Kings Island Drive are needed. Improvements to Columbia Road include the introduction of a continuous center lane to enable left turning movements from both directions. Kings Island Drive will be extended from its current north terminus to Columbia Road. The Kings Island Drive extension will incorporate improvements to Mason-Morrow-Millgrove Road, including intersection reconstruction, additional turn lanes, and correction of geometric deficiencies.



**Columbia Road Improvement and Kings Island Drive Extension**

**Cost:** \$11,000,000

**Timing:** Immediate

**Implementing Agency:** Warren County Engineers Office

Gateway Boulevard Extension

To further support economic development, Warren County has plans to extend Gateway Boulevard south from Mason Road to connect with Butler Warren and the Liberty Way Interchange with I-75.



**Gateway Boulevard Extension**

**Cost:** \$20,000,000

**Timing:** Long Term

**Implementing Agency:** Warren County Engineers Office

King Avenue/Grandin Road Horizontal Curve Correction

A major truck access issue in Warren County is an impassable bridge and a hairpin turn on King Avenue/Grandin Road in the Kings Mills area. The Sumco Phoenix Corporation is located on Grandin Road and receives several trucks per day. The county has tried to communicate drivers' use of alternate routes to the trucking industry, including the SR 48/I-71 Interchange and Fujitec Drive, with limited success.



**King Avenue/Grandin Road Horizontal Curve Correction**

**Cost:** \$500,000

**Timing:** Immediate

**Implementing Agency:** Warren County Engineers Office

### New Connector Road

Because of growing freight volumes, a new connector road is needed between the Cincinnati Premium Outlets development and Butler-Warren Road to provide an alternative route for truck deliveries to light industrial customers and outlet mall customers. This recommendation should take into consideration the Cox Road Extension completed under the direction of the Butler County Transportation Improvement District.

**Cost:** \$5,000,000

**Timing:** Immediate

**Implementing Agency:** Warren County Engineers Office

### SR 123 Improvements

High volumes of truck traffic were a problem on SR 123 when the Texas Eastern Gas company, located on SR 123 south of SR 122, was in operation. Texas Eastern was a major jet fuel supplier to the former DHL facility in Wilmington. Truck volumes are not as high since the DHL facility relocated to CVG however, Texas Eastern has the capacity to provide major fuel supplies should another customer purchase their services and reopen the site. Improvements to SR 123 could help attract new business relocation and use of this corridor.

**Cost:** \$18,000,000

**Timing:** Long Term

**Implementing Agency:** Warren County Engineers Office

### Turtlecreek Road Bridge and Intersection

County officials noted truck-turning radius issues on the Turtlecreek Road Bridge, just east of US 42, and at the Lebanon Commerce Park near the Turtlecreek and Kingsview roads intersection. This recommendation would enable safe and efficient travel through the intersection for all vehicles.

**Cost:** \$1,600,000

**Timing:** Immediate



**New Connector Road**



**SR 123 Improvements**



**Turtlecreek Road Bridge and Intersection**

**Implementing Agency:** Warren County Engineers Office

### Union Road Improvements

Warren County is planning to improve Union Road between SR 63 and SR 123 interchanges with I-75 to address heavy local truck volumes, noting that in the last 10 years, SR 63 truck traffic has increased dramatically.

**Cost:** \$23,000,000

**Timing:** Long Term

**Implementing Agency:** Warren County Engineers Office



Union Road Improvements

## 7.5.3 Truck Freight Policy Recommendations

### *National Highway System (NHS) Intermodal Connectors and Facilities*

Intermodal connectors are primary links for the movement of freight and passengers from intermodal facilities to the interstate and principal arterials on the NHS. Because of the number of physical and operational concerns associated with intermodal connectors across the nation, they may be addressed in future federal transportation legislation reauthorization. This is not only a freight issue. Following the events of September 11, 2001, connectors are seen as a national security issue as well, providing intermodal choice to shippers and the defense industry when, and if, an event of national or local emergency occurs.

In advance of potential federal funding, OKI took the opportunity of the Regional Freight Plan to better understand the importance and needs on the NHS connectors. Staff also examined where additional connectors or facilities should be authorized to effectively bring attention to these short, but important, NHS segments for potential future improvements and support.

### Sharon Intermodal Yard and East Sharon Road/I-75 Intermodal Connector

NS's Sharon Intermodal Yard is not designated as an intermodal facility. With an estimated 50,000 20-foot Equivalent Units (TEUs)—a measure of intermodal container volume per year, or 100 trucks per day—in each direction on Sharon Road (the principal connecting route), the yard meets primary intermodal facility criteria for truck/rail. Trucks are defined as large single-unit trucks or combination vehicles carrying freight. With local and regional support, this plan recommends that



Sharon Intermodal Yard and East Sharon Road/I-75 Intermodal Connector

Sharon Yard be designated as an intermodal facility in Ohio and Sharon Road, from its access drive just east of Medallion Drive to I-75, as an intermodal connector.

**Cost:** Administrative

**Timing:** Immediate

**Implementing Agency:** OKI

#### Dixie Highway/I-71/I-75 Intermodal Connector

In eastern Boone County, between I-71/I-75 and the Kenton County border, there is an extremely dense pocket of freight-related industry and distribution centers. More than 18 manufacturers located on or adjacent to Dixie Highway (US 25) between KY 18 and KY 338, use rail and truck for their operations. An examination of truck count data collected along this intermodal freight corridor shows extremely high daily truck volumes. Because of the high volumes of rail for raw materials and semi-finished goods and trucks for outbound shipments, this plan recommends, with local and regional support, that Dixie Highway between KY 18 and KY 338 and the east/west roadways linking Dixie Highway to I-71/I-75 (KY 18, US 42/125, KY 536/Mt. Zion Road, and KY 338/Richwood Road) be designated collectively as an intermodal connector (Table 7-5).



**Dixie Highway/I-71/I-75 Intermodal Connector**

**Cost:** Administrative

**Timing:** Immediate

**Implementing Agency:** OKI

**Table 7-5: Dixie Highway/I-71/I-75 Intermodal Connector Links**

Facility Name	Segment Description	Actual Truck Count	Count Year
Ramp from I-71 SB	To US 127	887	2006
Ramp from I-71 NB	To US 127	539	2006
Ramp to I-71 SB	From Burlington Pike And US 127	1,304	2006
Industrial Rd (SR-1829)	West of Dixie Hwy (US 25)	614	2006
Dixie Hwy (US-25)	South of Industrial Rd (SR 1829)	858	2006
Ramp from I-71/I-75 SB	To Mt Zion Rd	642	2005
Ramp to I-71/I-75 SB	From Mt Zion Rd	542	2005
Ramp from I-71/I-75 NB	To Mt Zion Rd	480	2005
Ramp to I-71/I-75 NB	From Mt Zion Rd	979	2005
Mt Zion Rd (SR-536)	West of Dixie Hwy (US 25)	1,885	2006
Dixie Hwy (SR-25)	South of Mt Zion Rd	1,037	2006
Ramp from Richwood Rd	To I-71 NB	681	2006
Ramp to I-75-71 SB	From Richwood Rd	862	2005
Richwood Rd (SR-338)	East of I-71-75	1,048	2005
Richwood Rd (SR-338)	West Of Dixie Hwy	1,921	2006

Count Source: OKI

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AK Steel/I-75 Intermodal Connector

The Middletown Works is AK Steel's manufacturing site located in Butler County. AK Steel is the third largest steel company in the U.S. Its carbon-steel melting, casting, hot and cold rolling and finishing operations cover more than 2,791 acres. A set of roadways link this huge industrial facility with I-75. The main roadway for transport of raw materials by truck from I-75 to the Middletown Works facility is Lefferson and Oxford State roads. The main roadway for transport of finished products by truck from the Middletown Works facility to I-75 is SR 122 (Roosevelt Boulevard). In the first quarter 2005, AK Steel reported shipments of 1,520,500 tons from the Middletown facility. A large amount of raw materials arrive by CSX or NS rail on one of the numerous spurs. AK Steel determines which mode to use based on price and timing. AK Steel has been relying more heavily in the past year on using trucks for delivery to customers because of shortened lead time. Businesses are keeping inventories low, which requires more frequent deliveries within shorter time intervals. Trucks shipping from AK Steel contribute to high daily truck counts. Because of its dependence on rail and trucks and the high volume of trucks shipping from the facility, this plan recommends, with local and regional support, that SR 122, Oxford State Road, and Lefferson Road be designated collectively as an intermodal connector for AK Steel to and from I-75.

**Cost:** Administrative**Timing:** Immediate**Implementing Agency:** OKI**Table 7-6: AK Steel/I-75 Intermodal Connector Links**

Facility Name	Segment Description	Actual Truck Count	Count Year
Roosevelt Blvd (SR-122)	East of Jackson Ln*	878	2004
Roosevelt Blvd (SR-122)	East of Elliot Dr	1,049	2009
Oxford State Rd	East of Main St	1,123	2009

Count Source: OKI. (\*ODOT is source)

**Regional Express Truck Lanes Feasibility Study**

Traffic forecasts for the regional highway network suggest that most roadways will experience severe peak-hour congestion by 2030. This includes all sections of I-71, I-74, I-75 and most of I-275. These forecasts include the improvements underway on I-75 (Mill Creek Expressway and Thru the Valley projects) and the most recent investment study for I-71 from downtown Cincinnati to Kings Mill, which, by OKI policy, sets capacity at three lanes in each direction.

The OKI region, like most other metropolitan areas of similar size in the country, is following a pattern of highway-capacity building based on the Interstate Highway Program of the mid-1950s. Under this pattern, which has been extended to the present day, state DOTs and MPOs make incremental capacity



Regional Express Truck Lanes Feasibility Study

improvements with the limited funding they have available.

Larger urban areas, with more acute highway and freight congestion, are considering new programs to accommodate current and future truck growth—including dedicated truck lanes, which can be self-financed by tolls. Looking forward, such truck toll policies may become the norm for regional freight mobility, but are currently only considered or implemented in the most-congested parts of the country (e.g., Los Angeles, Atlanta, New Jersey). In light of freight growth and regional traffic congestion, there are two provocative questions to consider for area transportation policy makers:

- If the OKI region implemented truck toll lanes, what competitive advantage would the region have in 30 years, compared to regions that did not implement truck lanes?
- Conversely, what logistical disadvantages would the OKI region have if competitive regions such as Columbus and Indianapolis developed truck toll lanes and the OKI region did not?

The OKI region could take the offensive and move forward in terms of freight mobility by evaluating and implementing toll truck lanes on a regional basis or on specific freeway corridors. It is recommended that OKI sponsor a study of truck lane potential and feasibility for the region. Truck lanes could offer a competitive advantage for the region and an opportunity for the OKI region to advance ahead of the status quo in most Midwest urban areas.

**Cost:** \$ 250,000

**Timing:** Immediate

**Implementing Agencies:** OKI, ODOT, KYTC and INDOT

### *Regional Truck Size and Weight Regulation*

Truck weight regulation is a top policy concern of the transportation community. Heavy trucks cause severe pavement damage, especially on the local road system which often does not have sufficient pavement thickness to handle heavy loads. The adequacy of local bridges to handle heavy trucks is also a critical safety concern.

Even in the face of these legitimate policy concerns, there is industry and political pressure to increase truck weight limits. The reason for increasing weight limits lies with productivity: with driver shortages, increased fuel costs, and more strict insurance and safety regulations, trucking productivity is in decline. A prime way to increase truck productivity is through higher loads per truck which brings into play all of the public policy concerns indicated above.



**Regional Truck Size and Weight Regulation**

While interstate size and weight regulations are determined at the federal level, there is latitude at the state level for issuing oversize/overweight truck permits. For example, Ohio has two permits that directly affect overweight trucking in the OKI region. Ohio allows three steel coils of up to 120,000 pounds—a permit used extensively, for example, by AK Steel in Middletown. Ohio also has a special permit for agricultural exports. The CSX Queensgate and NS Gest Street Yards are designated as

agricultural export terminals by Ohio, meaning they can receive 94,000 pound loads on five axles for intermodal containers.

Through these special permit mechanisms, truck weights are being legally increased on a commodity-by-commodity basis. Not surprisingly, there are some roads and bridges that are deteriorating under heavy trucks, such as the route from the Gest Street Yard in which trucks use Spring Grove Avenue, Winton Road, North Bend Road, and Hamilton Avenue to reach the I-275 corridor and points north.

A state, region or local jurisdiction can rely on federal officials to manage truck size and weight regulations or work constructively with the trucking industry and state regulators to shape the parameters of overweight permits and regulations. It is recommended that regional leaders take the latter approach and actively engage with the trucking industry and state regulators to address, at a minimum, the following critical policy issues:

- Identify appropriate truck routes for overweight trucks, based on sufficiency in terms of geometric design, pavement thickness, and bridge condition.
- Modify existing ODOT permit language, as appropriate, to define the routes that are most adequate for heavy trucks.
- In establishing permit routes with state government, extract state maintenance or improvement funding for roads if the routes are currently inadequate from a structural standpoint.
- Map and communicate eligible heavy truck routes and terminals to freight stakeholders (e.g., specific terminals and commodities, like agricultural exports from NS Gest Street and CSX Queensgate Yards, or general permit conditions like Ohio three steel coil permit).
- Include law enforcement officials, to ensure strict enforcement of routes and permits. If appropriate, consider a necessary fee structure to finance heavy truck enforcement.
- Identify other businesses in the tri-state area that would benefit from heavy truck routes and develop a regional permit as appropriate.

An overarching objective of this recommendation is to provide local governments with a voice in determining oversize/overweight permit routes, so that the state regulatory agencies will select routes with the least public impacts in terms of maintenance cost, safety, and congestion.

To carry out this recommendation, regional leaders should meet with trucking industry representatives and state transportation officials from Ohio, Kentucky and Indiana to investigate the parameters of existing overweight permits, modify the route specifications if necessary, and explore options for regional permitting of heavy trucks where there is evidence of economic benefit.

**Cost:** Administrative only

**Timing:** Immediate

**Implementing Agencies:** ODOT, KYTC and INDOT, convened by a regional agency

### Alternative Fuel Stations for Truck Fleets

The trucking industry is understandably concerned about environmental regulations and increasing diesel fuel costs. In congested areas such as southern California, trucking companies are turning to alternative fuels—especially Compressed Natural Gas (CNG) and Liquefied Natural Gas (LNG)—to meet California’s strict environmental emissions standards. Vehicles using CNG or LNG emit 25 percent less greenhouse gases than those using petroleum, according to the U.S. Department of Energy.



Alternative Fuel Stations for Truck Fleets

There are several necessary economic precursors to CNG/LNG freight fuels. First, the price of CNG/LNG must be competitive to diesel fuel. At the time of this report, with diesel prices rising, LNG holds a 20-cent per mile advantage over diesel. The other economic precursors are the availability of trucks on a mass-market basis and the infrastructure for CNG/LNG fueling.

Manufacturers are responding to demand and developing more CNG/LNG options, but fueling infrastructure takes longer to develop. There are a large number of stations in southern California and the Northeast, and growing CNG/LNG availability in the Midwest. However, the OKI region has no CNG/LNG fuel stations. The closest stations are in Indianapolis and Columbus.

The city of Hamilton is in the process of constructing a CNG fueling station in late 2012 or 2013, which could fuel public and private trucks. To help the trucking industry adapt to alternative fuels while addressing air quality concerns and enhancing the attractiveness of the region to new business development, OKI could sponsor commercial CNG/LNG fueling stations in partnership with the private sector.

OKI funding support could be a catalyst for encouraging the development of alternative fuel fleets. Any sponsorship would be conditional on markets showing increased demand for CNG/LNG vehicles and an appropriate funding partnership and risk sharing with the private sector. Area governments could provide additional market demand by converting their fleets (e.g., garbage trucks or service trucks) to run on alternative fuel. OKI and potential project sponsors should coordinate on the location of one or more fueling stations in the region to ensure that the stations serve regional truck fleets efficiently and on the publicity of the new fuel source to broadcast its availability.

**Cost:** Varies by the size and capacity of the station; planning estimate: \$5,000,000

**Timing:** Mid Term

**Implementing Agency:** Local public agency, possibly in partnership with OKI and private sponsor

## 7.6 Rail Freight Recommendations

After review of the railroad operation in the OKI region, the following comments and recommendations are made to prepare the OKI region for the 38 percent increase in rail traffic forecasted over the next 30 years.

### 7.6.1 Regional Public-Private Freight Rail Partnership

The OKI region suffers from major rail bottlenecks from both Class 1 operators. The bottlenecks create conflict between NS and CSX, which share trackage rights and must carefully coordinate daily operations to minimize delays. Congested railroad operations in the region also raise significant public policy concerns. Blocked grade crossings are a frequently cited issue in every OKI county and one that could be exacerbated given the forecast growth in rail traffic over the next 30 years. Also, freight railroads sometimes have poor coordination with public officials on critical matters such as closing grade crossings for maintenance activities.



Regional Public-Private Freight Rail Partnership

The status quo of communication between railroads and local public officials is not acceptable. The two sectors must engage to resolve public-private conflicts, develop projects that will improve freight transportation in the region and take action to see immediate results. Every railroad recommendation that follows in this section will depend on communication, cooperation and partnership between railroads and the public sector.

An example of such a partnership comes from Chicago, where the Chicago Region Environmental and Transportation Efficiency (CREATE) program was formed to address and resolve regional railroad issues. CREATE partners include six freight railroads, Amtrak, commuter rail agencies and local and state elected officials. CREATE has developed a comprehensive program of freight infrastructure projects that will improve safety, reduce congestion for rail passenger and freight trains and provide environmental benefits. CREATE has also been successful at applying for federal grants and leveraging private dollars to fund infrastructure improvements that have public and private benefits.

A similar partnership program for the OKI region could focus on the following OKI regional issues:

- Apply for federal funding to meet railroad freight infrastructure deficiencies, such as the Reading Road Grade Separation project, and others mentioned in this plan. There are some existing funding sources, such as the federal Congestion Mitigation Air Quality Improvement Program, which can fund freight infrastructure. On the horizon, Congress may enact new streams of funding for freight projects. To compete against other metropolitan areas across the country, the OKI region must be coordinated and prepared *before* such programs or funding becomes available. In Chicago, for example, CREATE was able to secure significant federal grants from the federal stimulus program.

- Train blockage of at-grade crossings is a concern throughout the region. This freight plan identifies critical highway-rail at-grade crossings for safety review and grade separation. However, numerous other highway-rail crossings exist throughout the region, including Augsberger Road in Butler County, Reading Road in Sharonville and multiple crossings in the communities of Lockland, Reading, and Wyoming. Many of these blockages are not just for passing trains but for trains idling for switching activities or awaiting entry into yards or terminals. Solutions to these frustrating problems are sometimes inexpensive changes to railroad operating practices. OKI will assist this Public-Private Freight Rail Partnership to inventory these locations and develop an action plan in cooperation with the communities and railroads as part of an on-going activity.
- Improve communication between railroad companies and local public officials, especially for railroad construction projects that close public roadways and/or require local permitting approval prior to commencement. Also, better communication would support more collaborative partnerships when local roadway improvements may have rail impacts such as Butler County's mouse hole recommendations.
- Address maintenance of railroad overpasses and at-grade crossings. Crumbling structures provide safety hazard to motorists, and rough crossings can damage automobiles.
- Address shipper concerns (e.g., access and switching fees) to promote economic competitiveness for the region and address opportunities to reduce truck traffic by providing direct rail service to industry.
- Improve railroad at-grade signage which are posted with 1-800 call numbers and location identification information to report grade crossing safety equipment malfunctions or other emergencies.
- Introduce railroad mile markers to enable accurate location identification for communication between railroads and local communities for trackage not associated with at-grades or overpasses.
- Work collaboratively to create public-private solutions should passenger rail gain local, regional and state support.
- Continue long-range planning coordination, so that OKI and other regional stakeholders can respond to industry trends and business needs, as well as leverage the region's transportation assets for economic development (i.e., container growth at Sharon Yard, which would affect the number of trucks entering/exiting the yard and using local roadways, as well as may affect length of at-grade crossing blockages).

The structure of such an organization would be left to regional stakeholders to decide. While not ruling out a new entity, existing organizations such as OKI or the Port of Greater Cincinnati Development Authority could be tasked by local leaders to accept this role.

**Cost:** Administrative only, up to \$100,000 annually

**Timing:** Immediate

**Implementing Agency:** Regional interests should determine the form and content of this partnership

## 7.6.2 At-Grade Crossings: Safety Study

At-grade railroad or highway crossings are a large safety concern of local governments in the OKI region. As train volumes increase, the potential for collisions at these crossings grows as well, so the rail freight growth forecasted for the region adds to the concern of local agencies. This recommendation is for OKI to coordinate efforts with rail grade crossing safety programs administered by Ohio, Kentucky and Indiana, and where appropriate, to assist in funding grade crossing safety improvements. There are different types of warning devices and safety improvements available for at-grade crossings:

- Crossbucks/warning signs
- Flashing lights
- Flashing lights and gates
- Traffic channelization (to prevent motor vehicles from driving around gates) or four-quadrant gates
- Closing at-grade crossings (often in concert with other improvements above)
- Rail-highway grade separation projects



At Grade Rail Safety

In developing this recommendation, OKI referenced the FRA's Web Accident Prediction System (WBAPS), an analytical tool that can—combined with other site-specific information such as sight-distance, highway congestion, bus or hazardous material traffic, and local topography—assist in determining where scarce highway-rail grade crossing resources can best be directed. By applying the WBAPS, the five at-grade crossings listed in Table 7-7 represent the top locations as ranked by predicted accidents per year as of December 31, 2009 for the OKI region.

**Table 7-7: Top Five Regional At-Grade Crossings**

Crossing Number	Railroad	County	City	Road	Total Trains per Day	Average Annual Daily Traffic (count for highway vehicles)
525235M	IORY	Warren	Mason	West Main St.	2	23,425
152383Y	CSX	Butler	Fairfield	Seward Rd.	64	7,551
524882U	NS	Hamilton	Sharonville	East Sharon Rd.	28	20,490
152394L	CSX	Butler	Hamilton	Central Ave.	56	11,215
345725G	CSX	Boone	Walton	Main St./US 25	31	6,510

Source: Federal Railroad Administration's Web Accident Prediction System (WBAPS), June 2011.

State transportation agencies in Ohio, Kentucky and Indiana administer the following federal funding programs for grade crossing safety:

- **Ohio:** The Public Utilities Commission of Ohio, in partnership with the Ohio Rail Development Commission, selects Ohio highway-railroad crossings for federally funded upgrades based on a

priority list that ranks the crossings in order of risk of accident. Criteria used in ranking each crossing relative to the risk of accident include number of tracks, average daily traffic count, crash history, number of highway lanes, maximum speed of trains and number of trains per day. While the average cost of upgrading a crossing is \$160,000, the local community incurs no costs under this program. Waneta Street in Middletown is already part of the ongoing NS “CJ” Corridor Projects that are currently planned for an improvement under agreement between the Ohio Rail Development Commission, city of Middletown and NS. Waneta Street has been the site of two fatal grade crossing crashes (2006 and 2008).

- **Kentucky:** The Highway-Rail Grade Crossings Program, codified as Title 23 USC Section 130, provides federal money to states to fund projects intended to reduce accidents at railroad crossings. According to Section 130, the money can be used to install or upgrade signs, pavement markings, signals, gates, crossing surfaces, and lighting. The FHWA administers the Highway-Rail Grade Crossings Program. This program is a continuation from ISTEA. The national program is funded from a portion of the Surface Transportation Program (STP). Annually, Kentucky receives \$1.268 million to be administered through the KYTC Division of Right of Way and Utilities for highway-rail grade crossing improvements.
- **Indiana:** Formerly a set-aside of the STP program, the Highway-Rail Grade Crossing Program (Title 23 USC Section 130) provides funding for projects that reduce the number of fatalities and injuries at public highway-rail grade crossings by eliminating hazards or installing/upgrading protective devices at crossings. Legislation requires that states set aside at least 50 percent of the funding allocation for the installation of protective devices at highway-rail crossings. If all needs for installation of protective devices have been met, the funds available can be used for other at-grade crossing projects eligible under this program. Eligible projects include grade separation or protection of at-grade crossings, such as through installing active or passive warning devices, reconstructing existing railroad grade crossing structures, and relocating highways or rail lines to eliminate grade crossings.

The intent of this recommendation is for OKI to coordinate with existing rail grade crossing safety programs so that the region can maximize the efficacy of public funds.

**Cost:** \$25,000, includes review of five at-grade crossings listed in Table 7-8

**Timing:** Immediate

**Implementing Agencies:** Cities of Mason, Fairfield, Middletown, Sharonville and Hamilton

### 7.6.3 Rail Quiet Zones

Trains can create a number of public nuisance issues, especially when they blow their horns approaching grade crossings. In a number of communities, such as Wyoming, the amount of train traffic and the noise from their horns is especially bothersome. It is anticipated that the problem will worsen with forecasted increases in rail freight traffic throughout the region.

One way to address train noise is through the establishment of “quiet zones” where trains are prohibited from sounding their horns approaching grade crossings. To address public safety at grade crossings, quiet zones include additional safety features, such as four-quadrant gates that completely block crossings (thus preventing vehicular traffic from driving around typical gate arrangements).

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Quiet zones might also close some at-grade crossings that have lower vehicle volume. Establishing quiet zones requires cooperation between railroads and communities to plan and implement quiet zones, including necessary capital improvements.

The FRA has a Quiet Zone Creation process that should be used to designate new locations. To support immediate action within the OKI region, it is recommended that the Public/Private Rail Freight Partnership take proactive measures to identify potential quiet zone corridors and support dialogue between local communities and railroads. Furthermore, to assist in the creation of a quiet zone should physical safety improvements to at-grade crossings be determined, steps should be taken to coordinate public and private funding sources.

**Cost:** \$50,000 to \$100,000 per crossing

**Timing:** Immediate

**Implementing Agencies:** Local governments, private railroads, OKI and the Ohio Rail Development Commission

#### 7.6.4 Hopple Street Passing Track and Crossovers



Hopple Street Passing Track and Crossovers

Railroad choke points in the Millcreek Valley north of Queengate Yard are a major source of train delays in the OKI region. Although there are three main line tracks in the Mill Creek Valley, trains often must idle, sometimes occupying all three main lines while waiting to enter and exit the CSX

Queensgate and NS Gest Street Yards. This is the single biggest source of railroad delays in the region.

The NS and CSX mainlines narrow from three main tracks to two tracks for approximately 1,000 feet, in order to pass through the Hopple Street Viaduct piers. This effectively creates a choke point. The major problem is the inability of NS southbound traffic to move from the third track (NS Main Line) north of Hopple Street into the Gest Street Yard while NS trains depart northbound from the Gest Street Yard at the same time. This choke point creates delays for both NS and CSX through trains.

Reconstructing a portion of the Hopple Street Viaduct in this area to provide additional horizontal clearance, accommodating construction of approximately 1,000 feet of additional track, would minimize through train delay and improve railroad operations at the NS Gest Street Yard.

In addition to the additional track at Hopple Street, constructing crossovers or connecting rail track south of the Hopple Street Viaduct, would allow through trains to access the two main tracks for northbound and southbound movements.

Resolving this bottleneck condition involves the following project elements:

- Reconstruction of a portion of the Hopple Street Viaduct to provide additional horizontal clearance
- Dispatching changes and software upgrades as needed for revised track configuration
- Approximately 1,000 feet of new track
- Three to four new crossovers

**Cost:** \$8,000,000 to \$10,000,000

**Timing:** Immediate

**Implementing Agencies:** CSX, NS and a public partner to be determined

### 7.6.5 Mill Creek Additional Track

Next to Hopple Street, the other major source of train delay for the region is in the Mill Creek area, especially from the RH Tower (located at the north end of the CSX Queensgate Terminal) to the NA Junction. The convergence of CSX traffic from the north, traffic in and out of Queensgate Terminal and the NS through trains makes this one of the busiest, if not the busiest, stretch of railroad in the OKI region. This choke point adds to the delays of NS and CSX through movements, and makes the coordination of train movements to and from the Gest Street Yard extremely challenging.

The solution to this choke point is to increase rail capacity by adding approximately 8,600 feet of fourth track in this corridor from the RH Tower to the NA Junction. While not a fourth mainline, this length of track will provide capacity for a 156-car train, which will allow better dispatching into the Gest Street Yard by spreading out train arrivals, instead of idling numerous trains while other traffic clears.

Prior recommendation for a fourth main line track north of RH Tower—exceeding 14,000 feet in length and costing in excess of \$50 million—had been discussed as part of planning for future

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passenger rail access to Cincinnati Union Terminal. This recommendation suggests a much more cost-effective solution. Implementation will require a public-private partnership between NS, CSX and local public agencies.

**Cost:** \$15,000,000 to \$20,000,000

**Timing:** Mid Term

**Implementing Agencies:** CSX, NS and a public partner to be determined



Mill Creek Additional Track

### 7.6.6 Capacity Improvements to CSX’s Cincinnati Terminal Subdivision north of NA Junction

The existing CSX Cincinnati Terminal Subdivision includes a grade-separated, single-tracked segment of track approximately 1,500 feet in length from just south of Mitchell Avenue to just east of Spring Grove Avenue in Winton Place. If an additional track is constructed from NA Junction southward, this segment of track (also known as the “head on connection”) will likely be a capacity constraint to northbound CSX and NS directional running trains to Hamilton and points north. It is recommended that approximately 1,500 feet of additional track be constructed. This will require new railroad bridge structures over Spring Grove and Mitchell Avenues as well as right-of-way acquisition.

**Cost:** \$7,500,000 to \$10,000,000

**Timing:** Mid Term

**Implementing Agencies:** city of Cincinnati

### 7.6.7 Rail Corridor Banking

It is expensive to develop and expand transportation infrastructure, especially in urban areas, because of the cost of right-of-way acquisition. Yet there are a number of rail corridors that are underused and therefore potential candidates for abandonment. With rail freight demand forecasted to increase 38 percent over the next 30 years, these underused rail lines could have benefits for future freight handling, if they do not fall into abandonment.

Cincinnati articulates a policy of rail corridor preservation, wherever possible, for future rail freight or passenger service. Examples of current railbanked lines include the Wasson Line (NS Hyde Park Branch Line) and CSX Cincinnati industrial track north of Gest Street Yard.

A policy of rail corridor banking seems prudent from a regional standpoint, as there are a few rail lines where service has been reduced to three or fewer trains a day. For example, the Pea Vine line in Clermont County used to connect Cincinnati to Portsmouth, Ohio and NS's Heartland Corridor. This line was recently "embargoed" by NS near the village of Peebles, meaning that NS has rendered the track unusable by piling gravel and other material across the tracks, thereby blocking passage. Although NS has customers using the line, Clermont County officials are concerned that service on the remaining Pea Vine may be terminated.

Each of the railroads have shared their interest and support in keeping current rail freight operations active, if not expanding service, should new customer demand arise or current needs increase. However, where rail service is being diminished, a rail corridor banking program would seek to preserve it through the following:

- Preserve for freight service with the current rail operator
- Identify a purchaser, such as a short line, to assume freight operation of the line
- "Bank" the rail line for future transportation use, including public transit, pedestrian and bicycle

Rail lines, which are potentially threatened by abandonment, include those with less than three trains per day and unused industrial leads. On a continuing basis, the implementing agency should monitor these railroad lines and meet with railroad strategic planning staff to assess their viability and identify any plans for abandonment. The implementing agency may also want to establish a formal notification process with the local jurisdictions beyond the Public Utilities Commission of Ohio or the Ohio Rail Development Commission regarding any potential abandonments prior to filing with the Surface Transportation Board, so that discussions and any potential action plan for rail corridor banking can be implemented. When rail lines move into an abandonment phase, the implementing agency will meet with local stakeholders to create a preservation plan for the line.

**Cost:** Administrative only

**Timing:** Immediate

**Implementing Agency:** Regional Public/Private Freight Rail Partnership



### 7.6.8 Railroad Economic Development Properties

Within the OKI region, there are a number of properties that are available for economic development that have railroad access:

- Clermont County SR 32 (across from the Ford facility), 650 acres. Clermont County officials have a great interest in developing rail-related business to this and other sites along the NS Pea Vine line in the county.
- The CSX line west of the Mill Creek is also known as the CSX Cincinnati industrial track. The only current active customer is S&B Industrial Minerals Inc. north of NS's Gest Street Yard. The line is currently railbanked north of S&B. The city of Cincinnati intends to discuss potential for future rail service on this line with CSX to foster industrial development on the adjacent property.
- In Kenton County, there is redevelopment potential on the Licking River's western banks, near the I-275 crossing. Much of this stretch of riverfront was formerly occupied by CSX and its Decoursey Yards rail operations. The former L&N classification yard at Decoursey closed when CSX initiated operations at Queensgate in 1981. Over the last several years, CSX has decreased service and removed large amounts of yard trackage from this area, leaving prime undeveloped parcels with good rail and water access.

Developing businesses on these properties can have several benefits for the region:

- Economic activity (employment, sales, tax revenue, etc.) from the property itself
- Increasing the rail traffic density on some of these lines will increase their viability and make abandonment less likely
- Environmental benefits of rail transportation as compared to trucking

This recommendation involves inventorying property that has rail access and other development attributes such as zoning, water, sewer and power service, so that regional economic development agencies can market their availability. The inventory itself could be developed and maintained by coordinating with railroads and commercial real estate companies. Also, the inventory of economic development properties should also be made available to, and coordinated with, the state economic development programs of Ohio, Kentucky, and Indiana. Kentucky, for example, has a comprehensive GIS inventory of its freight railroad network, which is used in concert with the marketing of economic development properties. The Ohio Department of Development has programs to assist in identification, marketing and development of properties with excellent rail access. INDOT's Rail Office administers the Industrial Rail Service Fund—for Class II and III freight railroads to upgrade physical plants and assist in railroad track improvements related to new business development—with \$1.5 to \$1.7 million in grants per year.

This recommendation could be combined with the Regional Public/Private Freight Rail Partnership such that rail economic development initiatives could be added to the mission of a Regional Freight Rail Partnership.

**Cost:** Administrative only

**Timing:** Immediate

**Implementing Agency:** Regional Public/Private Freight Rail Partnership

### 7.6.9 Reading Road Grade Separation, Sharonville

The NS railroad line through Sharonville presents a critical freight issue for the region, as well as a critical safety issue for the city. Sharon Yard offers relief for rail congestion at Gest Street Yard. Sharon Yard handles one or two intermodal single-stacked trains per day. With the Heartland Corridor connection from Rickenbacker Intermodal Facility in Columbus to Sharonville, these one or two trains could double their intermodal cargo loads with the use of double-stacking. Timing for this increase in freight depends on market and regional freight demand. As the national economy recovers and local business interest in intermodal increases, demand for double-stack will grow as customers see it as a more efficient freight transportation mode to trucking.



Reading Road Grade Separation, Sharonville

A critical issue in Sharonville involves NS trains blocking the Reading Road at-grade crossing. The yard tracks do not offer enough length for NS to assemble trains for outbound movement, so they must be “doubled” which means that half the train parks on the mainline, blocking Reading Road, while the other half of the train is switched and assembled. The delays are not trivial, as train crews must perform inspections and brake testing of the assembled train before departure.

Blocking Reading Road creates critical safety and congestion problems for Sharonville. From a safety standpoint, the blocked crossing delays the efficiency and speed of emergency response vehicles, which must otherwise route around the grade crossing. The congestion gridlocks Sharonville and hampers truck movements to local businesses and Sharon Yard itself.

In 1999, ODOT initiated a grade-separation program and the Sharonville Reading Road crossing was selected for preliminary engineering development. The state hired a consultant to perform alternatives and cost estimates but later withdrew its commitment to the project when it deemed the capital cost too excessive.

The Reading Road grade separation is critical to the safety and efficient traffic flow of the region. As such, it is a priority for immediate attention in the OKI Regional Freight Plan. It is recommended that regional leaders review the Reading Road grade crossing hazards, and preliminary work that was performed for the grade separation, in order to prioritize the project for federal funding. In turn, Sharonville should approach ODOT to lay out this regional transportation concern and prepare a new application for state safety and major new funding to build the project.

**Cost:** \$25,000,000

**Timing:** Immediate

**Implementing Agency:** Local sponsor city of Sharonville; federal funding through OKI and ODOT and private partnership with NS

### 7.6.10 Western Hills Viaduct

In the central part of Cincinnati, the Western Hills Viaduct, spanning the CSX Queensgate Yard, is under study for rehabilitation or replacement. If a replacement of the Viaduct is warranted, there is an opportunity to design a structure with fewer piers, presenting the opportunity to cost-effectively increase rail capacity and improve access at the Queensgate Yard.



Western Hills Viaduct

The preliminary evaluation and design of the Western Hills Viaduct is underway and is being managed by the city of Cincinnati. Capital costs of rehabilitation versus replacement will be a key decision in the scope and design of the project. However, project development should include consultation with NS and CSX to determine and assess any benefits a reconstruction might have to freight rail operations and the costs/benefits of various alternatives. Such rail freight benefits may help support private funding participation in the project.

**Cost:** Undetermined at this time

**Timing:** Long Term

**Implementing Agency:** city of Cincinnati

## 7.7 River/Inland Waterway Freight Recommendations

In the OKI region, Ohio River barge terminals have the largest amount of capacity to expand freight transportation. Barge transportation is low cost and environmentally superior to other modes of transportation (in terms of pollutants per ton of cargo moved). With barge transportation, the region has a clear competitive advantage over regions that lack such access. The existing Port of Cincinnati, as designated by the US Army Corps of Engineers, extends 30 miles along both sides of the Ohio River. However, there is no promotion of the region's barge terminals and no active political, physical, or financial support for terminal expansion and broader intermodal access. To capitalize on the potential for barge transportation in the region, the OKI Regional Freight Plan makes the following recommendations.

### 7.7.1 Activate the "Port" in the Port of Greater Cincinnati Development Authority

Port authorities can exercise significant powers to develop transportation, such as planning and promotional activities, and the authority to tax and issue debt to finance capital improvements. The OKI region has two port authorities active and with jurisdiction along the Ohio and Licking Rivers.

### ***Port of Greater Cincinnati Development Authority***

To date, the Port of Greater Cincinnati Development Authority has been successful in providing public finance for construction and brownfield redevelopment projects throughout Hamilton County, but has not been given the charge and related funding to provide leadership or coordination of port or river facility development. Talks are currently underway with the city of Cincinnati and Hamilton County



**Activate the “Port” in the Port of Greater Cincinnati Development Authority**

regarding the utilization of the port authority. The intention is to hire a new executive director of the port authority and possibly identify ongoing funding appropriations for development activity.

### ***Northern Kentucky Port Authority***

The Northern Kentucky Port Authority (NKPA) was formed in 1968 to facilitate riverport projects along the Ohio and Licking rivers. All three northern Kentucky counties jointly contributed to its formation. NKPA’s enabling statute permits it to operate in the economic environs of the Ohio and Licking rivers in Boone, Campbell and Kenton counties. The NKPA Board of Directors oversees activities that include industrial park development and management of NKPA’s assets. NKPA’s assets primarily consist of real estate in the Wilder area along or near the Licking River. Through an informal understanding and agreement, NKPA is administered by the staff of the Northern Kentucky Tri-ED. Tri-ED reports that northern Kentucky is home to two major barge companies and links to 140 other barge lines. The three-county area has nine public river terminals.

### ***Clermont and Dearborn Counties Ohio River Freight***

No port authorities currently exist in Clermont and Dearborn Counties, the remaining two counties in the OKI region with land along the Ohio River. In lieu of a port authority, the Clermont County Office of Economic Development, Clermont Chamber of Commerce, and Clermont County Transportation Improvement District are the economic development and transportation-related agencies serving the county that can address river freight interests in their jurisdiction and collaborate at the regional level. In the same regards, the Dearborn County Chamber of Commerce, which has voiced their interest in supporting river freight economic development, has barge members such as Consolidated Grain & Barge Co.

The following recommendations address the deficiencies of current port or river facility development and identify the above organizations as the implementing agencies of each initiative. The Port of Greater Cincinnati Development Authority is identified to serve as the lead implementing agency because of its port authority status and jurisdiction, which encompasses the majority of current barge terminal operations in the OKI region. The cost estimate is intended to cover only administrative costs for the Port of Greater Cincinnati Development Authority to assume this role. Land acquisition, remediation or construction costs are not included in the estimate.

**Cost:** \$300,000 annually for administrative costs to undertake each of the following policy/advocacy recommendations

**Timing:** Immediate

**Implementing Agency:** Port of Greater Cincinnati Development Authority as directed by its board and funding agencies (Hamilton County and the city of Cincinnati)

### *Port Marketing*

Many barge terminal operators in the region endorse the establishment of a public or private non-profit entity which would take on the role of promoting economic development for the region's river freight assets. The suggested activities align with the mission of the Port of Greater Cincinnati Development Authority. Specific recommendations and activities include the following:

- Create a vision and plan for the region's barge/river terminals which would:
  - Identify market sectors and customers—domestic and international—that can take advantage of the region's location, commodities and other freight assets;
  - Identify areas for expansion of commodity handling businesses, as warranted by cargo demand
- Interface with state and regional economic development agencies, to expand the promotion of barge terminals as part of the region's transportation assets
- Represent the river businesses at trade and industry conferences and events
- Coordinate efforts with port authorities in Clermont County, Dearborn County and Northern Kentucky

### *Port Access*

Intermodal access is a very important consideration for barge terminals and many terminals in the region have been designated by the USDOT as "National Highway System Intermodal Connectors." Adequate highway and rail access ensures that barge terminals can efficiently serve important regional markets, such as the agribusiness and steel industries.

Problems with barge terminal access can be either physical or institutional. Physical access problems involve the road or rail infrastructure, where available, that connects with barge terminals.

Institutional issues with barge terminal access include policies or business practices that prevent the transfer of cargo between modes. Two examples in the OKI region include:

- Competing railroad access, such as where one railroad physically prohibits another from connecting to a terminal.
- Railroad switching fees (a charge between railroads to interchange rail cars) can make connection by two or more railroads economically unfeasible.

### ***Lock and Dam Funding Advocacy***

The average tow barge can carry the equivalent of 870 tractor-trailer loads. Of the 257 locks still in use on the nation's inland waterways, 30 were built in the 1800s and another 92 are more than 60 years old. The average age of all federally owned or operated locks is nearly 60 years, which is well past their planned design life of 50 years. The cost to replace the present system of locks is estimated at more than \$125 billion.



**Lock and Dam Funding Advocacy**

As with many parts of the nation's infrastructure, the inland waterway system of locks and dams is not receiving adequate funding for maintenance and modernization. By 2015, more than half of the current navigation structures will be past their structural design life. Replacements for a number of locks are under construction. Some of the new designs being implemented will reduce the number of locks required and therefore, reduce time lost because of stoppages.

The OKI region is especially dependent on such modernization as the Mississippi/Ohio River system, north of St. Louis, has a number of lock and dam structures that determine the speed and reliability of barge transportation.

The OKI region should recognize the importance of modernizing the locks and dams on the Ohio River system and join other inland waterway policy groups in advocating for the adequate funding of this infrastructure.

### ***Barge Terminal Site Development Planning***

The OKI region's barge terminals should be actively promoted in economic development efforts. In turn, there are a number of issues with regard to developing the economic potential of the region's existing barge terminals given the scarcity of waterfront resources including:

- Marketing available, adjacent land for existing barge terminal expansion, such as sites on the Ohio River and Licking River waterfronts
- Funding redevelopment of currently idle, riverfront brownfield properties for potential reuse as river terminals
- Identifying sites that are appropriate and supported publicly for river terminal use
- Encouraging river terminals and railroad operators to collaborate and combine resources to create larger tracts of potential multimodal zones along the river

Implementing this recommendation of Barge Terminal Site Development Planning would involve some basic planning steps, such as building upon current data inventories held by local jurisdictions that illustrate properties with barge access and other development



**Barge Terminal Site Development Planning**

attributes like water, sewer and utilities; identifying development requirements; and identifying potential public funding sources such as for brownfield remediation. The compatibility of barge terminals with adjacent land uses should also be considered, so that planning measures can be taken that will avoid the creation of any additional nuisance burdens such as noise, light, dust pollution, roadway debris, and the safety of truck access/egress from the site. The overall goal would be to improve the region's terminal competitiveness and operating efficiency.

## 7.8 Air Freight Recommendations

In the wake of Delta Airline's downsizing of its hub operations, increasing flight activity at CVG is a vital economic development priority for the region and of the utmost importance. Since its peak year in 2005, CVG daily departures have decreased from 673 to 200 in 2010, and annual passengers from 22 million to eight million. However, air freight is a positive growth opportunity for CVG. With the return of DHL's hub operation to CVG in 2009, total freight at CVG increased 190% (137,837 tons in 2009 to 400,278 tons in 2010). Additionally, DHL is currently expanding its warehouse/cargo handling facility at the airport. In another positive action, CVG management is updating their airport master plan (due summer 2012) which will provide a 20-year recommended program of projects to meet airport demand under different market scenarios.



Cincinnati/Northern Kentucky International Airport

### 7.8.1 Cincinnati/Northern Kentucky International Airport Air Cargo Park

Expanding CVG's air cargo business could provide an increase in traffic and an economic development boost for the region. One way to expand this business is through an air cargo park concept, which would increase CVG service offerings beyond cargo transfer operations to an integrated, value-added logistics and manufacturing center.

#### *Elements of Air Cargo Park*

The concept of an air cargo park is to provide logistics service offerings, which are far superior to a warehouse or distribution center where air freight is offloaded, sorted, and stored for distribution by truck or air.

An air cargo park is a state-of-the-art transportation hub that combines all transportation modes, distribution centers, logistics service providers and advanced manufacturing facilities, which process near-finished goods for just-in-time delivery. The air cargo park becomes an economic development magnet, where advanced logistics services provides a competitive advantage for area business, including access to better and more frequent transportation service, as well as access to all modes of transportation.

An air cargo park would include:

- Ability to handle all-cargo aircraft in operation today
- Connection to all modes of transportation including air, rail, truck and barge
- Full cargo handling capabilities
- Direct aircraft ramp access to cargo handling facilities
- Facilities for freight handling and manufacturing activities (on site and in close proximity)
- Facilities with flexible space for multiple tenants
- Real estate services, to build and manage facilities for tenants
- Third party logistics, forwarder and broker services
- On-site customs and homeland security clearance
- Foreign trade zone status

### ***Examples of Similar Facilities***

The air cargo park envisioned for CVG would have few peers in the Midwest. The Rickenbacker Inland Port in Columbus, Ohio aspires to a similar economic development strategy and has had success as a logistics center. A CVG air cargo park would have advantages over the Rickenbacker Inland Port, as the Cincinnati region has a larger industrial base than Columbus, and thus more potential for value-added manufacturing. In addition, the Cincinnati region has access to barge transportation services, providing the full spectrum of intermodal transportation, short of direct ocean access.

Other air cargo park concepts in operation or under development include the Alliance Global Logistics Park (Texas) with 17,000 acres for logistics development; Huntsville International Airport (Alabama) with a 4,000-acre industrial park and rail intermodal terminal on-site; and the Port of San Antonio (Texas) with 1,900 acres of property on or adjacent to the airport (the former Kelly Air Force Base).

### ***Potential Infrastructure Requirements***

As CVG develops its master plan and considers the air cargo park development, intermodal connections will be critical to attracting potential tenants. OKI will coordinate with CVG, Boone County and other local officials to identify the infrastructure needed to support an air cargo park. Examples of critical infrastructure improvements include:

- A connector road from the expanded DHL facility and CVG property to the future South Airfield Road, which would help accommodate additional DHL truck traffic, as well as provide more convenient freight access to I-75, while opening additional land for commercial, industrial, and other airport-related development.
- Proposals to study a possible new river crossing connecting western Hamilton County to the CVG/Mineola Pike area between the Brent Spence and Carroll C. Cropper bridges.
- Freight railroad connection.
- Barge/river terminal access.

Defining and advancing the vision for a CVG air cargo park will require master planning by CVG and the coordination of area stakeholders.

The capital cost of this recommendation will depend on freight carrier and shipper requirements.

In terms of infrastructure, for comparative purposes, the NS intermodal facility at Rickenbacker Airport in Columbus cost approximately \$60 million. Similarly, roadway improvements might be necessary, but are determined based on the logistics requirements of shippers using the facility.

There will be significant private-sector capital costs in terms of real estate and new facilities for warehouses and distribution centers. Using the Rickenbacker Airport as an example, there is more than 6.8 million square feet of new construction in 13 industrial parks around the area. Through industrial revenue bonds and county, state, and federal funding, more than \$72 million was spent on the airport by 2000, even before the NS intermodal facility was built.

As another example of air cargo park capital costs, in Kinston, North Carolina, state and federal governments have spent \$42 million on the Global TransPark cargo airport.

Based on the investments of similar air cargo parks, this freight plan estimates an initial public investment of \$50 million over five years to provide the necessary public infrastructure—rail and road—to support an airport logistics hub.

**Cost:** \$50,000,000

**Timing:** Immediate

**Implementing Agencies:** CVG and Boone County, and other regional stakeholders