



# DEDICATED TRUCK LANES

## FEASIBILITY STUDY

### EXECUTIVE SUMMARY

AUTUMN, 2011

#### STUDY PURPOSE

The I-70 Dedicated Truck Lanes (DTLs) Feasibility Study was conducted as part of the United States Department of Transportation's *Corridors of the Future* program. Through that program, the Federal Highway Administration provided matching funding for a coalition of four states (Indiana, Missouri, Ohio and Illinois) to conduct a two-phase feasibility study to determine the need, cost, risk, financing options and practicality to develop DTLs on the I-70 Corridor as a unified facility.

Phase 1 demonstrated that there is a business case to advance the DTL concept. The Phase 2 study refined, enhanced, validated and expanded on the business case findings.



I-70 DTL Study Corridor

The I-70 Dedicated Truck Lanes Feasibility Study indicates that:

1. *There is a business case supporting the construction of DTLs; and*
2. *DTLs could improve safety, reduce congestion and benefit the regional economy more than either keeping the corridor as-is, or by adding general purpose lanes.*

#### WHY IS THE I-70 DTL FEASIBILITY STUDY CORRIDOR SIGNIFICANT?

- I-70 a key component of the freight supply chain connecting Missouri, Illinois, Indiana and Ohio to each other, as well as national and global markets.
- Thirty percent of the population of the four I-70 Coalition states live in counties adjacent to I-70.
- In major urban areas, I-70 carries as many as 200,000 vehicles a day; about 10 percent of those are trucks. In rural areas, I-70 carries an average of 40,000 vehicles per day, and truck traffic makes up as much as 50 percent that traffic. Overall, trucks make up approximately 30 percent of the volume on the I-70 Study Corridor.
- By year 2030, the tons of freight moving through the I-70 Corridor will increase by more than 60 percent and the percent of goods moving by truck will increase from 74 to 80 percent.
- Market conditions poised to impact truck traffic on I-70 include:
  - (1) Increased movement of goods via the Mississippi River Valley triggered by the 2014 expansion of the Panama Canal; and,



Rendering of a rural section of DTLs

PREPARED FOR:

ILLINOIS

DEPARTMENT OF TRANSPORTATION

INDIANA

DEPARTMENT OF TRANSPORTATION

MISSOURI

DEPARTMENT OF TRANSPORTATION

OHIO

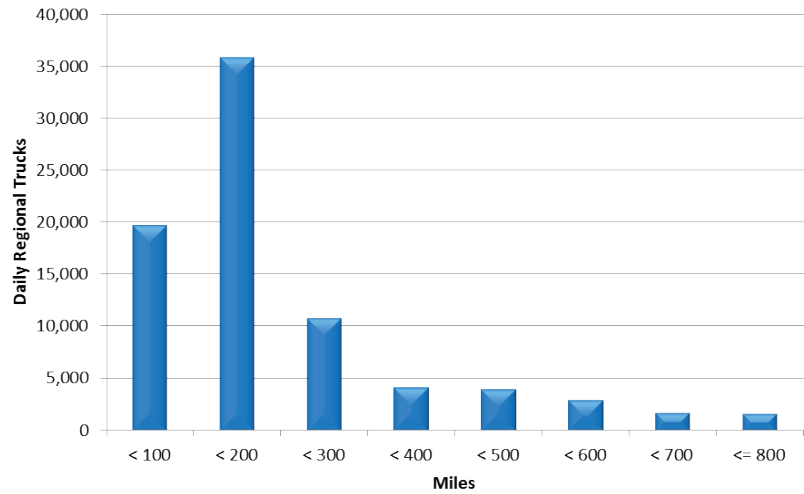
DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

(2) Expanded use of Pacific Coast ports in Mexico and British Columbia, which will result in increased rail shipments to the Midwest for regional distribution by truck.

- Fifteen percent of all I-70 truck trips in the Corridor are national (1000+ miles).
- Fifty percent of all I-70 truck trips on I-70 nationally are entirely within the four Coalition member states.
- Eighty two percent of I-70 truck trips are less than 300 miles in total length.
- The majority of trips less than 300 miles in length are between Kansas City and St. Louis or Indianapolis and Columbus.

### DAILY REGIONAL I-70 TRUCK TRIPS BY DISTANCE (2030)

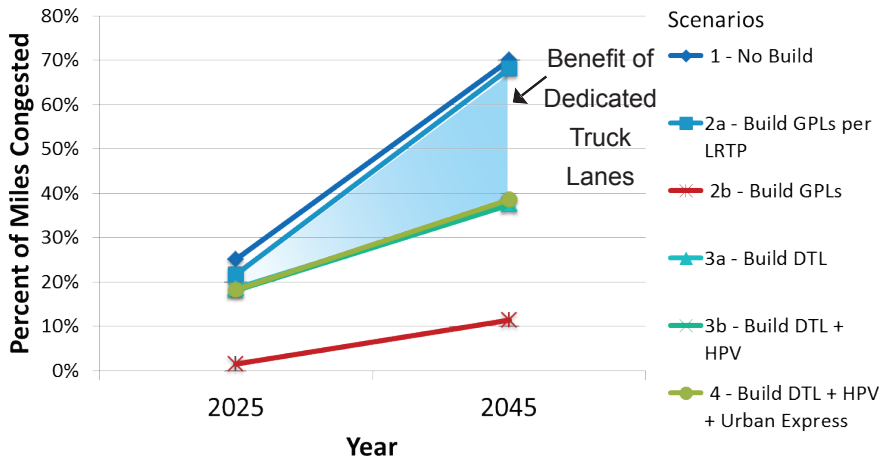


*Note: Freight Analysis Framework data does not include internal to internal local truck traffic.*

### CHALLENGES WITHIN THE I-70 CORRIDOR

- Increasing congestion, capacity constraints, concerns about safety and potential loss in economic competitiveness are challenges facing the communities along the I-70 corridor and the interstate corridors and intermodal facilities connecting to I-70.
- Between 2002 and 2008, exports from corridor states nearly doubled, increasing from \$75 billion to nearly \$140 billion.

### TOTAL I-70 PERCENT MILES CONGESTED FOR ALL LANES (PEAK HOUR LOS E/F)



- Congestion on I-70 is expected to significantly increase between 2009 and 2030. By 2030, the number of miles in the I-70 corridor experiencing congestion will nearly triple.
- By 2045, 70 percent of the I-70 corridor is expected to be congested if additional improvements are not made.
- The crash rate for trucks in these congested conditions is 3.5 times greater than that of passenger vehicles in congested conditions.

*The study compared four scenario options for DTLs relative to safety, congestion, job creation, air quality and costs to the No Build Scenario.*

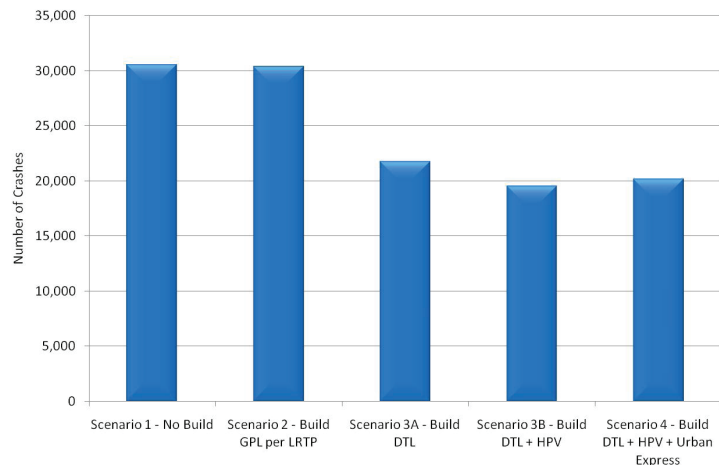
*This chart displays how the scenarios compare in terms of the percent of miles congested from the year 2025 through 2045.*

- Some sections of I-70 do not meet current American Association of State Highway and Transportation Officials (AASHTO) Design Criteria.
- There is a higher percentage of trucks than other similar sections of interstate corridors.
- Crashes along I-70 occur at a rate higher than national interstate averages.
- In 2009 the I-70 corridor experienced 10,444 crashes; 26 percent involved trucks. This ratio is expected to change significantly by 2045 under a No-Build Scenario. By then, the corridor is expected to have approximately 30,500 crashes, of which 60 percent would involve trucks. So, as truck traffic doubles, total crashes triple, passenger vehicle crashes increase 60 percent and truck crashes increase almost 600 percent.

### FEASIBILITY STUDY FINDINGS

- In truck/passenger vehicle fatal crashes, ninety-eight percent of the fatalities occur in the passenger vehicle.
- DTLs are expected to:
  - Reduce truck/car conflict crashes by more than 95 percent;
  - Reduce crashes in the general purpose lanes by 50 percent;
  - Reduce total annual crashes by one-third; and
  - Reduce fatal crashes by two-thirds.
- Dedicated Truck Lanes provide increases in corridor travel reliability. When compared to the No-Build Scenario, DTLs provide six times more benefit in travel time, operations and crash rates than adding the general purpose lanes that are currently included in each of the Coalition member state's Long Range Transportation Plans.
- In the No-Build Scenario, 70 percent of the corridor is anticipated to be congested in 2045. With DTLs, half of this expected congestion in general purpose lanes will be eliminated, while 97 percent of DTLs will be uncongested in 2045.

2045 TOTAL I-70 ANNUAL CRASHES (ALL VEHICLES)



### EXPECTED ECONOMY/JOB OUTCOMES

- The I-70 DTL Study concluded that DTLs on I-70 would generate approximately \$36 billion in economic output and 258,000 job years from tolling, construction, operation and maintenance and travel efficiencies.

### STAKEHOLDER OPINION

- All stakeholder groups are generally in favor the concept of DTLs in terms of safety, travel efficiency/productivity and congestion benefits.
- However, stakeholder acceptance remains an issue because of concerns about financing construction of DTLs (who will pay and how), access points and management of truck traffic in urban areas.

## OTHER OPTIONS FOR IMPROVEMENT

**Intelligent Transportation Systems:** ITS technologies could be implemented in the I-70 Corridor to improve operations, level of service and reliability, including:

- Traffic and emergency management;
- Commercial motor vehicle operations;
- Truck size and weight enforcement technologies;
- Tolling technologies; and
- Truck stop and transfer station technology.

### AUTOMATED WEIGHT SYSTEM FOR TRUCKS



### Uniform Permitting, Regulations and Enforcement:

Currently, each I-70 state has its own legislative processes and laws for tolling, permitting and enforcement. The I-70 DTL project presents a unique opportunity for uniformity across a large area, creating significant efficiencies for the agencies and the users.

**High Productivity Vehicles:** HPVs are truck configurations which exceed the regulated 80,000 pounds gross vehicle weight and the maximum length of 65 feet (combined tractor and trailer). The HPV analysis showed a 13 percent reduction in both fuel consumed and total emissions. The I-70 Coalition could pursue a pilot project for HPVs to evaluate operations and safety.

## COST ESTIMATE

- The cost to continue to operate I-70 as a traditional interstate from year 2020 to year 2099 is approximately \$35 billion in 2011 dollars.
- The cost during this same time period to construct DTLs is approximately \$53 billion in 2011 dollars.
- The difference in the cost to maintain I-70 as is (the No-Build Scenario) versus the cost to build DTLs from 2020 to 2099 is approximately \$18 billion (2011 dollars). One potential approach to financing DTLs is through a public-private partnership (P3).

## POTENTIAL NEXT STEPS

Steps to be considered by the I-70 Coalition for DTLs include:

- Continue the I-70 Coalition to advance safety improvements and freight mobility in the I-70 Corridor;
- Continue stakeholder outreach, including local planning agencies and MPOs;
- Work with the motor carrier industry to discuss, evaluate and potential advance a HPV pilot study;
- Consider implementing green corridor initiatives and adopting uniform regulations and ITS activities corridor-wide; and
- Meet with or release a request for information to public-private partnership concessionaires to assess their potential interest in constructing DTLs on the corridor.

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