

PA 41 Corridor Analysis Study Area



PA 41

❑ *Is a Major Investment Study (MIS) Needed?*

- ❑ Is the planning process participatory and collaborative?**
- ❑ Are there outstanding issues not addressed by the existing planning process?**
- ❑ Are there major modal alternatives?**

PA 41

Corridor Analysis

PA 41 Corridor Analysis

Participating Agencies

- ❑ **Municipalities:** Avondale Borough, Kennett Township, London Grove Township, Londonderry Township, New Garden Township
- ❑ **Other Governmental Organizations:** Chester County Planning Commission, Chester County Commissioners Office, DART, DeIDOT, Lancaster County, New Castle County, PA Turnpike, PennDOT Bureau of Design, PennDOT Central Office, PennDOT District 6-0, PennDOT Rail Freight Bureau, SEPTA
- ❑ **Regional Organizations:** Avon Grove Regional Planning Commission, Chester County TMA, DVRPC, WILMAPCO
- ❑ **Transportation Companies:** Delaware Valley Railway, Norfolk Southern Corporation, PA Motor Truck Association, Port of Wilmington
- ❑ **Advocacy Groups:** ACT-41, Dairy Farm Representative, DVRPC Regional Citizens Committee Representative, Mushroom Farm Representative, Save, SCOOT

PA 41 Corridor Analysis

PA 41 Corridor Needs and Deficiencies

[?] Safety

- Accident rates and severity generally exceed statewide average

[?] Traffic

- Deficient levels of service throughout corridor
- Thirty-seven to 52 percent traffic increase projected by 2020
- High percentage of heavy truck traffic (16% of total)

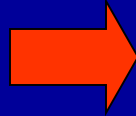
[?] Existing Roadway Infrastructure

- Geometric deficiencies at 10 intersections
- Uncontrolled driveway access
- Poor pavement conditions
- Sub-standard shoulders

PA 41 Corridor Analysis

Issues

[?] Diversion of Truck Traffic to Rail



[?] Truck Travel Patterns — Origins and Destinations — Shipping Distances

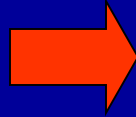
[?] Type of Commodities Carried

~~[?] Availability of Alternate Rail Routes~~

[?] PA Turnpike and Relationship of Truck Traffic to Tolls

[?] Other Alternate Routes

[?] Diversion of Truck Traffic to Other Roads

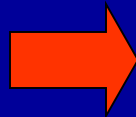


[?] Encroachment of Development and Concern that Bypass will Accelerate this Trend

[?] Growth Management

[?] Access Management

[?] Land Use Planning

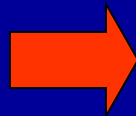


[?] Reduced Speed Limit and/or Traffic Signals to Slow Trucks

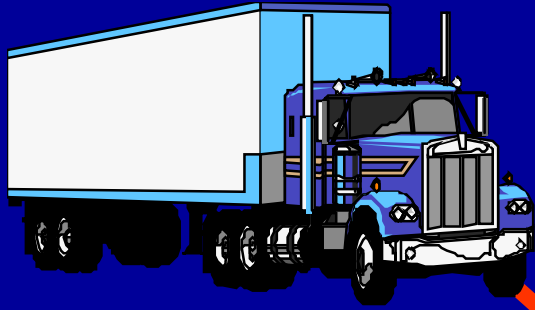
[?] Documentation of Lack of Need for Full-scale Expressway

[?] “Enhanced No-build” Alternative

[?] Other Issues

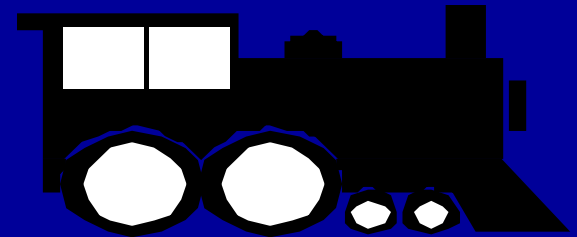


PA 41 Corridor Analysis



***... Can PA 41 Truck Traffic
be Diverted to Rail? ...***

?



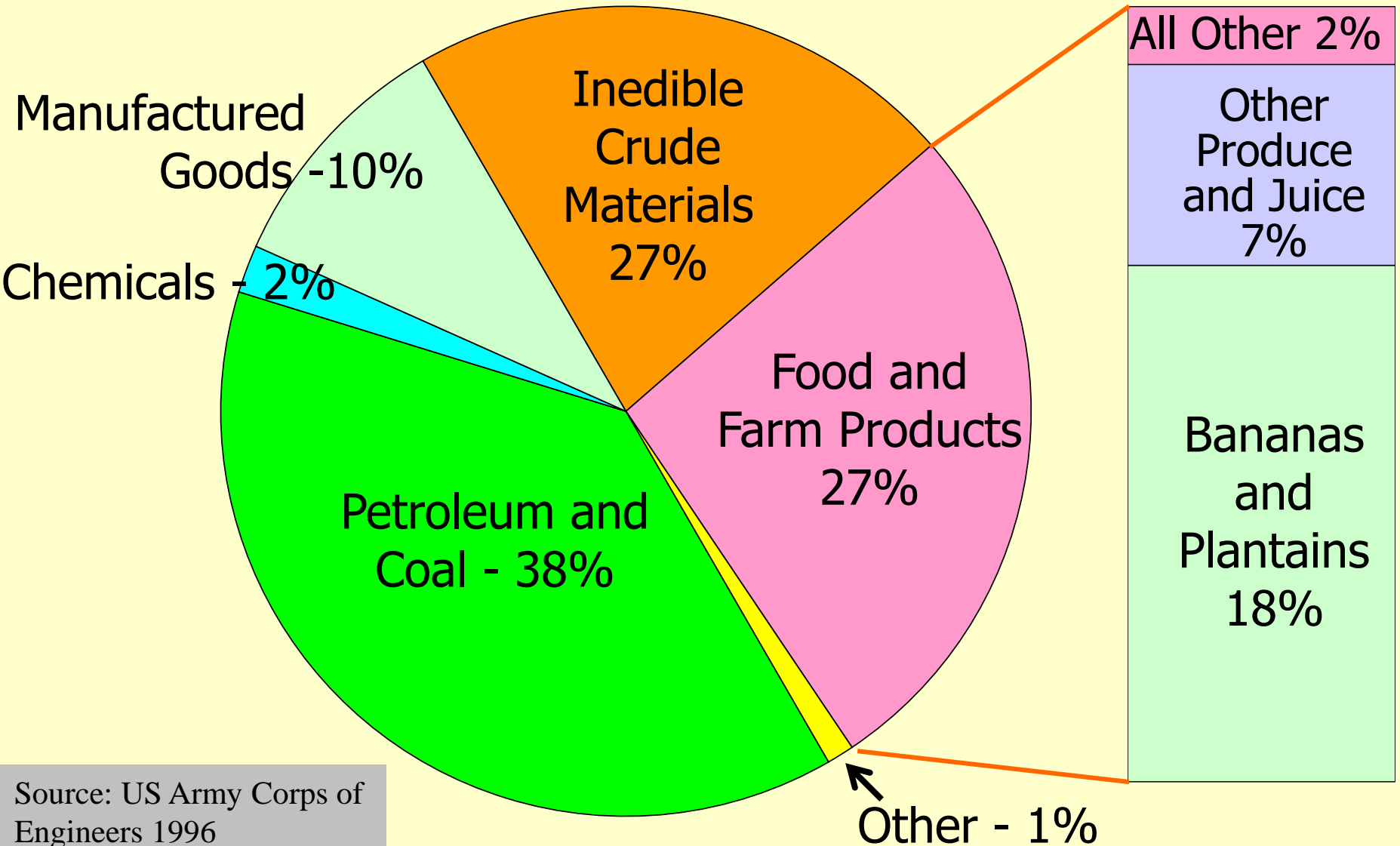
PA 41 Corridor Analysis

Diversion of Truck Traffic to Rail

❓ Characteristics of Shipment by Truck vs. Train

- **Rail usually suitable for:**
 - long-distance shipments
 - bulk/low value shipments
 - non-time sensitive shipments
 - shipments with single origin and destination
- **Nationally, average truck trip distance is approximately 400 miles; average rail shipment is about 800 miles**
- **Generally, more than 90% of shipments by truck are on time; on-time performance ranges from 60% to 85% for rail**

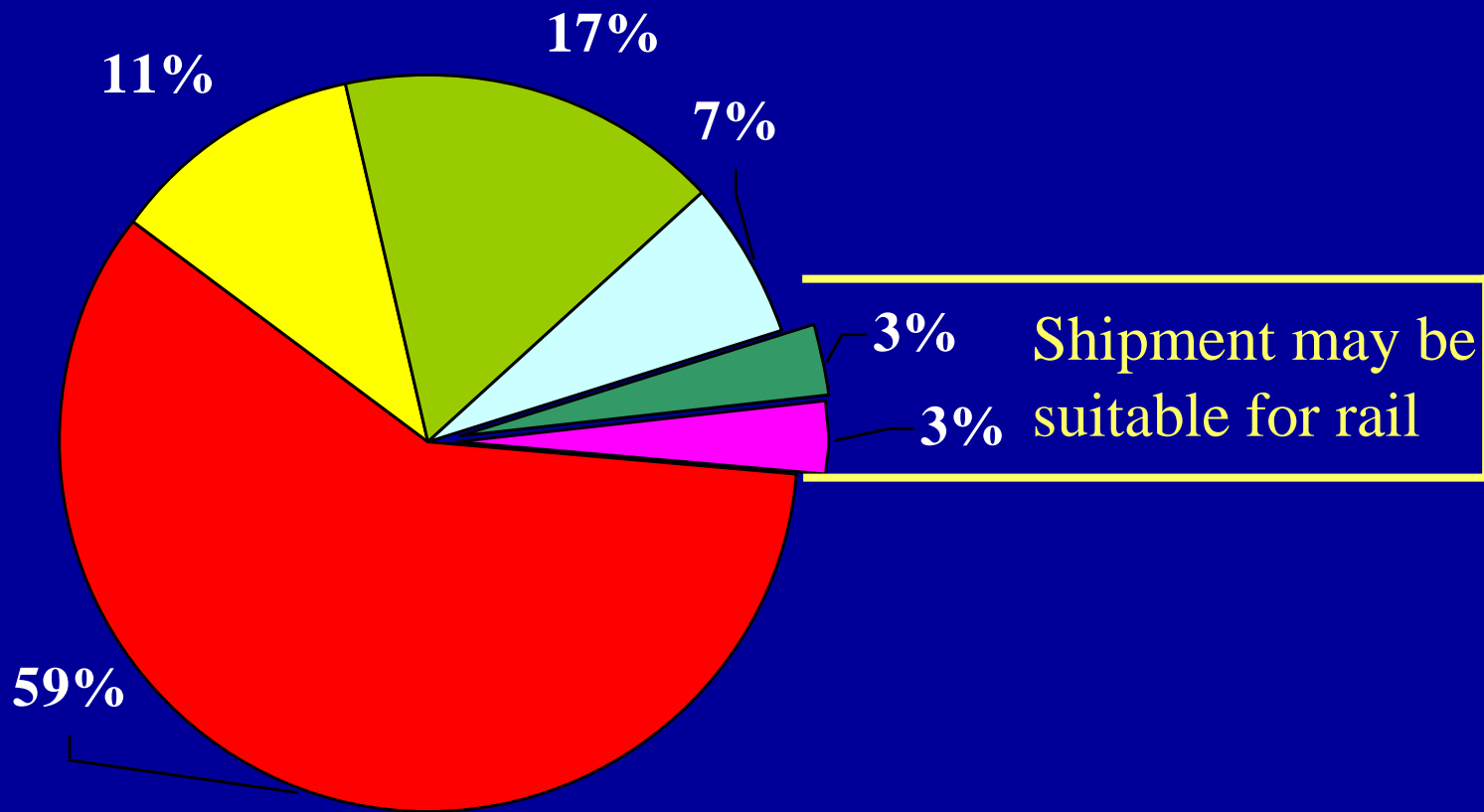
Wilmington Harbor Freight Traffic (by weight)



Source: US Army Corps of
Engineers 1996
Commodity Survey

Diversion of Truck Traffic to Rail

Distance Shipped for Commodities Originating in Delaware



■ less than 50

■ 50 to 99

■ 100 to 249

■ 250 to 499

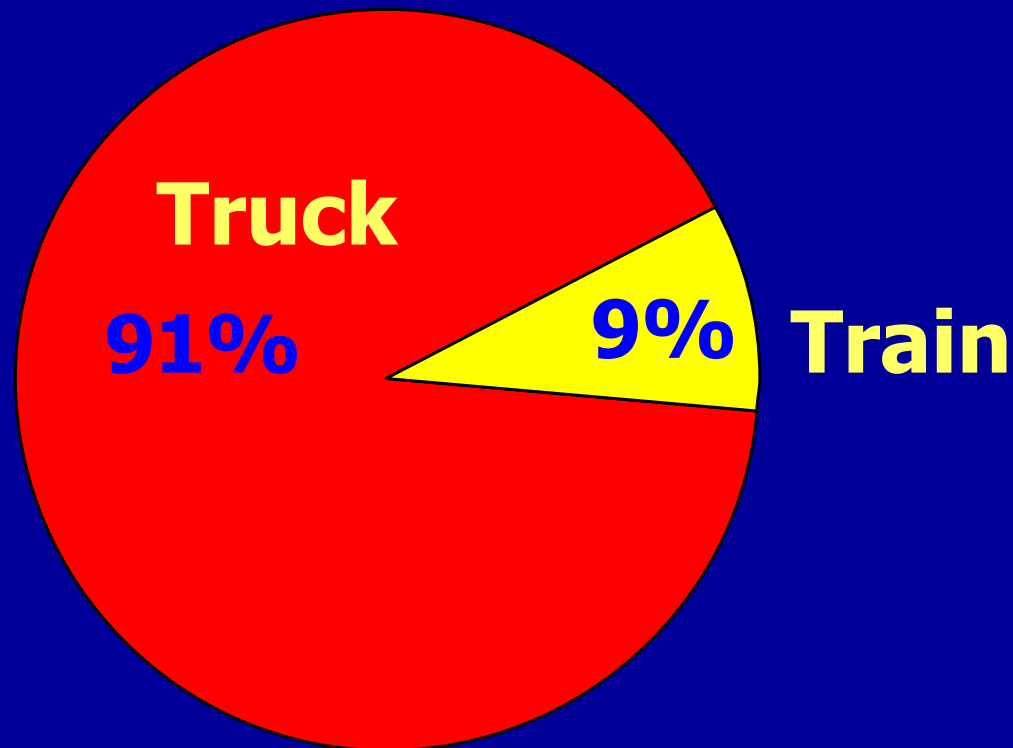
■ 500 to 749

■ 750 or more

Source: Bureau of
Transportation *Statistics 1993*
Commodity Flow Survey.

Diversion of Truck Traffic to Rail

Existing Modal Split of Shipments Originating in Delaware (by weight)



Source: Bureau of Transportation *Statistics 1993 Commodity Flow Survey*. (Data normalized to 100 percent to compensate for unknowns)

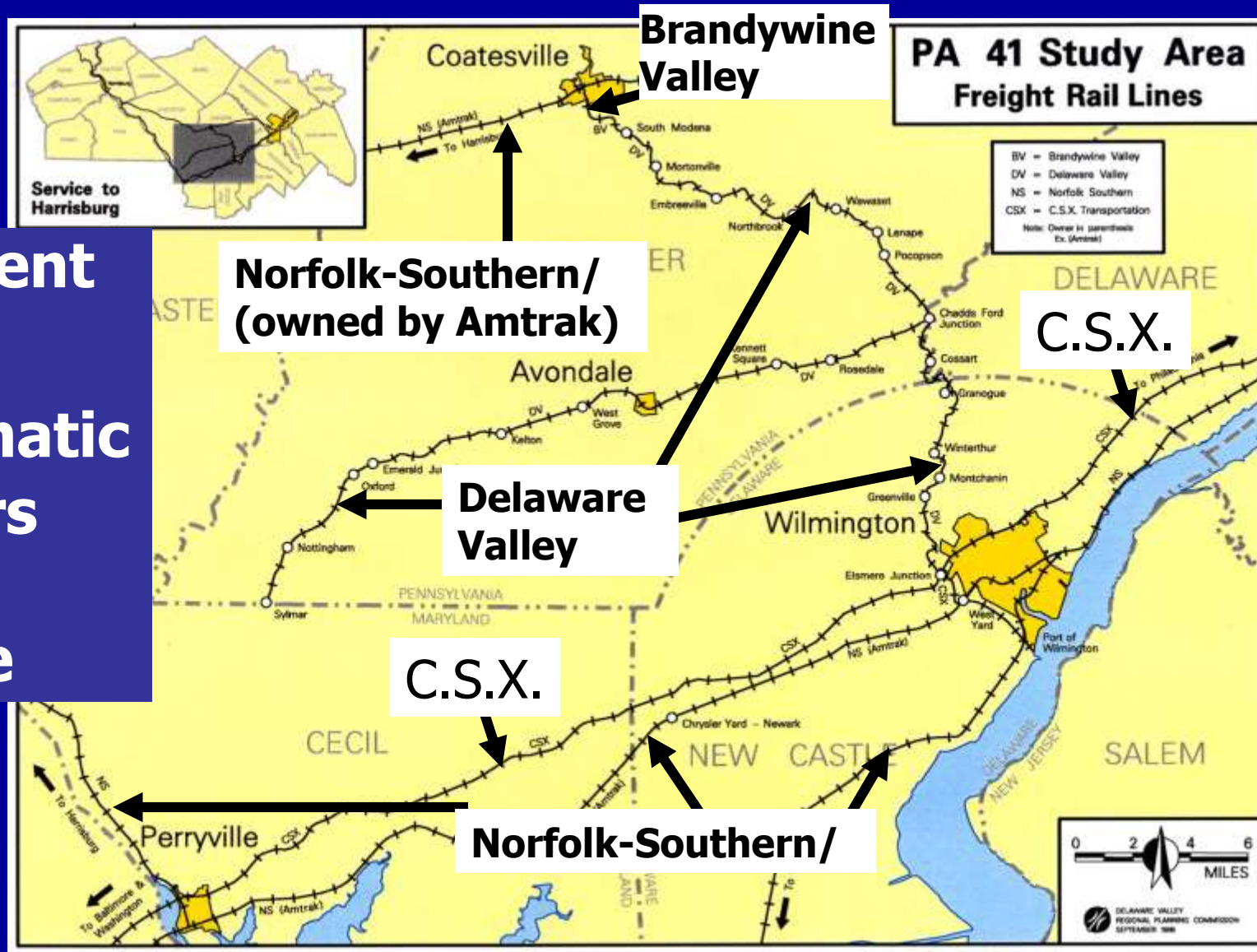
Diversion of Truck Traffic to Rail

Existing Rail System

? Lack of direct service

? Infrequent service

? Problematic transfers among multiple carriers



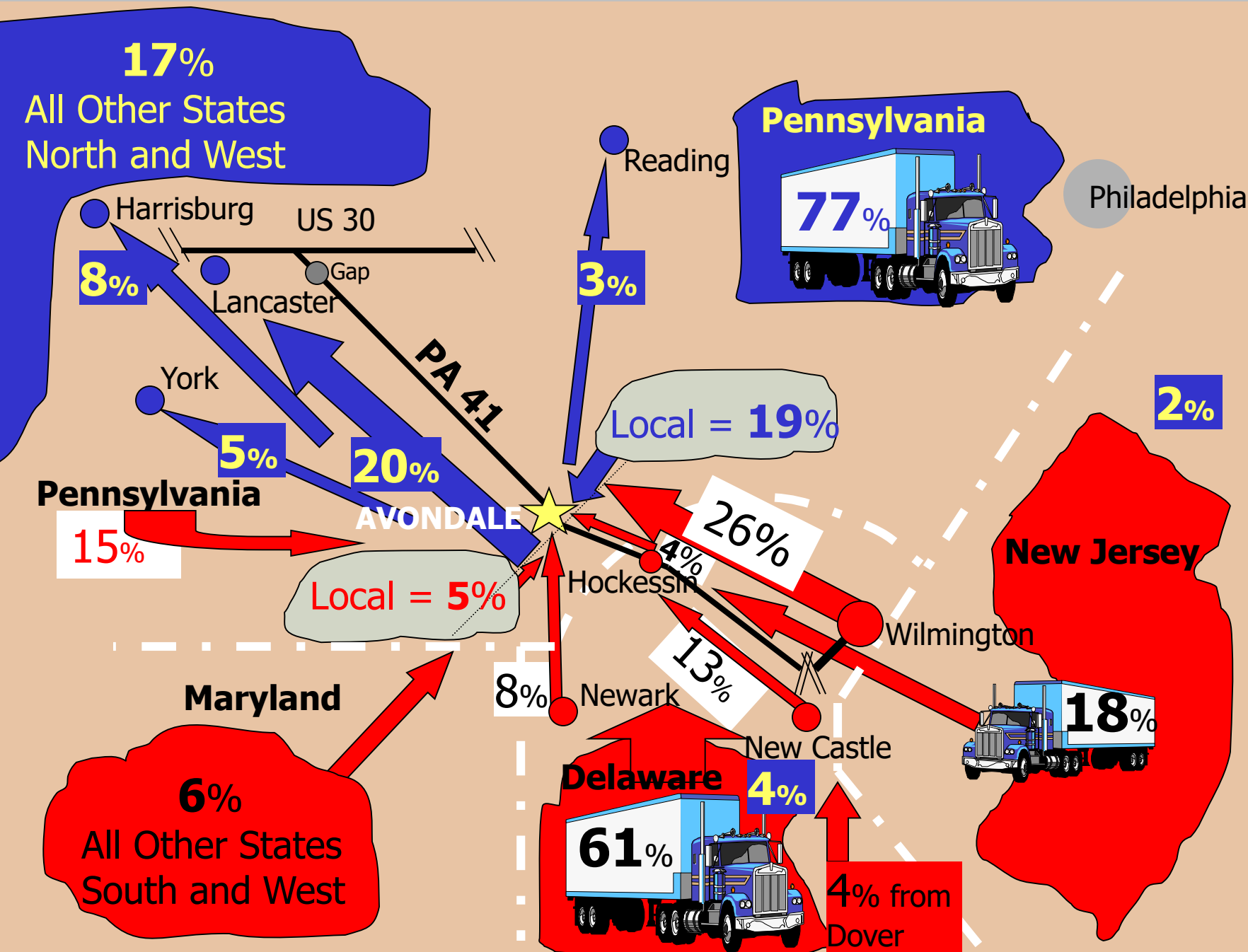
PA 41 Truck Survey

☐ About 1800 truck drivers surveyed on PA 41 near Avondale

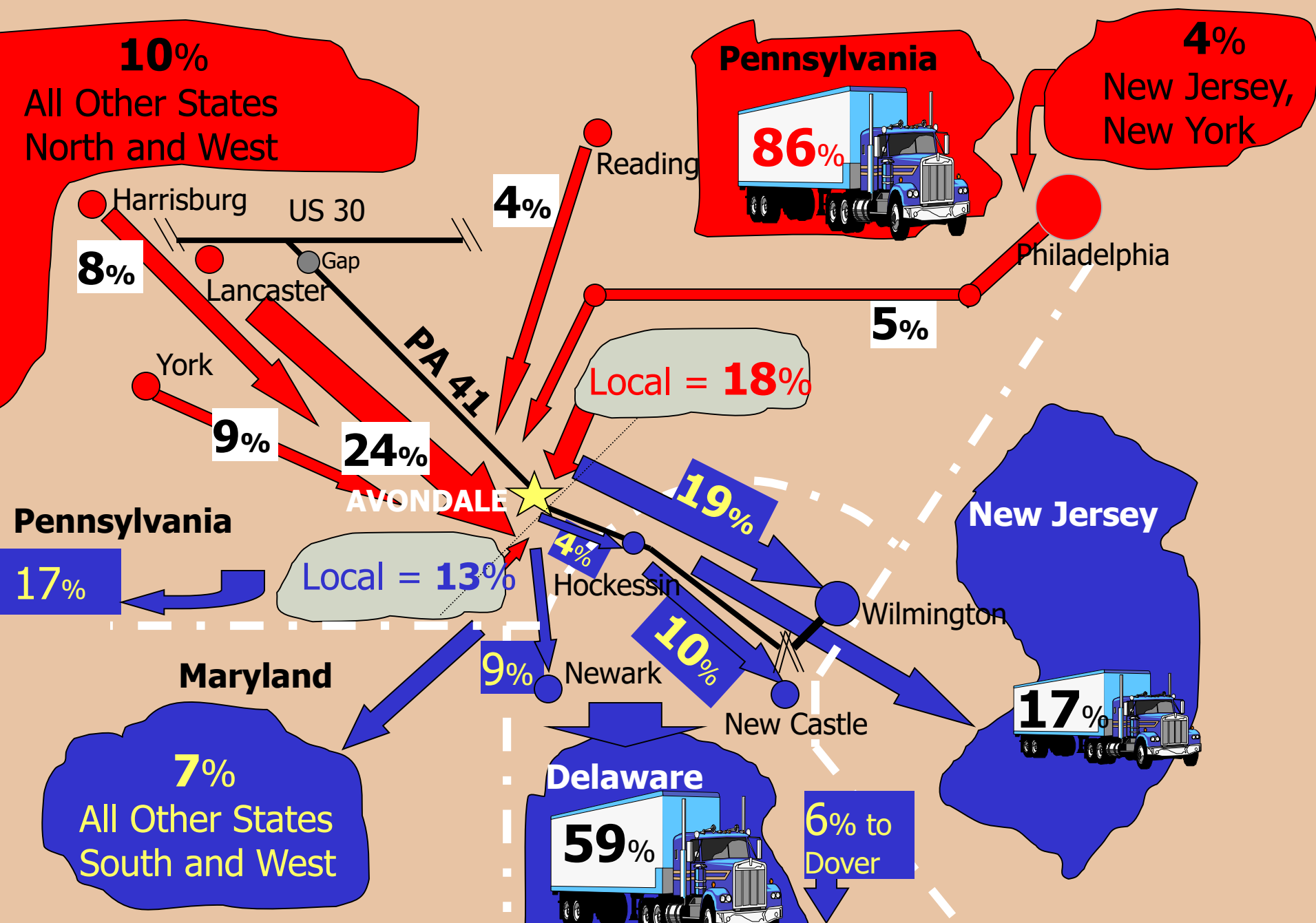
Key Findings:

- ☐ 77% of NB Trucks have destinations within PA, 86% of SB trucks originate from PA**
- ☐ 23% have at least one stop in Avondale area**
- ☐ About half of all PA 41 trucks are tractor trailers**
- ☐ Only about 3% directly associated with Port**
- ☐ About one-third of trucks are empty**
- ☐ Less than 10% of trips are longer than 400 mi.**
- ☐ Somewhat less than 19% carry perishable goods**

Origins and Destinations of Northbound Trucks on PA 41

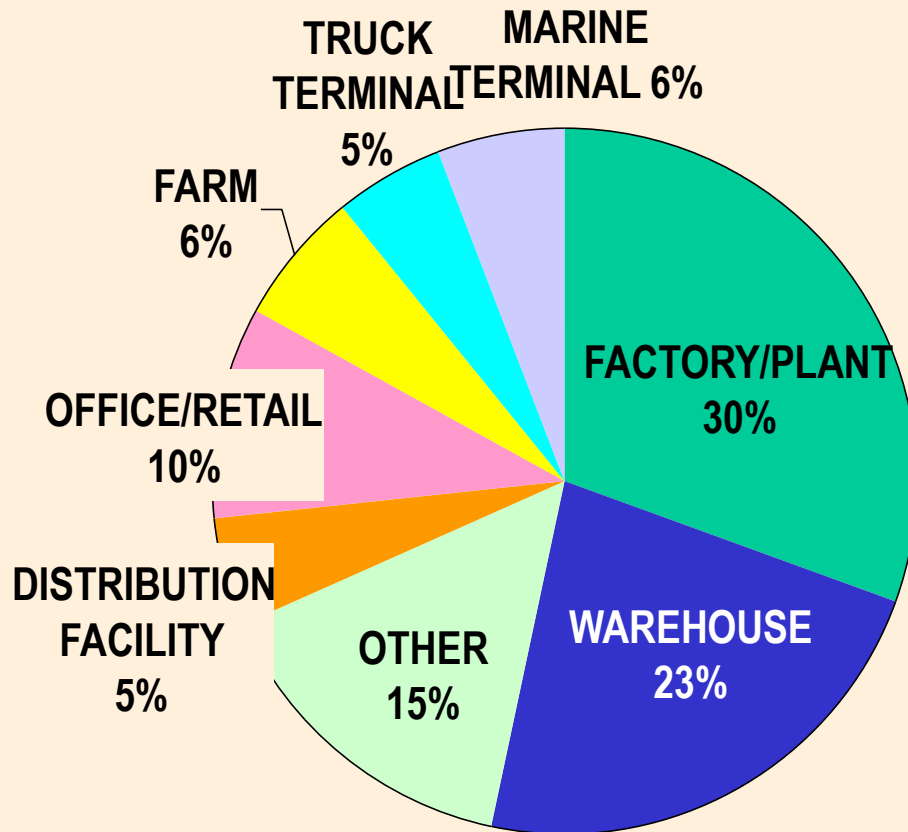


Origins and Destinations of Southbound Trucks on PA 41

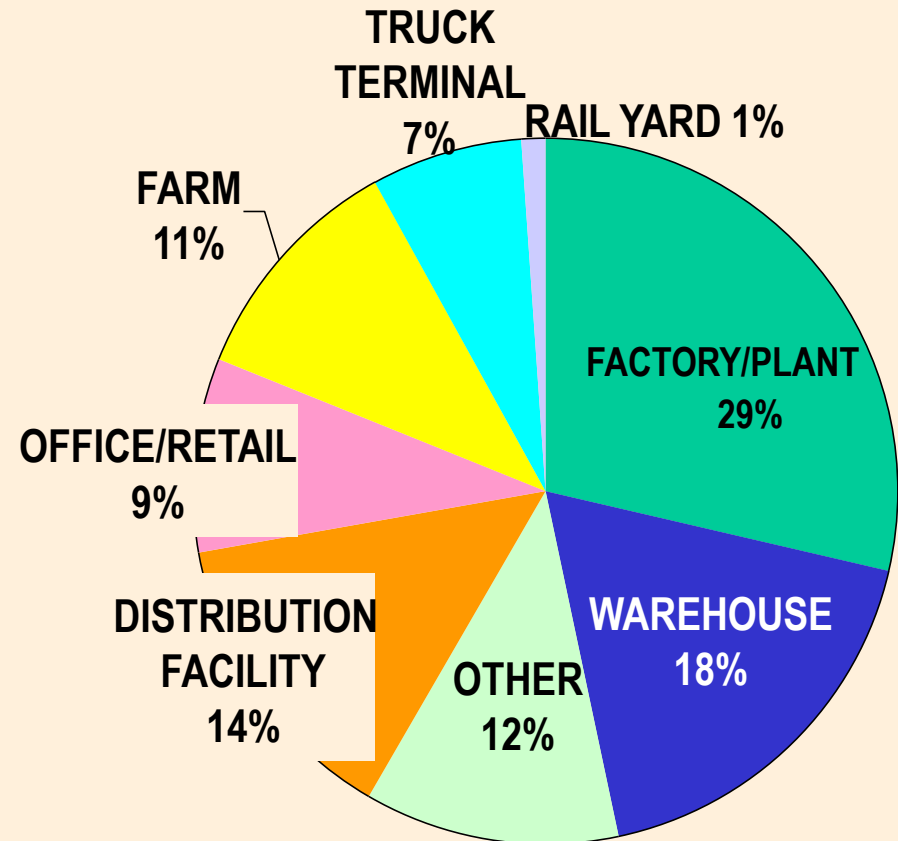


Trip Origin Facility Type — PA 41 Trucks

Northbound



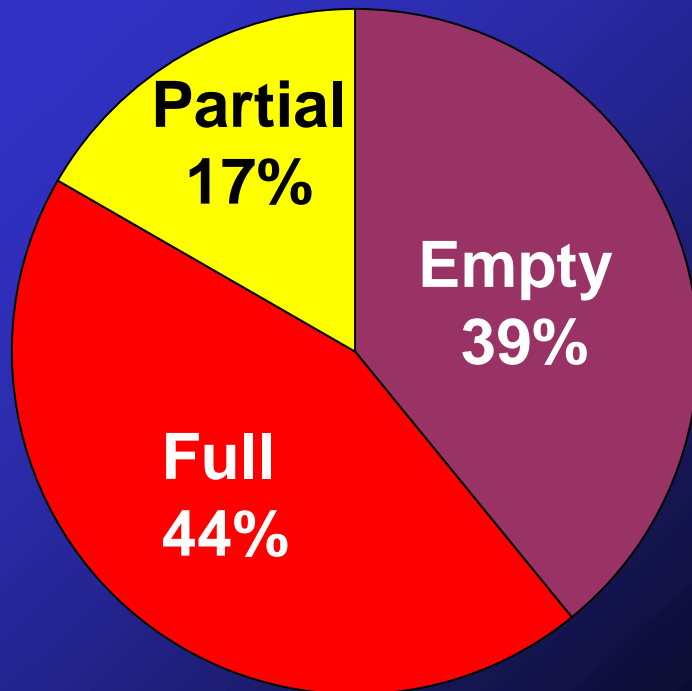
Southbound



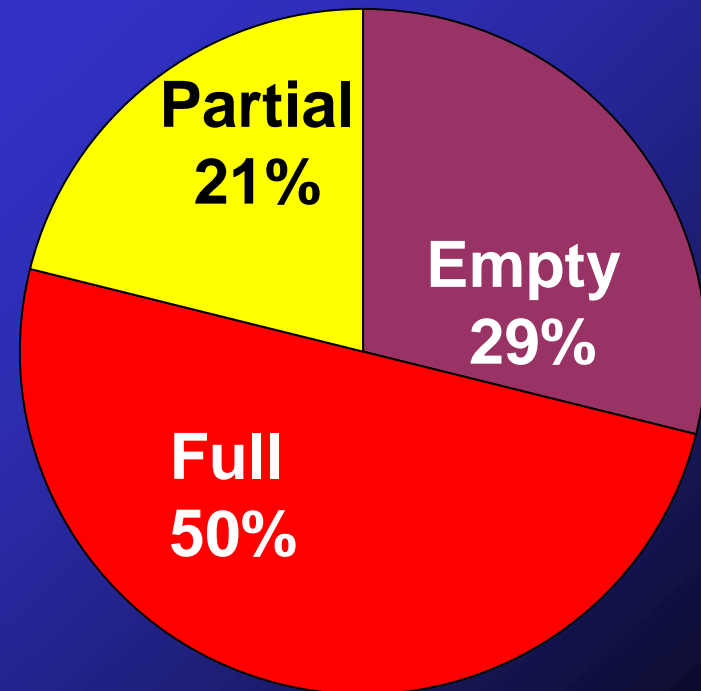
PA 41 Corridor Analysis

Load Size of PA 41 Trucks

Northbound



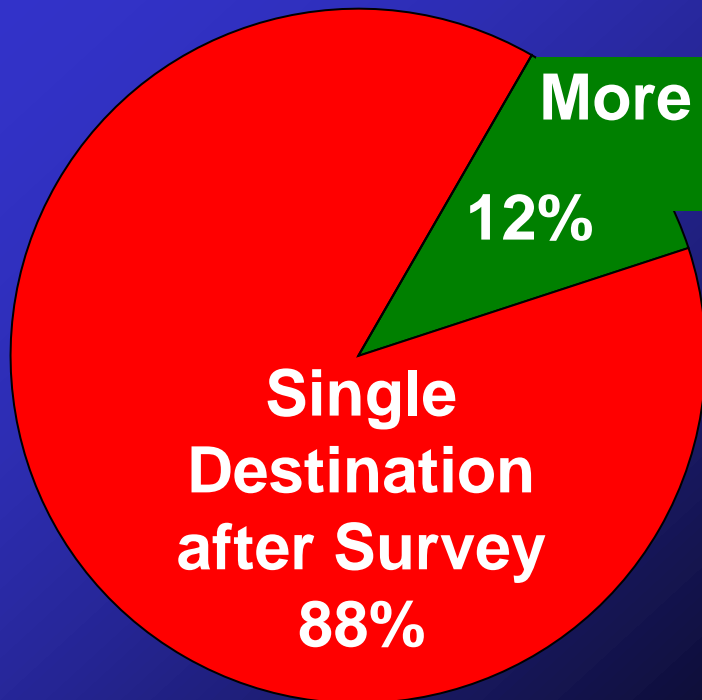
Southbound



PA 41 Corridor Analysis

PA 41 Trucks with Multiple Destinations

Northbound

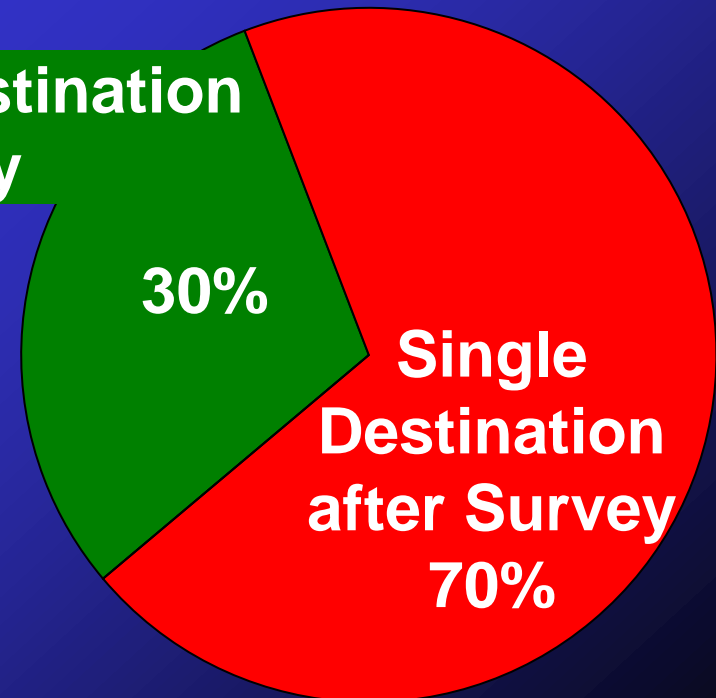


More than One Destination
after Survey

12%

Single
Destination
after Survey
88%

Southbound

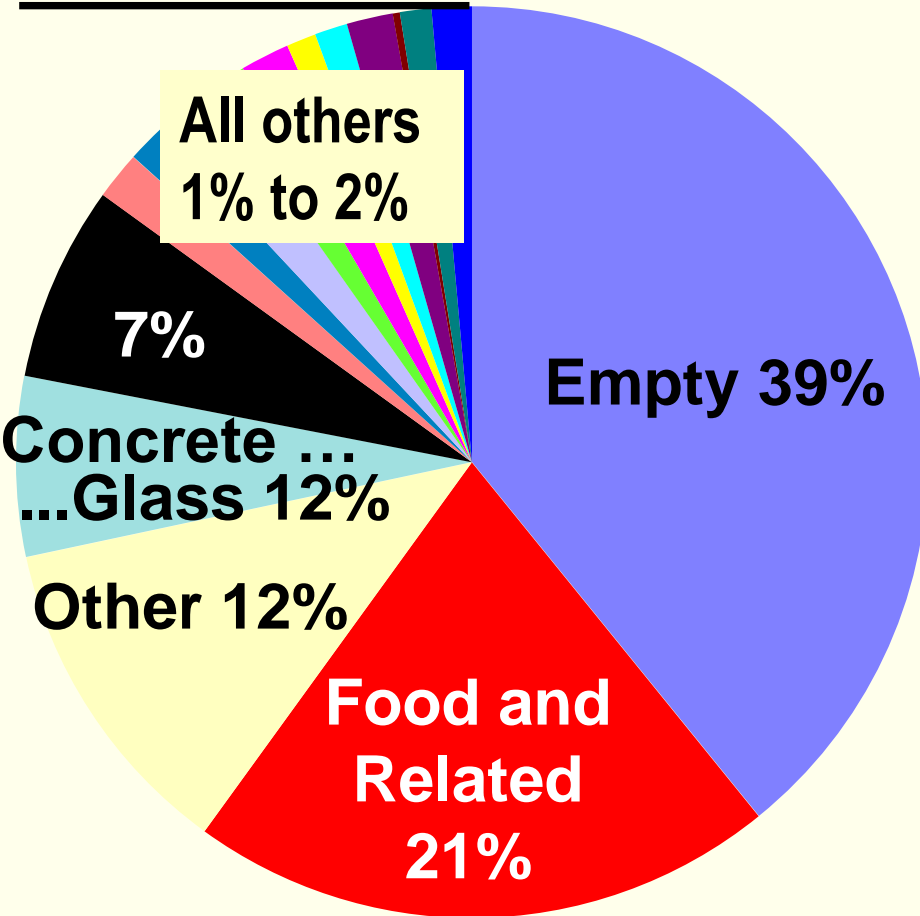


30%

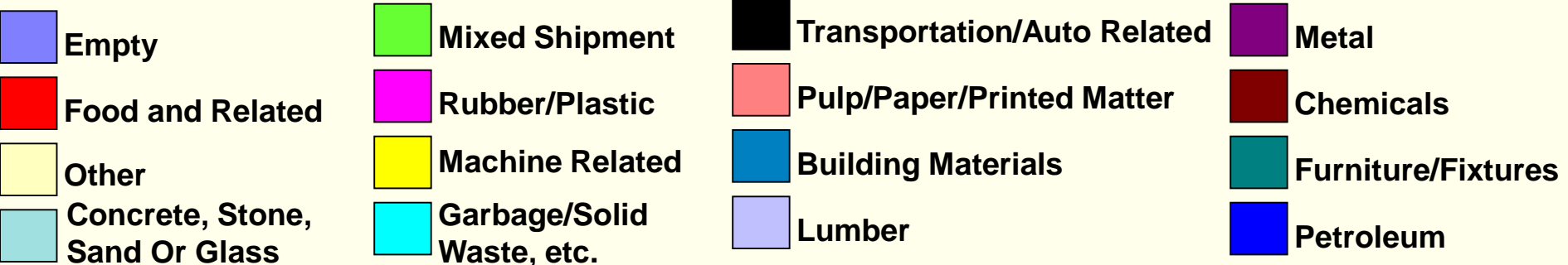
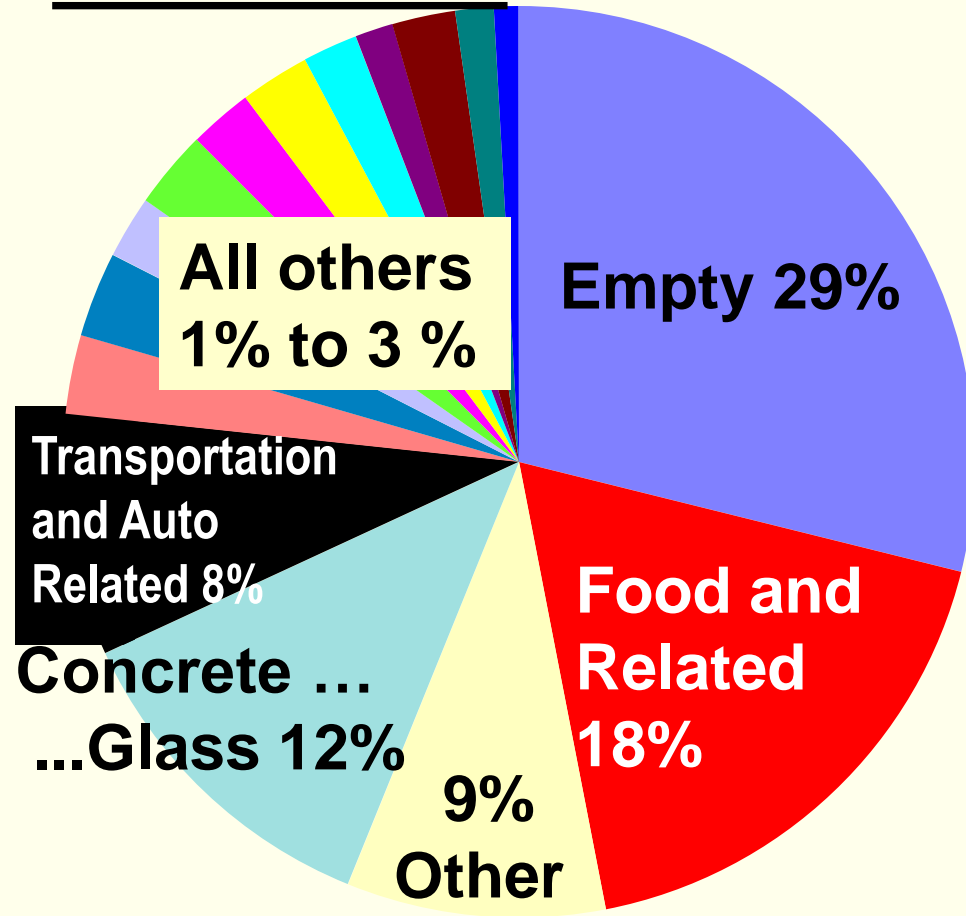
Single
Destination
after Survey
70%

Goods Carried by PA 41 Trucks

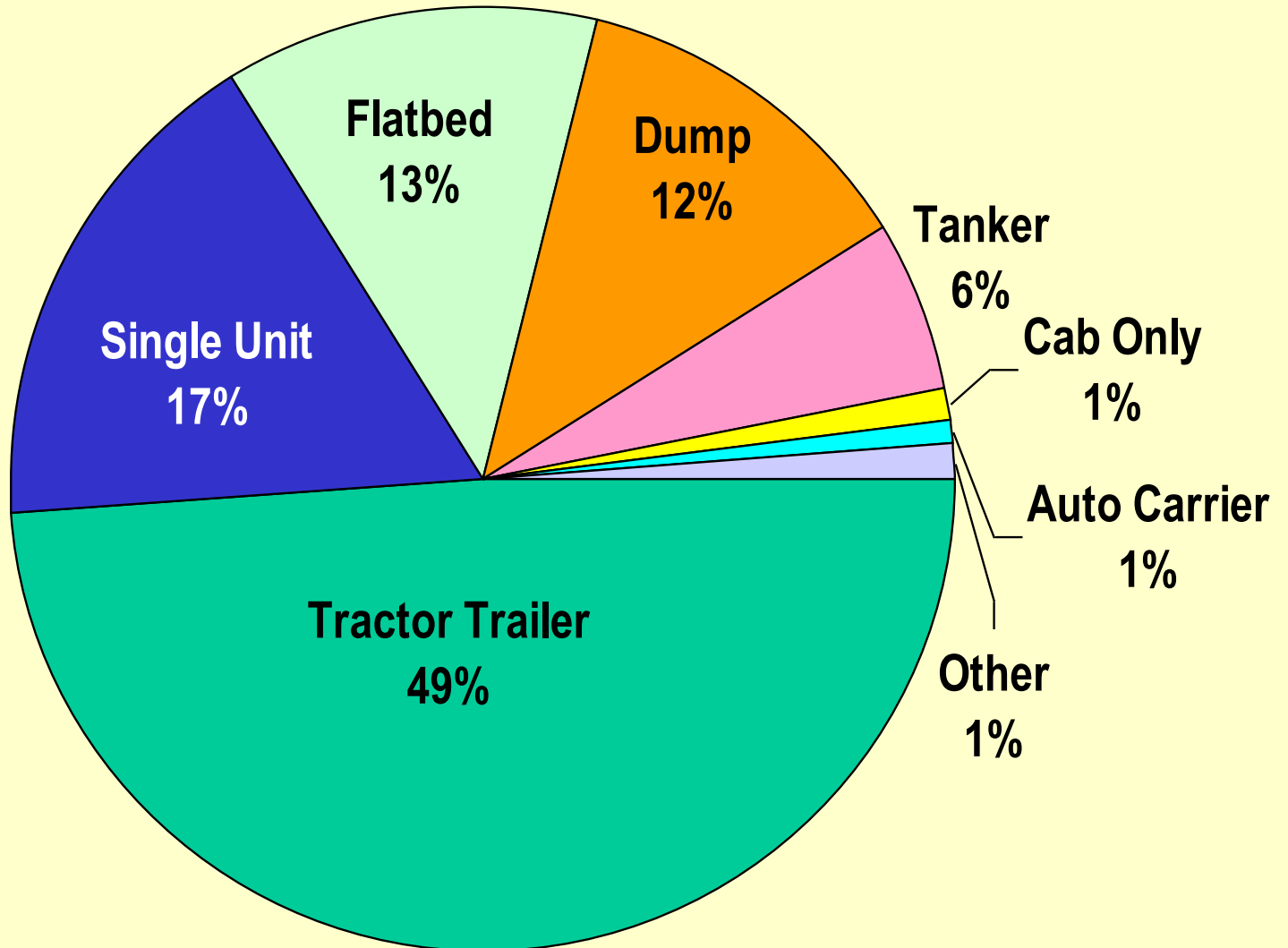
Northbound



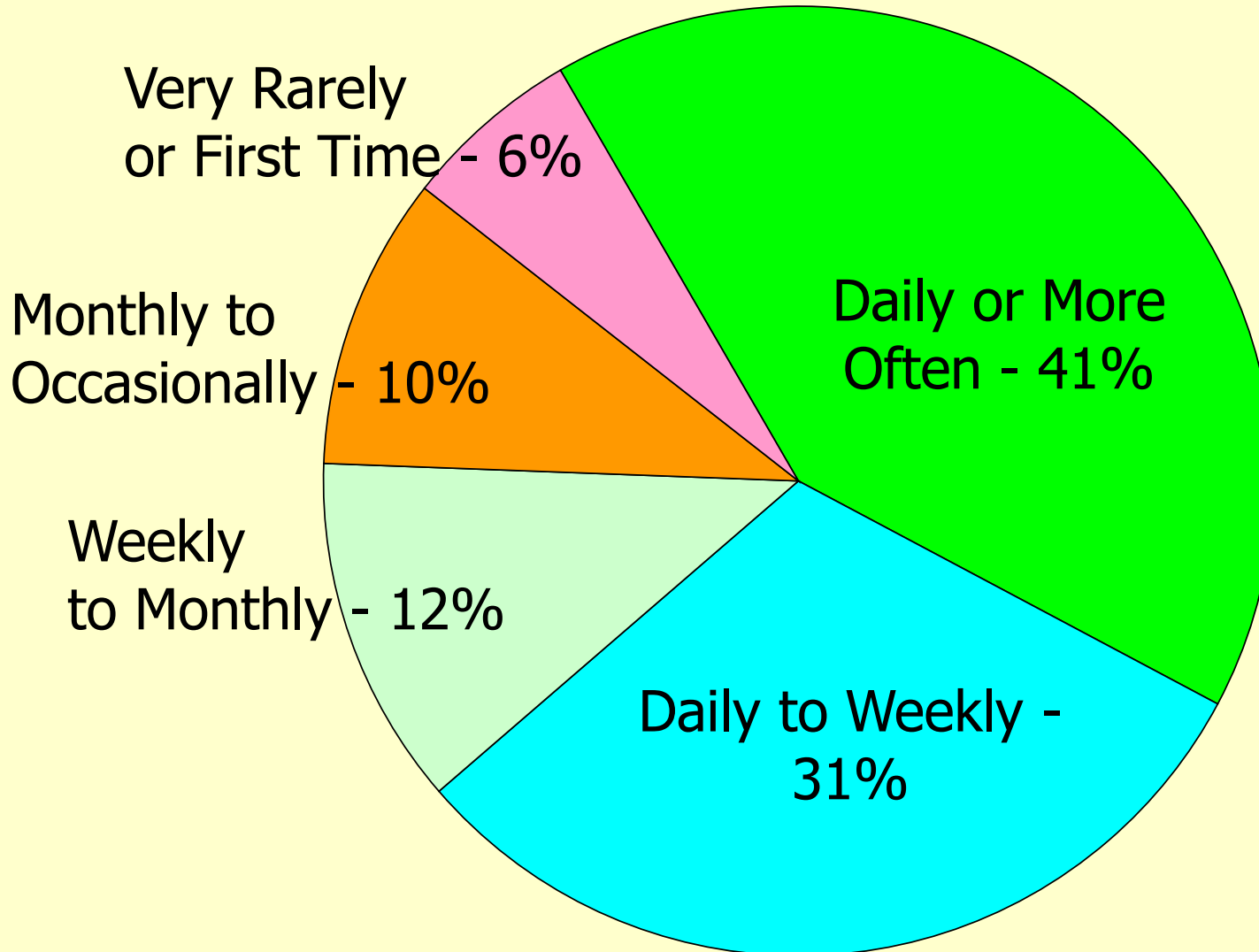
Southbound



PA 41 Truck Types



Trip Frequency for PA 41 Trucks

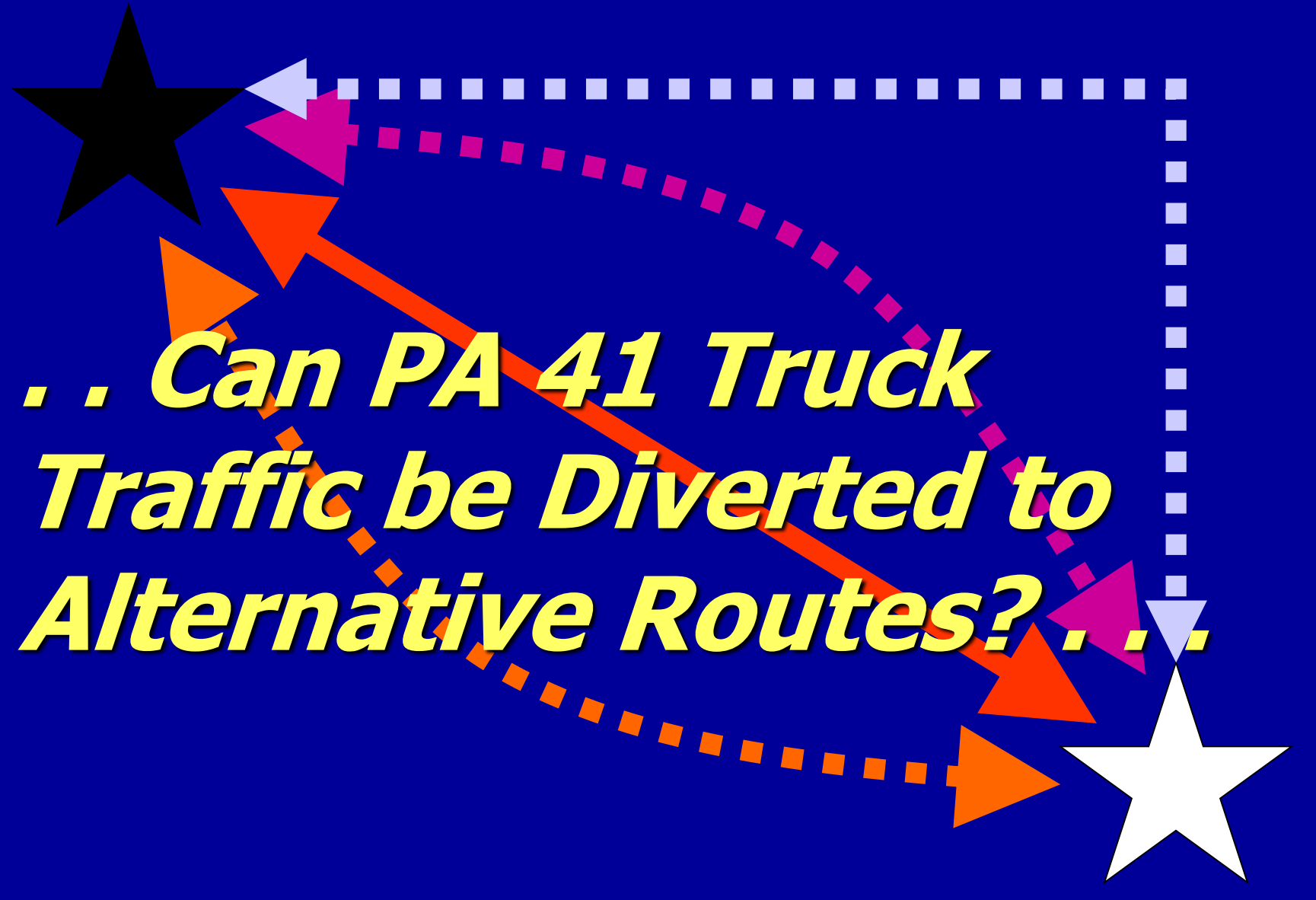


Diversion of Truck Traffic to Rail

Conclusions:

- [?] Fragmented existing rail system not conducive to shipment of goods presently served by PA 41**
- [?] Few truck trips through the region are long enough to consider rail**
- [?] Rail generally does not well link primary origins and destinations**
- [?] Many long distance shipments can not use rail due to time-sensitivity of perishable goods or other logistical constraints**
- [?] PA 41 shipments amenable to rail amount to less than 145 trucks per day (of >2000 total)**

PA 41 Corridor Analysis

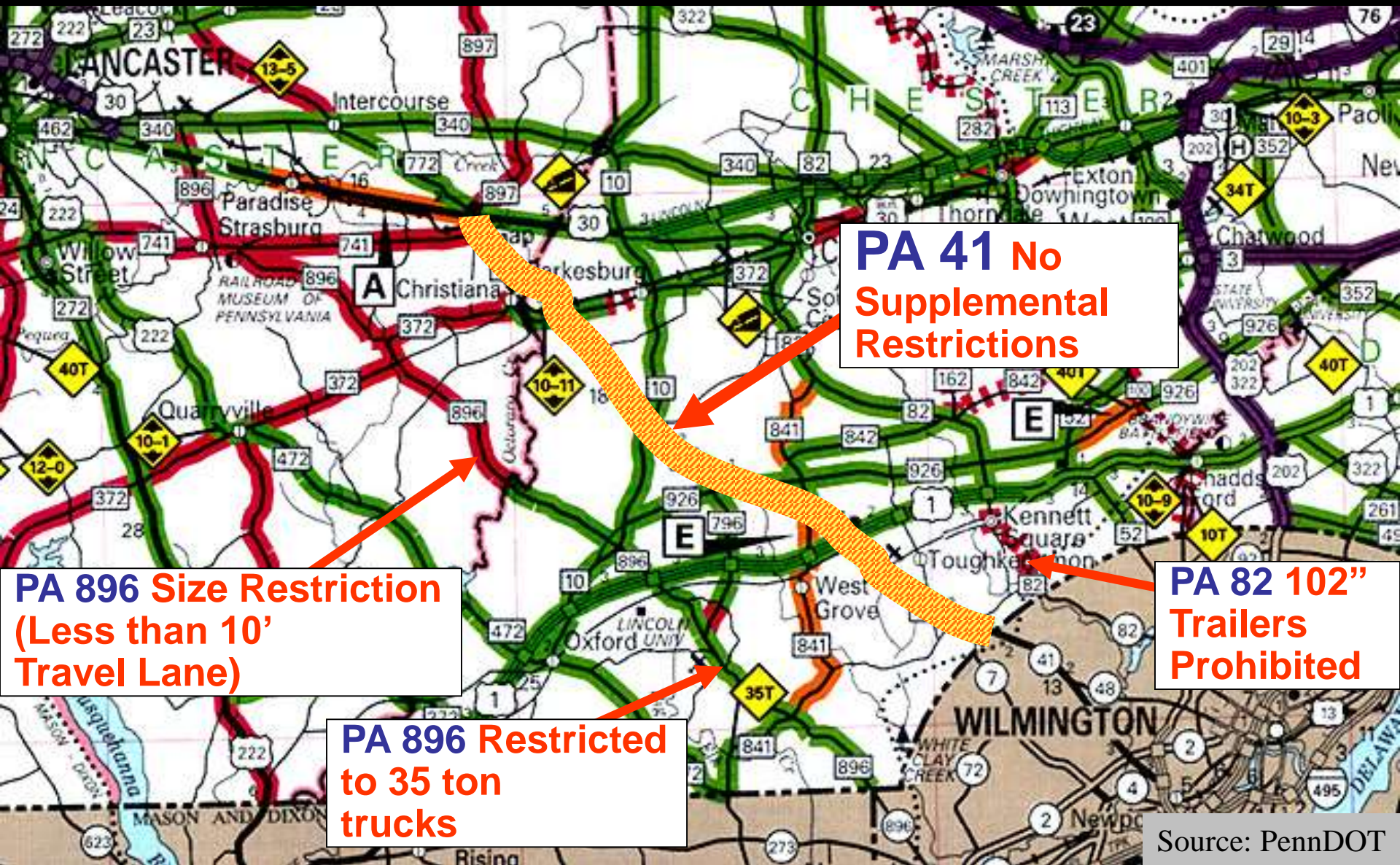


... Can PA 41 Truck Traffic be Diverted to Alternative Routes? ...

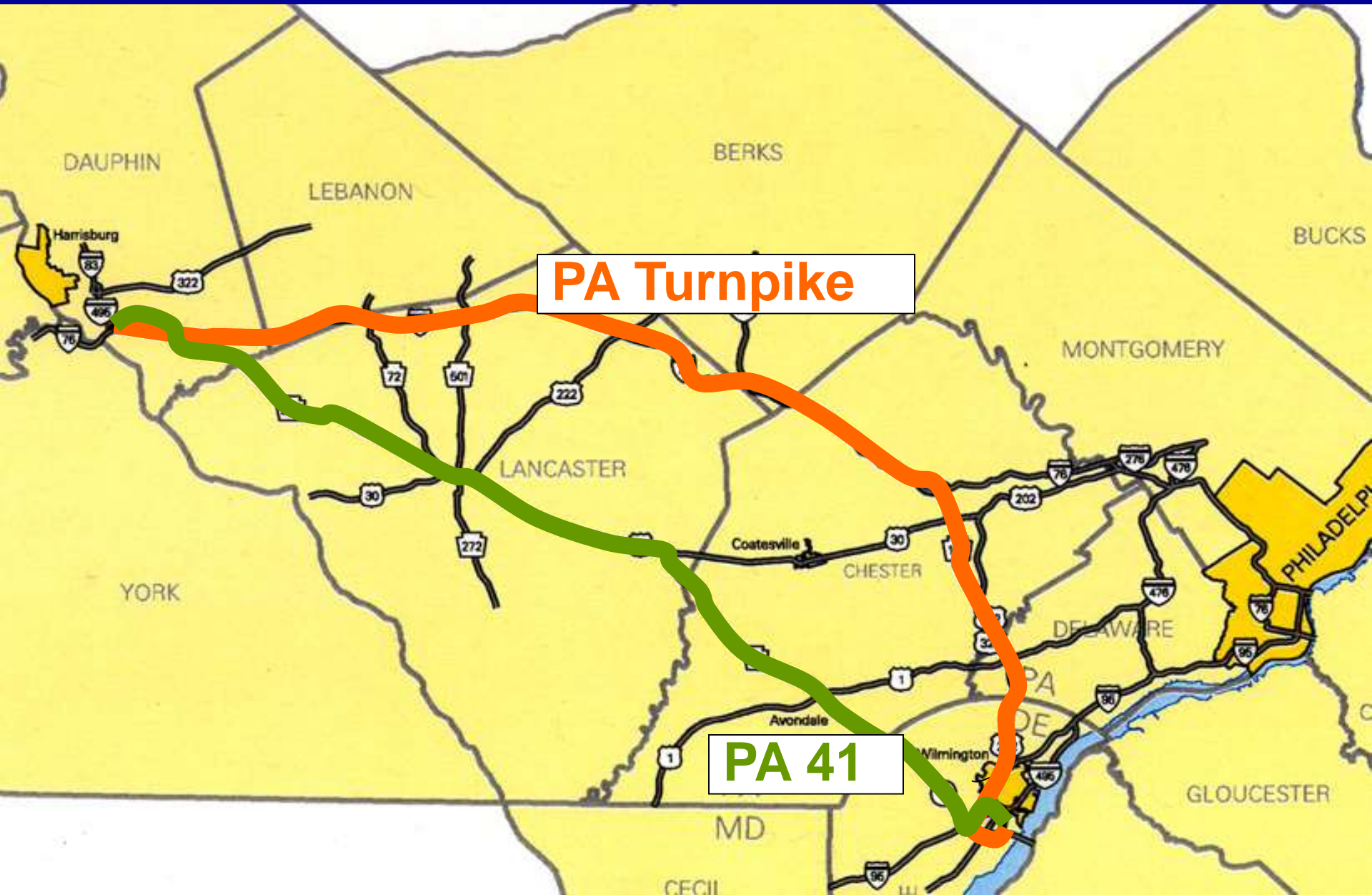
The diagram features a black star in the upper left and a white star in the lower right. A solid red arrow points from the black star to the white star, passing through the text. A dashed blue line forms a rectangular path from the black star to the white star. A dashed pink arrow curves from the black star to the white star, passing above the text. A dashed orange arrow curves from the black star to the white star, passing below the text.

Alternative Truck Routes

Options for Parallel Routes: PA 896, PA 82



Alternative Travel Time Study Routes: **Via US 202 and PA Turnpike vs. PA 41**



Alternative Travel Time Study Routes: **Via US 202 and PA Turnpike vs. PA 41**

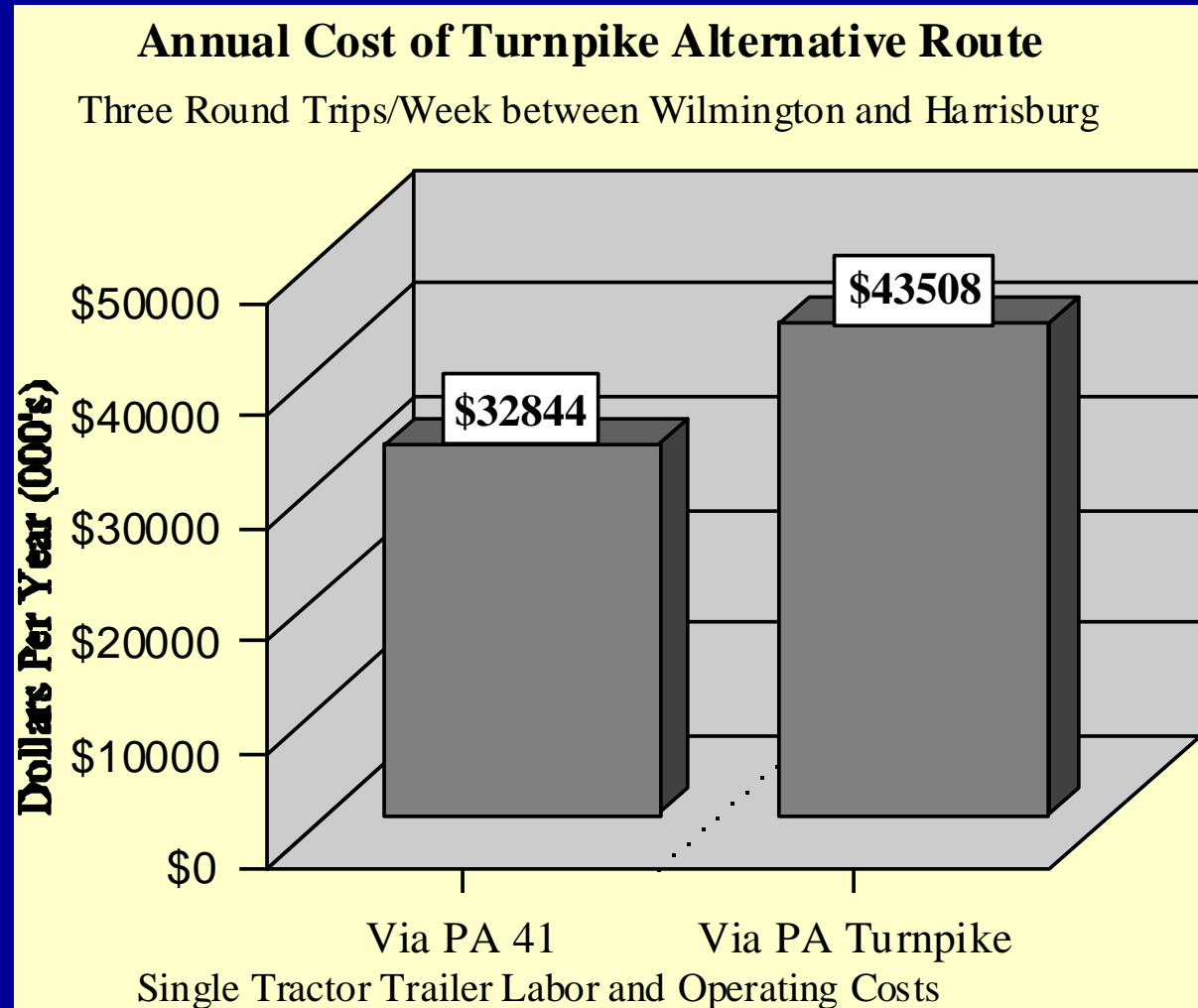
	Route 1: DE 41, PA 41, US 30, PA 283		Route 2: I-295, I-95, US 202, PA 100, PA Turnpike	
Distance	82 miles		100	
PA Turnpike Toll	n/a		\$12.40 (for a tractor trailer)	
<u>Travel Times</u>	From Port of Wilmington to Harrisburg	From Harrisburg to Port	From Port of Wilmington to Harrisburg	From Harrisburg to Port
Morning Peak	103 minutes	105	115	120
Midday	103	103	121	122
Afternoon Peak	113	105	119	122

Alternative Truck Routes

Via US 202 and PA Turnpike

❓ About 18 miles and 10 minutes longer than travel via PA 41

❓ Substantial added expense due to tolls (\$12.40 each way for a typical, loaded tractor-trailer) and other increased operating costs



Alternative Truck Routes

Conclusions:

- ❑ Parallel highway routes do not serve large heavy trucks as does PA 41**
- ❑ Origin and destination data indicates that PA 41 is the only reasonable route for the trucks it serves**
- ❑ US 202/PA Turnpike option is time and cost prohibitive even for the minority of total PA 41 shipments that could use the route to serve their origins and destinations**

PA 41 Corridor Analysis



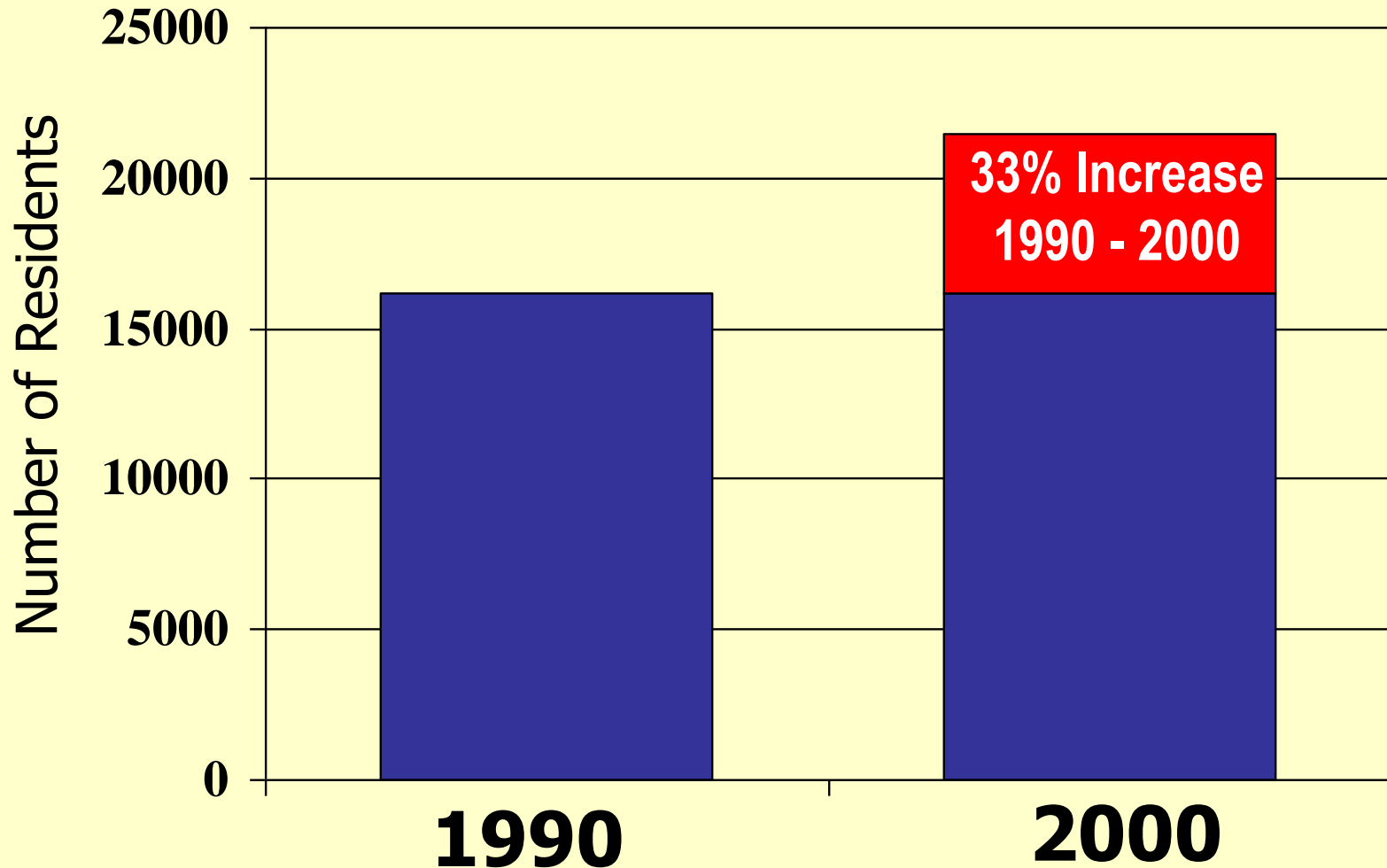
Land Use

Highlights:

- ❑ Corridor study area consists of Avondale Boro., Kennett, Londonderry, London Grove and New Garden Twps.
- ❑ Corridor population increased from about 16,200 in 1990 to about 21,400 in 1997
- ❑ Employment increased from about 6,700 to about 8,000 during same period
- ❑ Between 1970 and 1995 about 4000 acres, or 16% of the corridor's 1970 agricultural land was developed
- ❑ Land occupied by residential development increased from about 2,600 to 4,900 acres between 1970 and 1995

Land Use

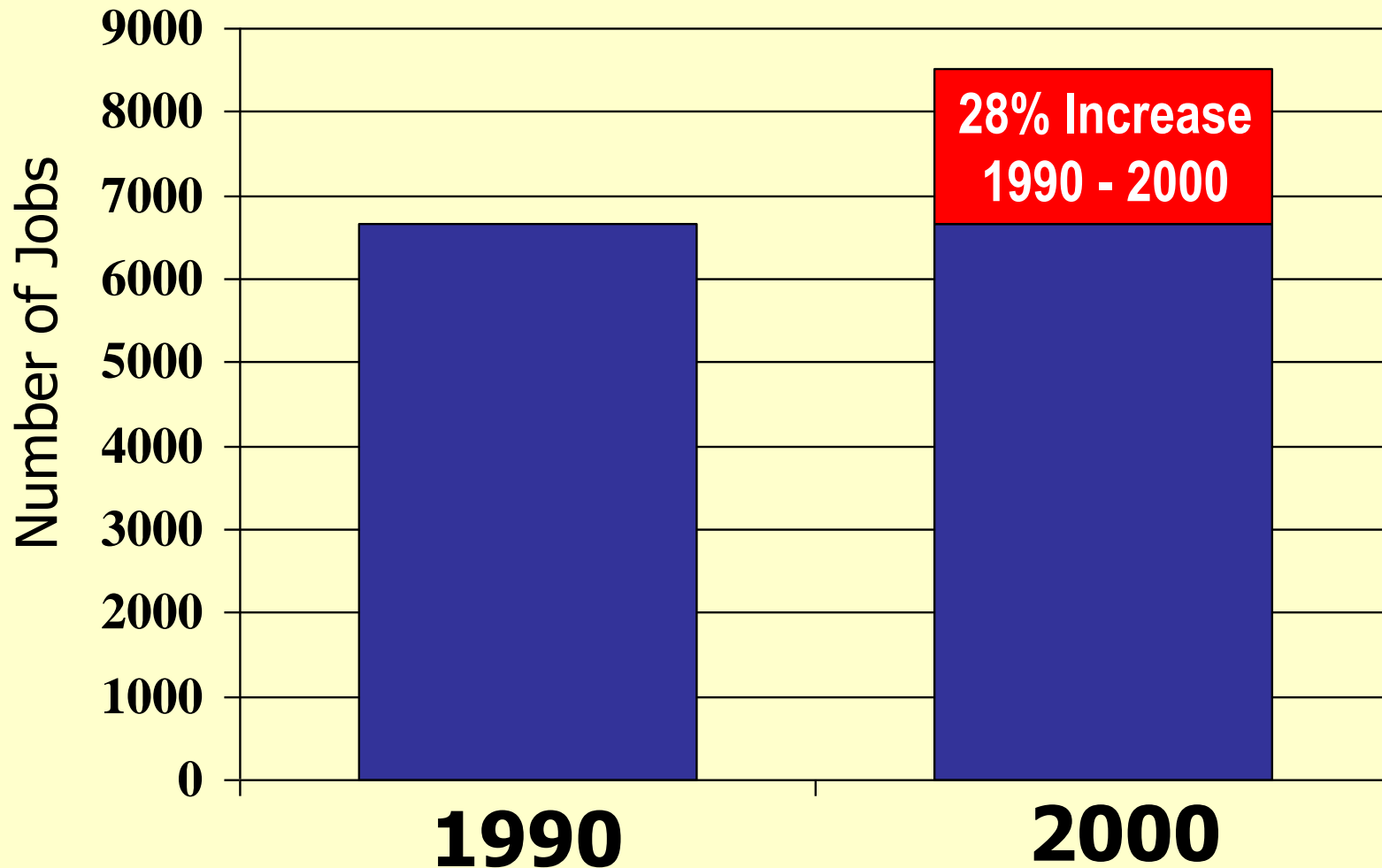
PA 41 Corridor Population Growth



Source: 1990 Census, DVRPC Estimates through 1997, then projected according to trendline

Land Use

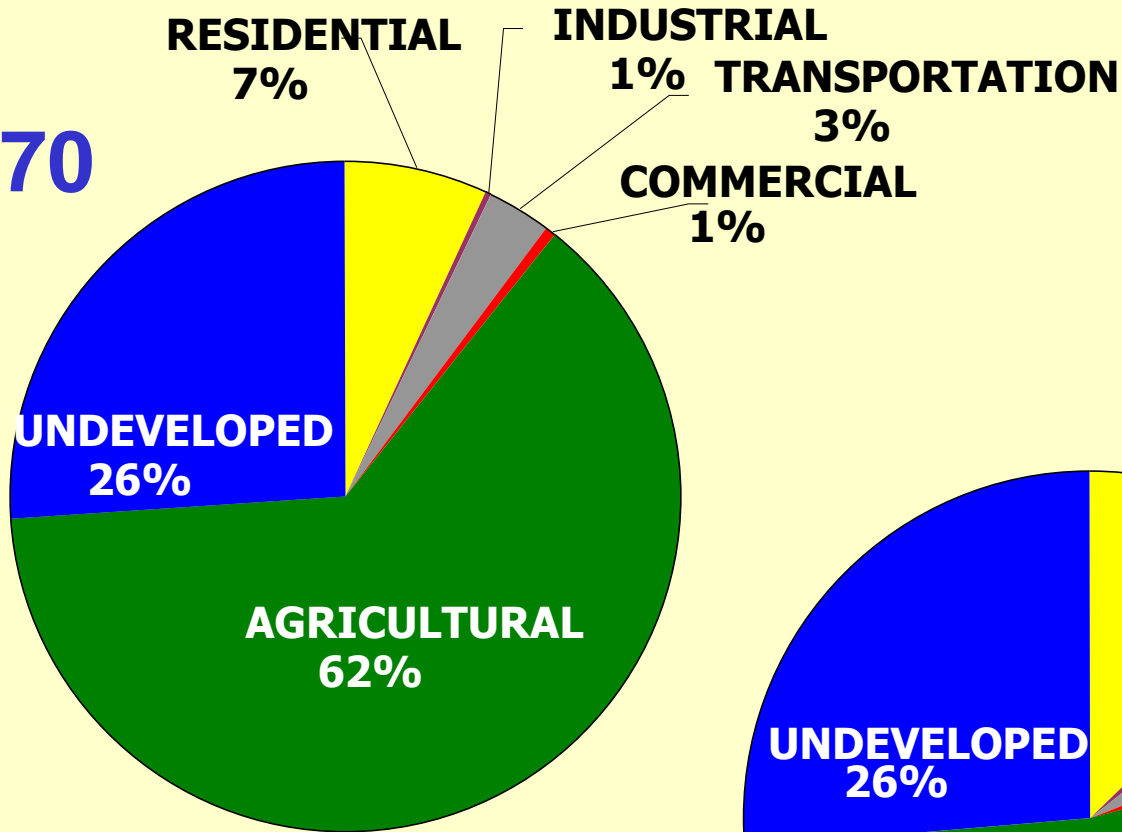
PA 41 Corridor Employment Growth



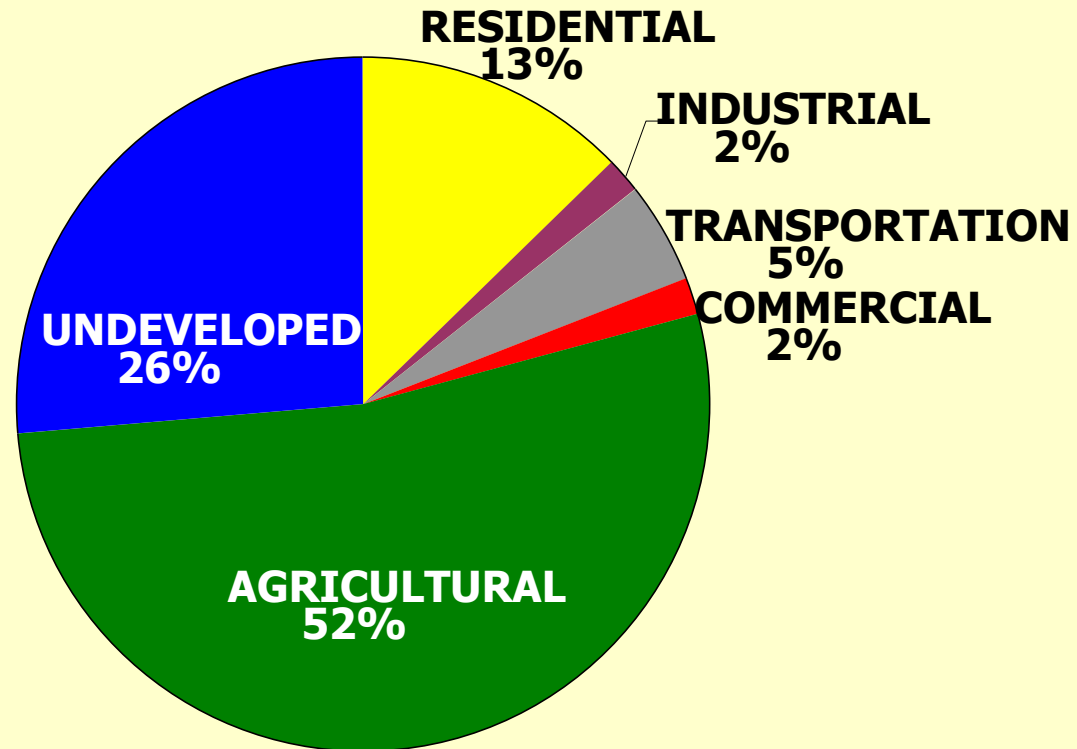
Source: 1990 Census, DVRPC Estimates through 1997, then projected according to trendline

Land Use

1970



1995

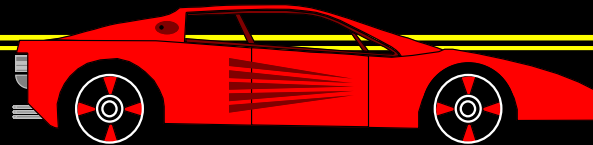
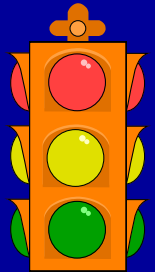


Land Use

Conclusions:

- ❑ Development pressures will increasingly impact area transportation system capacity and safety
- ❑ Municipal land use controls should advance consistent with Chester County's *Landscapes Plan*
- ❑ Strategies to address land use concerns should be developed through a multi-municipal and participatory process

... Other PA 41 Issues ...



Other PA 41 Issues

? *Safety Concerns*

- ?** Safety is foremost PA 41 concern of municipalities
- ?** Nine intersections being improved by PennDOT SAMI projects
- ?** Support for lower speed limits and new traffic signals
- ?** Safety improvements must comply with MUTCD warrants

Other PA 41 Issues

❑ Is a Four-Lane, Limited Access Expressway for the Entire Length of PA 41 Needed or Desired?

Key Findings:

- ❑ Project is not included in or supported by municipal, county, regional and state plans**
- ❑ New highway would be 22.5 to 25 miles**
- ❑ Project is likely to cost about \$340 - 500 million**
- ❑ Project of this magnitude would have significant environmental impact**

Other PA 41 Issues

- ❑ ***“Enhanced No-build” Option***
- ❑ **Supported by SAVE and other local interest groups**
- ❑ **Objective is to develop an alternative which is smaller in scope than a bypass**
- ❑ **PennDOT has agreed to evaluate enhanced no-build option**

Conclusions

❑ An MIS is not Needed

- ❑ The planning process is participatory and collaborative**
- ❑ Outstanding issues will be addressed by the existing planning process**
- ❑ There are no major modal alternatives**