



I-80 Planning Study

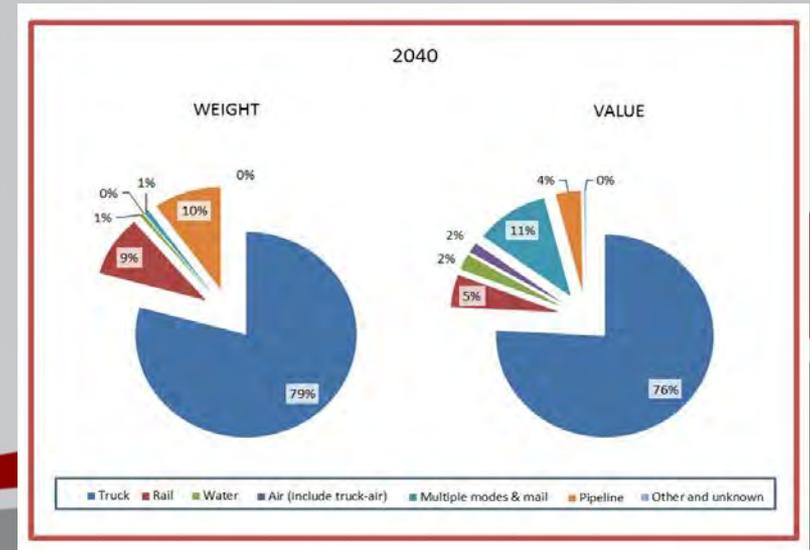
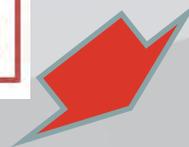
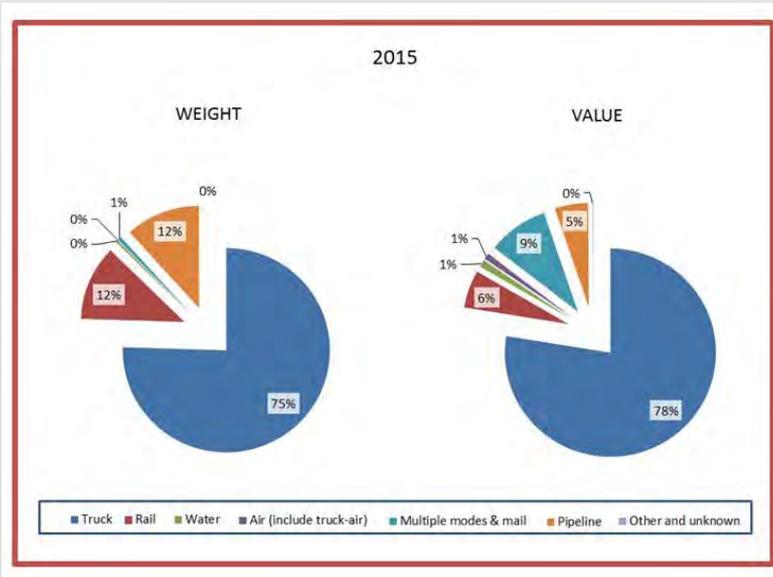
Truck Accommodations

Purpose of the I-80 Planning Study

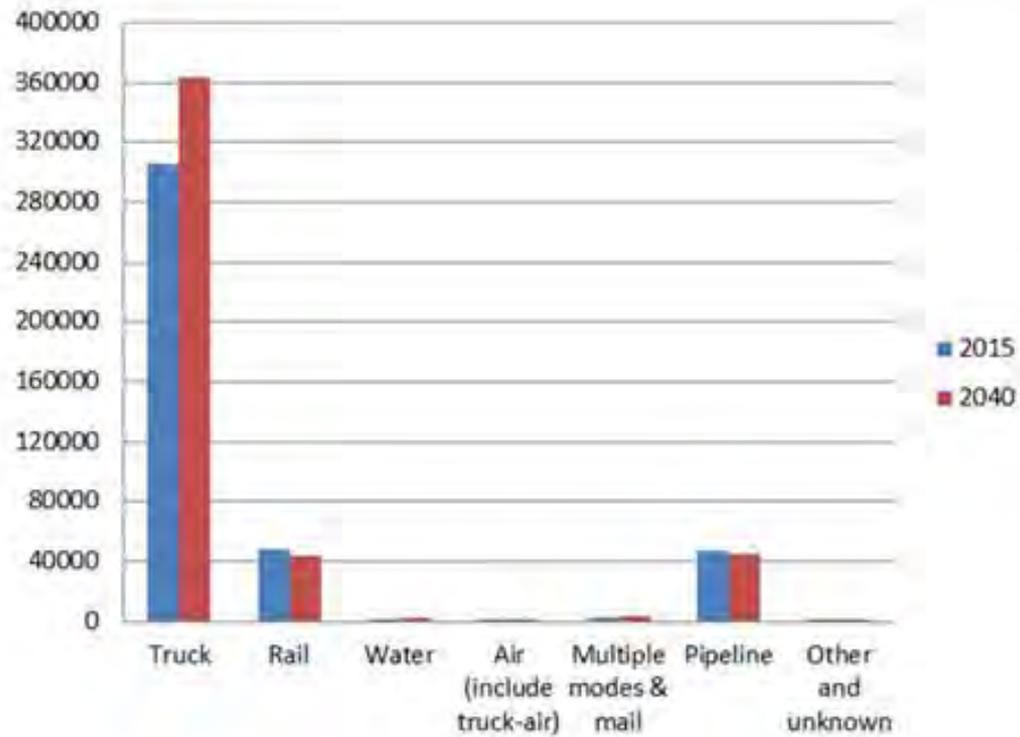
Answer some system decisions that affect improvement strategies along the entire corridor:

- What are the visions and goals for the I-80 system?
- Are we investing in the right way and the right place?
- What is the right size of the I-80 system?
- What are alternative investment strategies?
- What is the potential cost to reconstruct the system?
- What should the future interstate look like?
- How do we prioritize I-80 into construction projects?

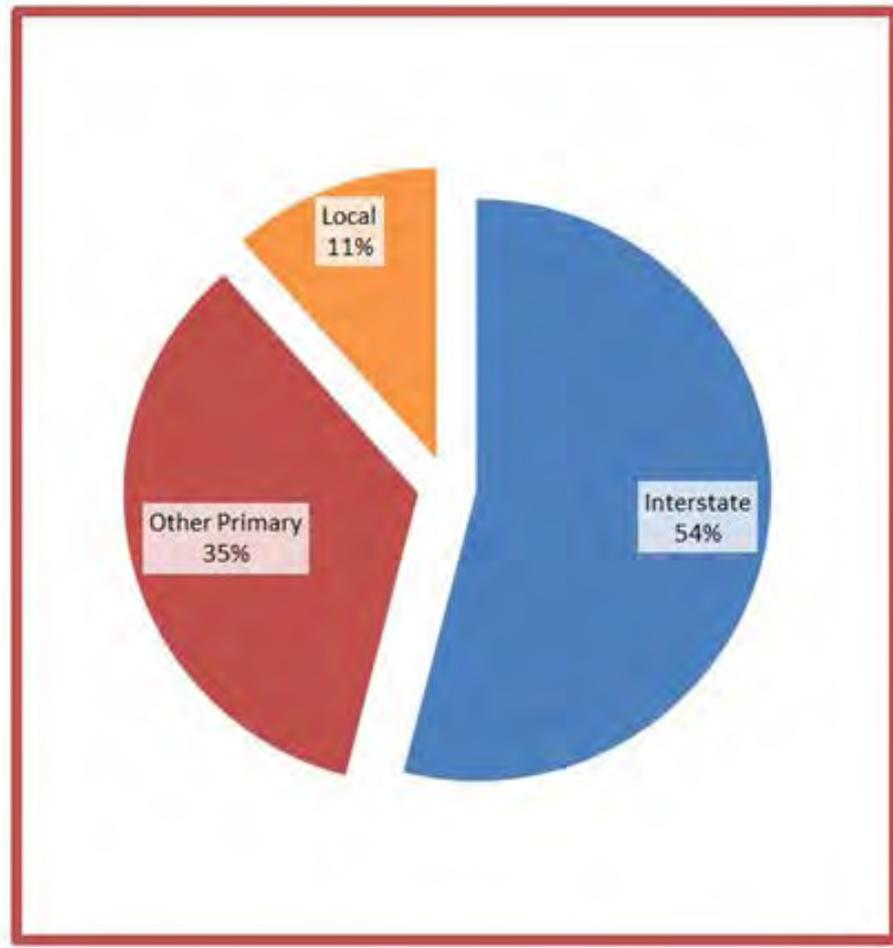
Current and Future Mode Splits



Weight by Mode



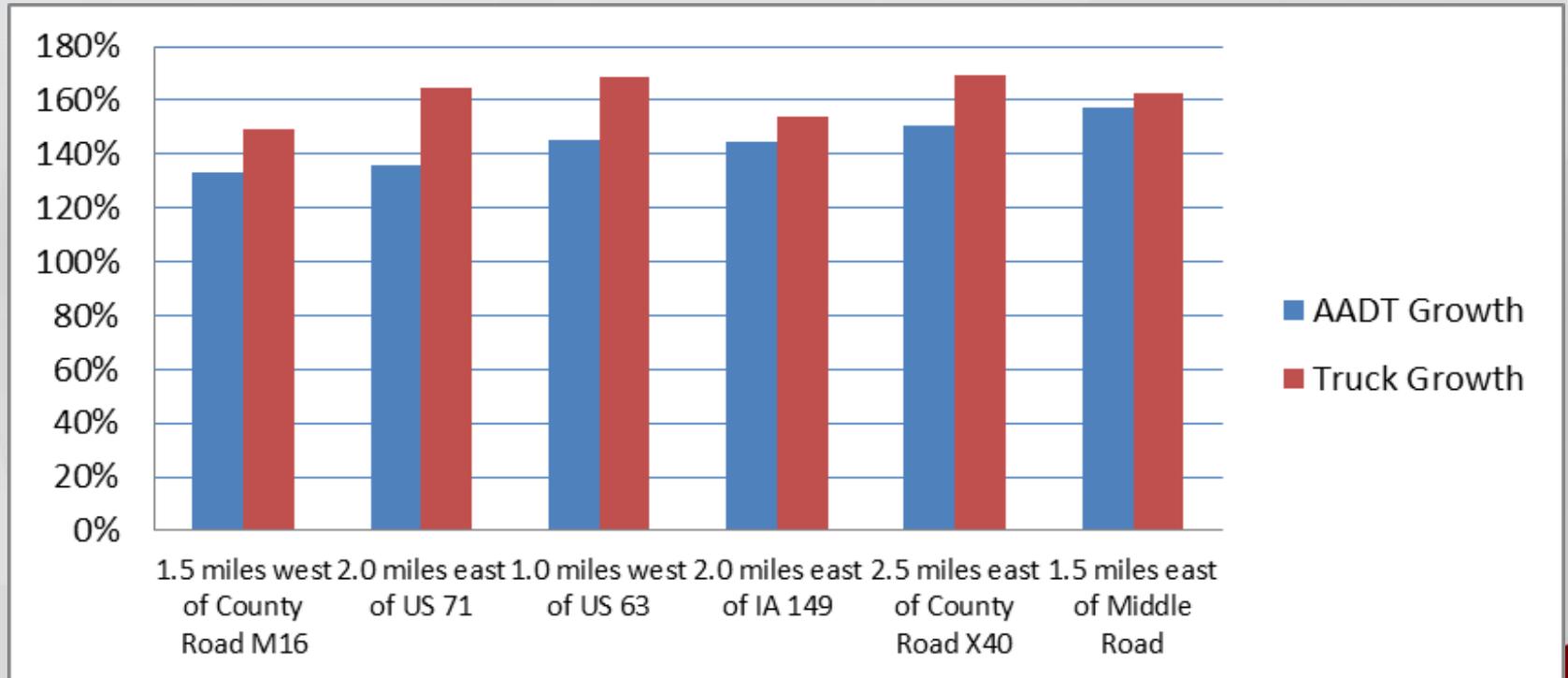
Route Type Split for Trucks



Projected Traffic Growth

| Location | 2015 | | 2040 | |
|-----------------------------------|------------|--------------|------------|--------------|
| | AADT (vpd) | Truck Volume | AADT (vpd) | Truck Volume |
| 1.5 miles west of County Road M16 | 24,441 | 8066 | 32,548 | 12,043 |
| 2.0 miles east of US 71 | 21,331 | 7039 | 28,944 | 11,578 |
| 1.0 miles west of US 63 | 27,320 | 8469 | 39,618 | 14,262 |
| 2.0 miles east of IA 149 | 32,352 | 10,029 | 46,800 | 15,444 |
| 2.5 miles east of County Road X40 | 34,421 | 11,359 | 51,926 | 19,213 |
| 1.5 miles east of Middle Road | 32,582 | 10,100 | 51,282 | 16,410 |

Relative Growth



Reasons to Consider Special Truck Treatments

- Trucks often do not have the ability to maintain speeds on long up-grades, and generally have slower acceleration and deceleration rates than passenger vehicles.
- The differences in size and operating abilities between the two types of vehicles increases the discomfort level in some car drivers.
- Peak hour congestion, primarily caused by commuters in cars, greatly impacts travel reliability and profitability of freight movement by trucks by reducing the consistency in trip travel times.
- Crashes involving light passenger vehicles and trucks have more severe consequences for the light vehicle occupants than do crashes involving only light vehicles.

Types of Special Truck Treatments

- Additional Travel Mode
- Required Speed Differential
- Truck Restriction
- Exclusive Facilities

Additional Travel Mode

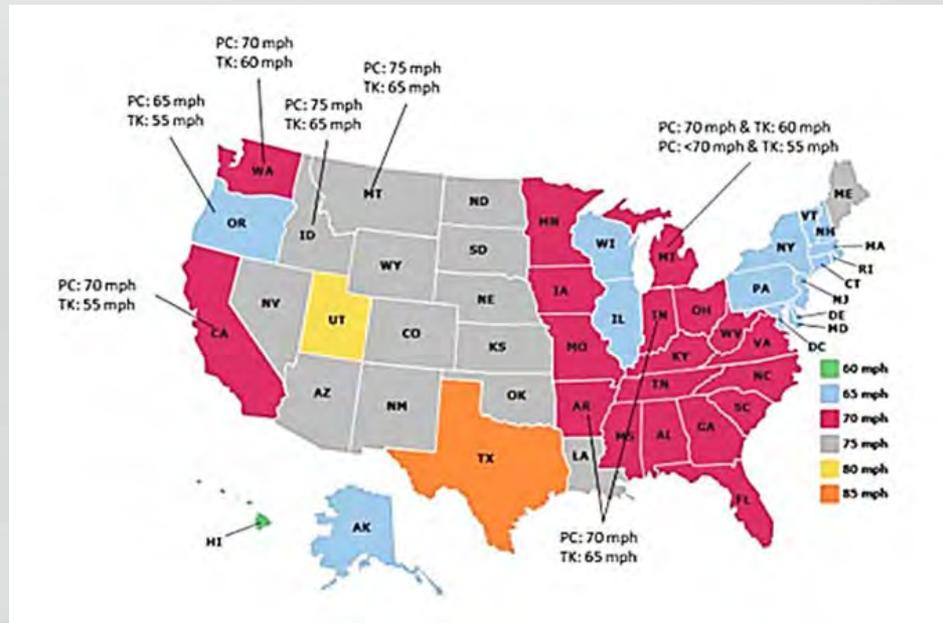


Suitable where roads/bridges can't be built

Duplicate mode costly to construct and maintain

Requires time to load/unload

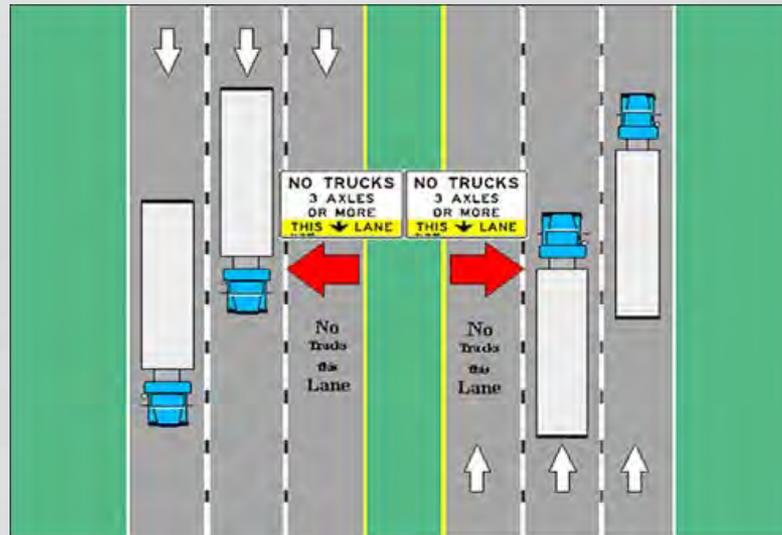
Speed Differential



Truck Speed limit typically 10-15 mph lower

Safety benefits inconclusive

Truck Restriction



Complete Restriction
Time Restriction
Lane Restriction – Most common

Exclusive Facility



Missouri DOT Preferred Configuration

I-80 in Iowa would require 6 General Purpose Lanes from US 169 to the east

Exclusive Facility



Reduced access to interchanges

Benefits of Truck-Only Lanes

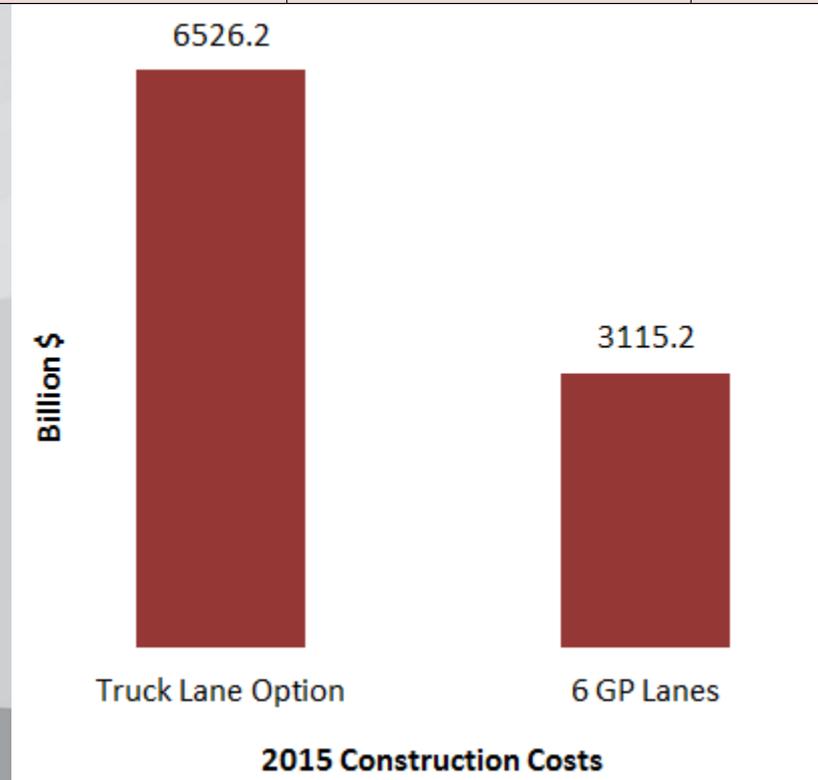
- the increased safety from separating the heavy and light vehicles;
- increased reliability of travel times for freight;
- reduced fuel consumption and air pollution associated with removing freight bottlenecks;
- improved operations for light vehicles;
- increased productivity to be gained with LCV; and
- the opportunity to utilize either the general-purpose lanes or the truck-only lanes as a parallel facility for incident management.

Longer Combination Vehicles

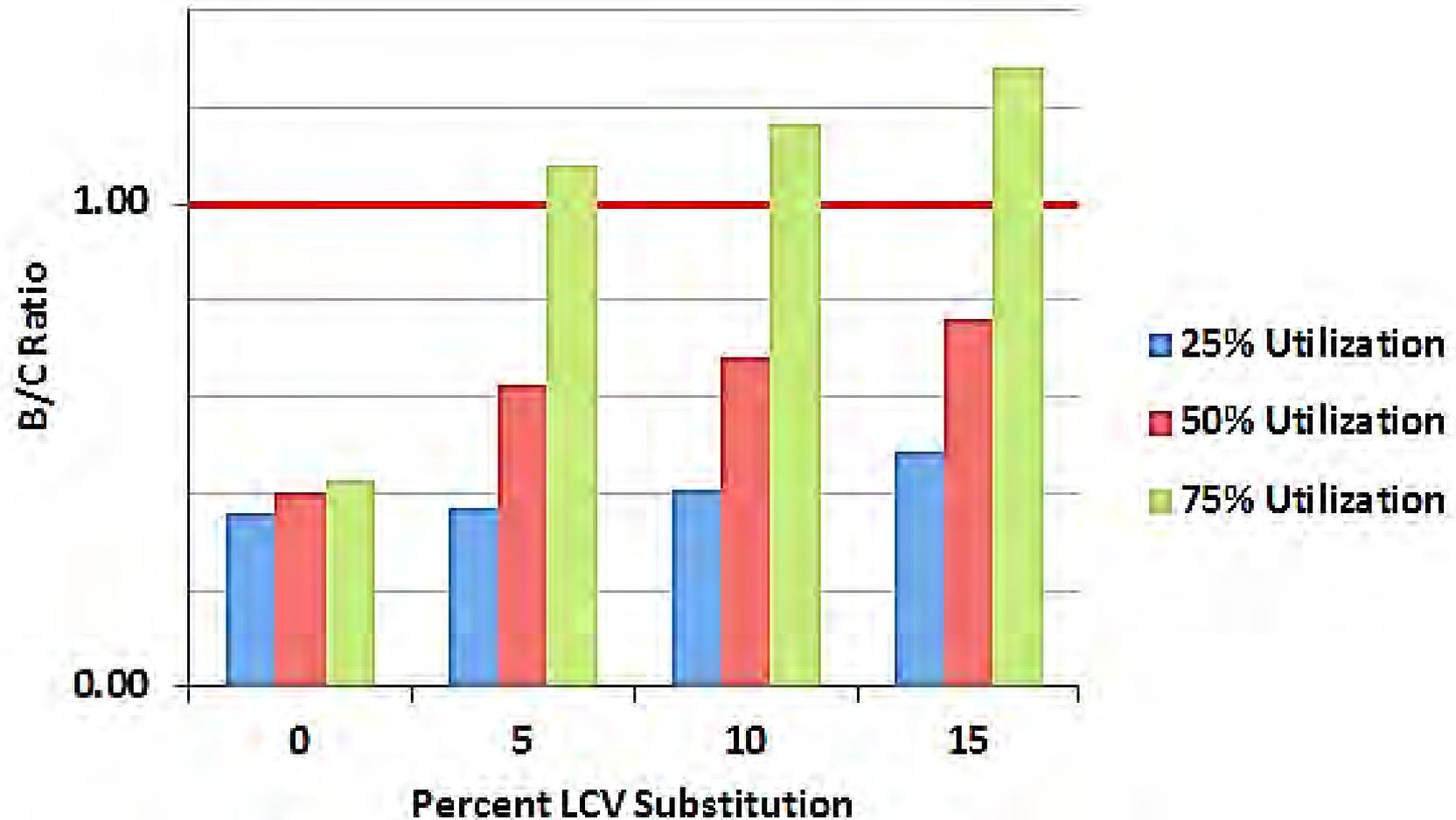


Cost of Truck-Only Lanes

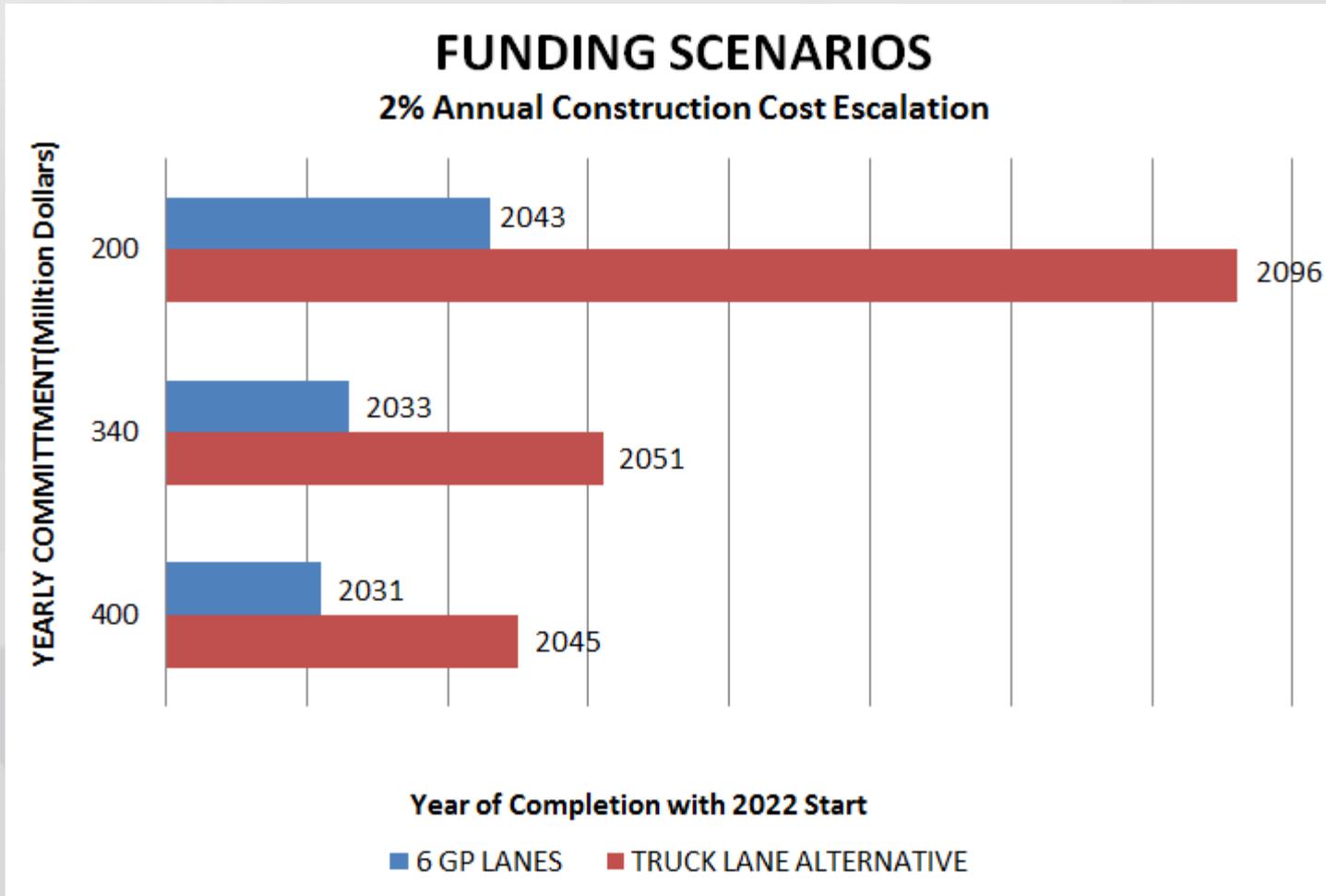
| Scenario | 2015 Construction Cost (per Mile) | 2012 Maintenance Cost (per Mile) ⁽¹⁷⁾ |
|-------------------------------------------------|-----------------------------------|--------------------------------------------------|
| 6 General Purpose Lanes | \$ 11,800,000 | \$ 34,400 |
| 8 General Purpose Lanes | \$ 13,200,000 | \$ 45,900 |
| 4 General Purpose Lanes plus 4 Truck-Only Lanes | \$ 23,400,000 | \$ 45,900 |
| 6 General Purpose Lanes plus 4 Truck-Only Lanes | \$ 25,500,000 | \$ 57,300 |



Benefit - Cost Comparison



Time to Construct



CONCLUSION

While there are definite benefits to truck-only lanes, the cost to construct would necessitate a financing method not used for roads in Iowa.

Options would include bonding or private financing.

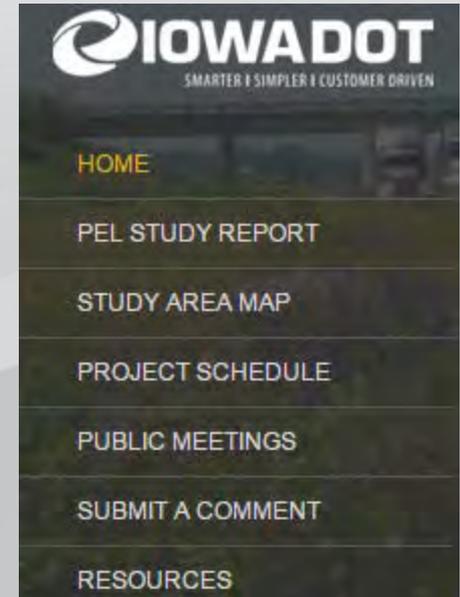
Public Outreach

Project Website

<http://www.iowadot.gov/interstatestudy/>

Purpose of the website:

- Source for the public, resource agencies, local officials, etc. to sign-up to and stay connected
 - **1,100 Subscribers**
- Early involvement in the transportation planning process
- I-80 system users' can share their opinions and fill out a survey
 - **2,700 surveys filled out**



Public Opinion

| | Strongly oppose | Somewhat oppose | Not sure/No opinion | Somewhat support | Strongly support | Total |
|---------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|---------------------|------------------|------------------|-------|
| Reducing the amount of existing infrastructure, such as roads connecting to the interstate, or the number of bridges | 25.01% 594 | 31.12% 739 | 29.14% 692 | 11.96% 284 | 2.78% 66 | 2,375 |
| Tolling as a way to help pay for interstate transportation projects | 45.69% 1,087 | 19.25% 458 | 9.84% 234 | 18.79% 447 | 6.43% 153 | 2,379 |
| Implementation of truck/semitruck restricted lanes (restrict trucks from using designated lanes) on the interstate system | 5.97% 142 | 8.08% 192 | 12.79% 304 | 34.08% 810 | 39.08% 929 | 2,377 |
| Removing county road bridges with low traffic volumes over the interstate system | 23.10% 549 | 21.83% 519 | 37.44% 890 | 13.29% 316 | 4.33% 103 | 2,377 |

RECOMMENDATION

Providing six lanes on I-80 across the state will greatly improve travel time reliability with respect to congestion through the rural areas of Iowa.

The impact of smart features such as connected or even autonomous vehicles will impact safety and capacity, likely requiring less concrete as we approach the middle of this century.