Tennessee's Intercity, Interstate Transportation Corridors

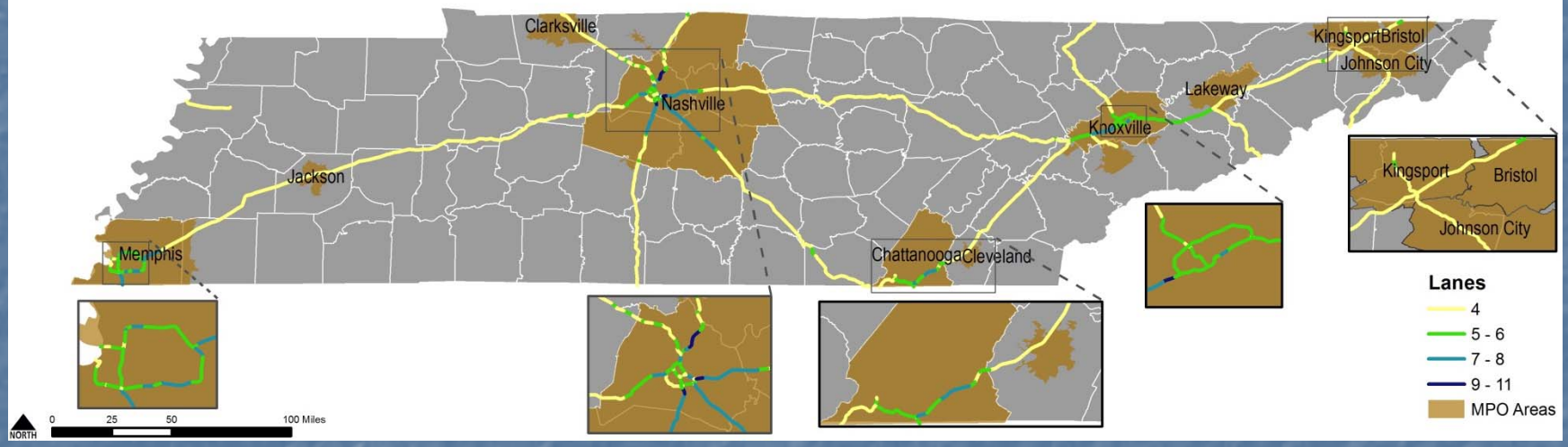
Time for Renewal

TACIR, February, 2013 : Nashville, Tennessee

Ben Smith

Interstate Highway Lanes in Tennessee

as of 1/12/2012



What is the state-level, strategic importance of the rural interstates?

- **2,812 lane miles (1.4% of statewide lane-miles) that carry 12.3% of statewide vehicle-miles of travel (VMT)**
- **Links Tennessee's businesses and industries together into an interconnected statewide economy**
- **Intercity travel is vital to trade and tourism which are 27% of State GDP (2009)**
- **Tennessee is eighth among the states for the number of paid employees and payroll at truck transportation establishments (76% of all rural and urban statewide truck trips are on Interstate Highways)**

The Threat to Tennessee's Internal Mobility

- 2005 TDOT Long-Range Transportation Plan
  - Total Rural and Small Urban Interstate Highways--550 miles of 687 miles congested in 2030
  - I-40/I-81 Memphis to Bristol--292 miles of 327 rural miles congested in 2030 (level of service D, E or F)
  - I-75 Chattanooga to Kentucky--105 of 105 rural miles congested in 2030 (level of service D, E or F)

The Mobility Threat According to TDOT's 2 Cross-State Corridor Studies

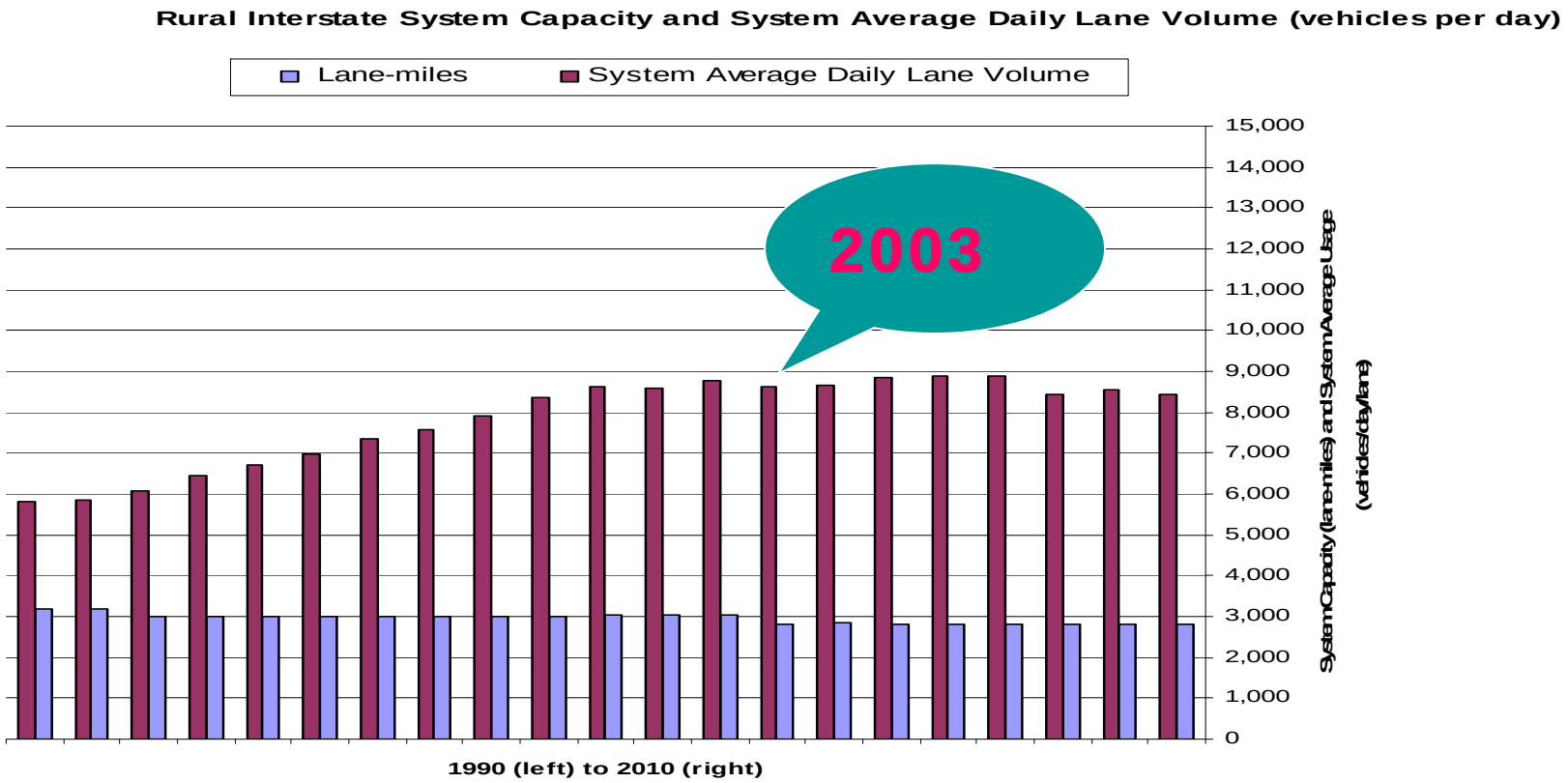
- I-40/I-81 Memphis to Bristol—217 miles of 327 rural miles congested in 2030 (level of service D,E or F) 75 Mile Reduction
- I-75 Chattanooga to Kentucky—61.5 miles of 105 rural miles congested by 2030 (level of service D,E or F) 43.5 Mile Reduction
- 278 problem miles of rural interstate versus 397 rural problem miles (2005 forecast)

Costs of Improvements to Avert the Problem

- **No Complete Cost Estimate is Available**
  - Only 2 of major cross-state Interstate corridor studies are complete (I-40/I-81 and I-75)
  - Completed studies do not provide proposed solutions for all sections congested by 2030
  - 156 rural and small urban miles congested by 2030 have no improvements proposed
  - **The partial-partial list of priority projects costs $6,300,000,000 between now and 2030**

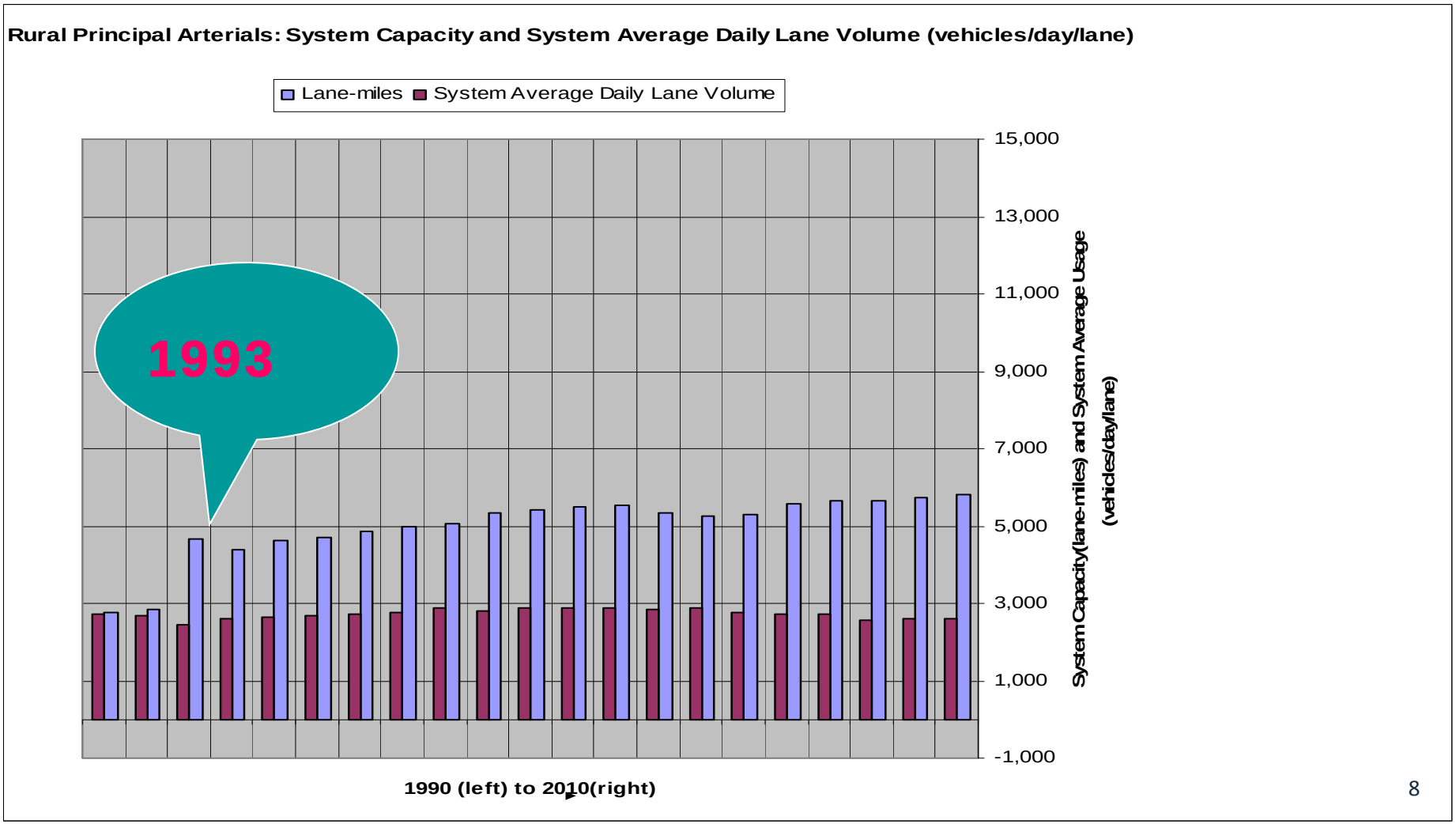
Systemic Reasons for the Upcoming Problem with our Rural Interstates

- No significant additions to rural interstate lane-miles



➢Tennessee's Higher Priority on Rural Principal Arterials

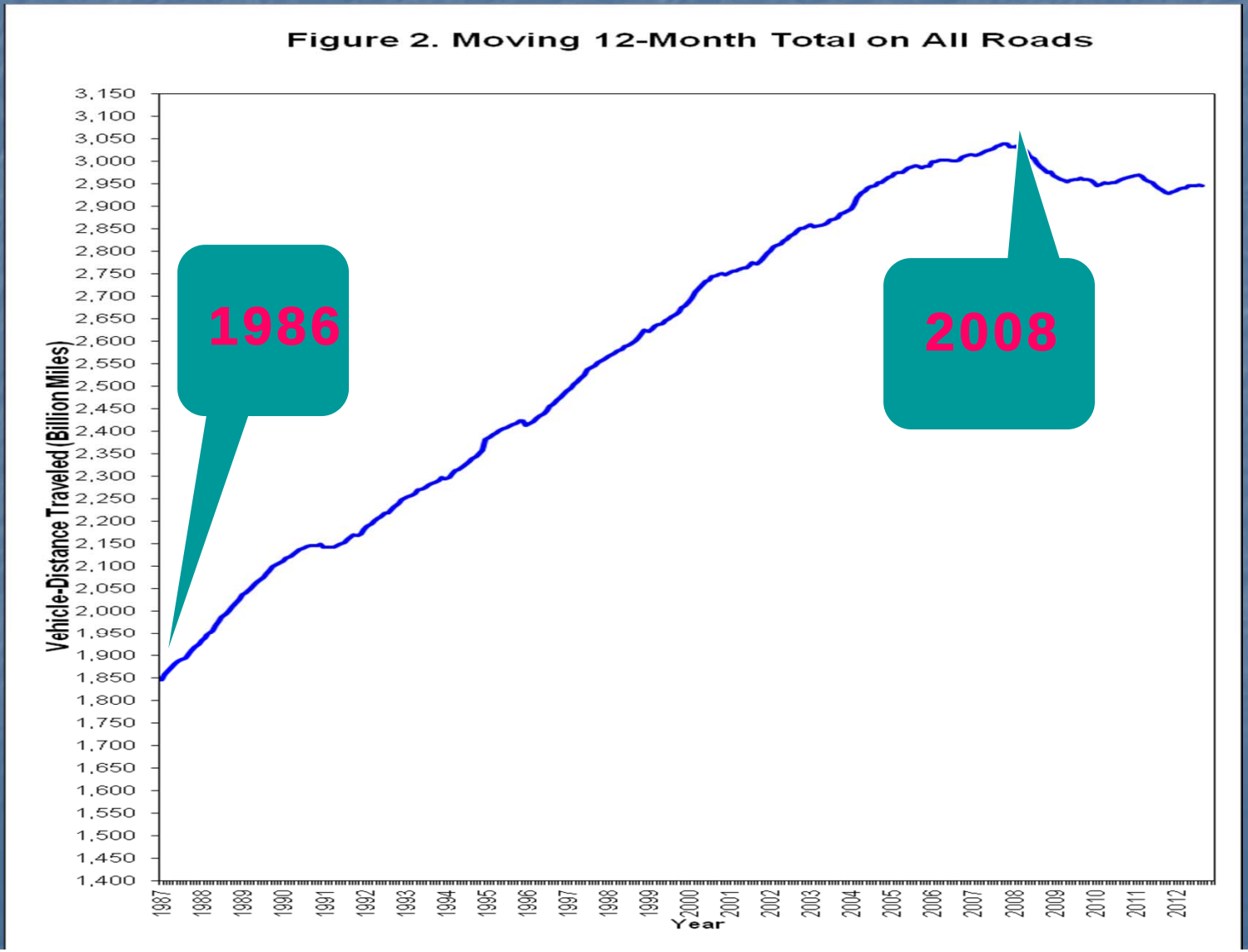
1990-2010 Added 3000 Lane-Miles



Population Concentrating Near Interstate Ramps

Range	Area (sq.mi.)	Population 1990	Density 1990	Population 2010	Density 2010	Increase
0-0.5 mi.	237	233,966	987	255,619	1,079	9%
0.5-2 mi.	2,276	1,135,078	499	1,381,949	607	22%
2-6 mi.	7,902	1,508,634	191	2,105,169	266	40%
6-10 mi.	6,592	657,128	100	924,892	140	41%
outside	25,136	1,342,379	53	1,678,476	67	25%

Great Recession Provides More Time



The Costs of the Problem and a Little More Time Warrant a Look from a Different Perspective

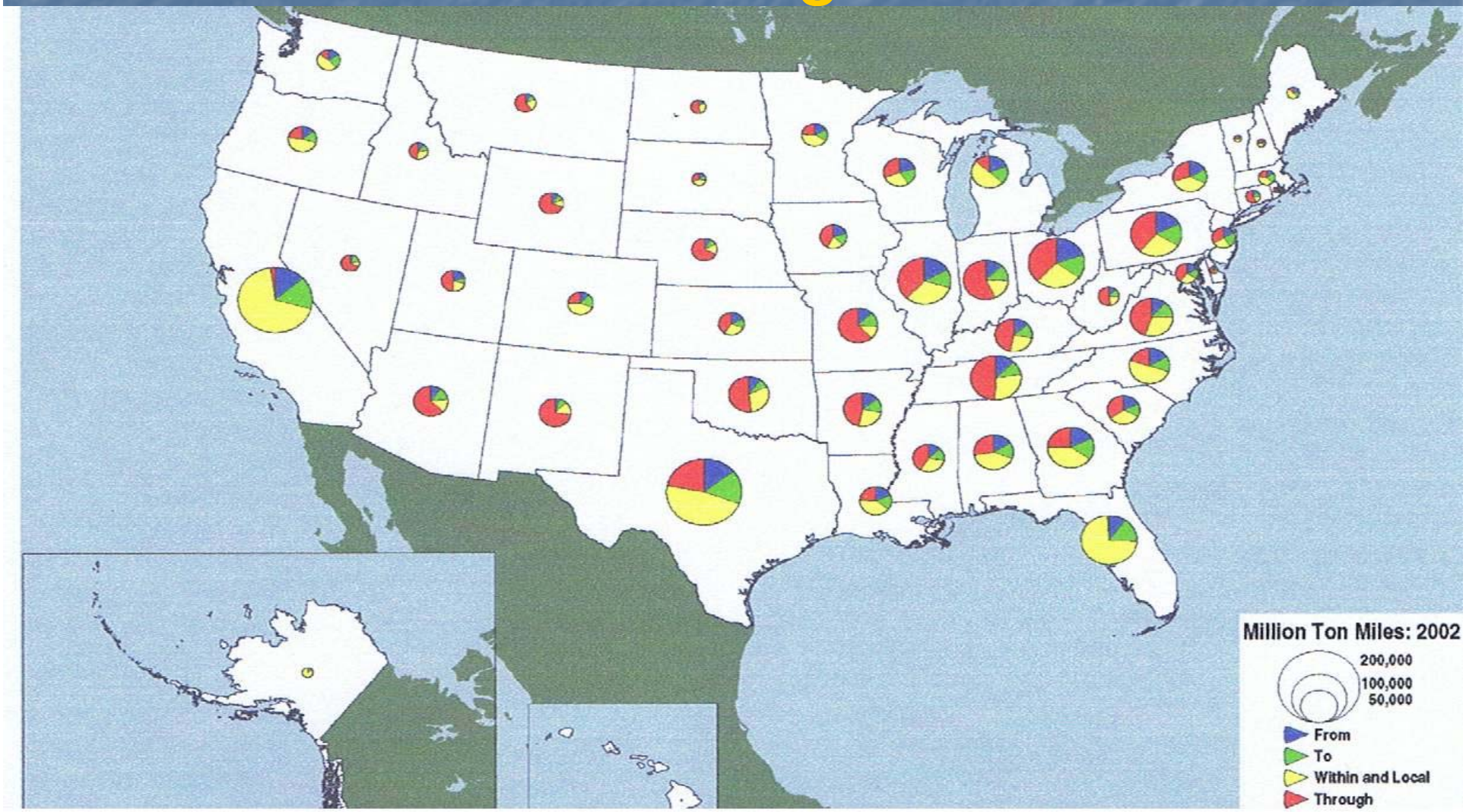
Traditional Approach: -*All Travel **Demands** are Equal*

- **Forecast future travel demands and try to provide adequate capacity for all demands**

New Perspective: ***All "Travel Demand Markets" are not Equal***

- **Invest to encourage in-state mobility demands**
- **Divert some demands to rail to conserve capacity**
- **Delay satisfying external, "pass-through" demands and seek investments from external sources**

Tennessee is a Focal Point of National Truck Freight Movements



In-state Heavy Truck Movements: A Critical In-state Mobility Market

- **I-40 Rural West Tennessee (based on a 2010 Decatur County 12,616 total heavy truck count)**

--5,500 heavy trucks per day estimated in-state

- **I-40 Rural Cumberland Plateau Area (based on a 2009 Roane County 10,817 total heavy truck count)**

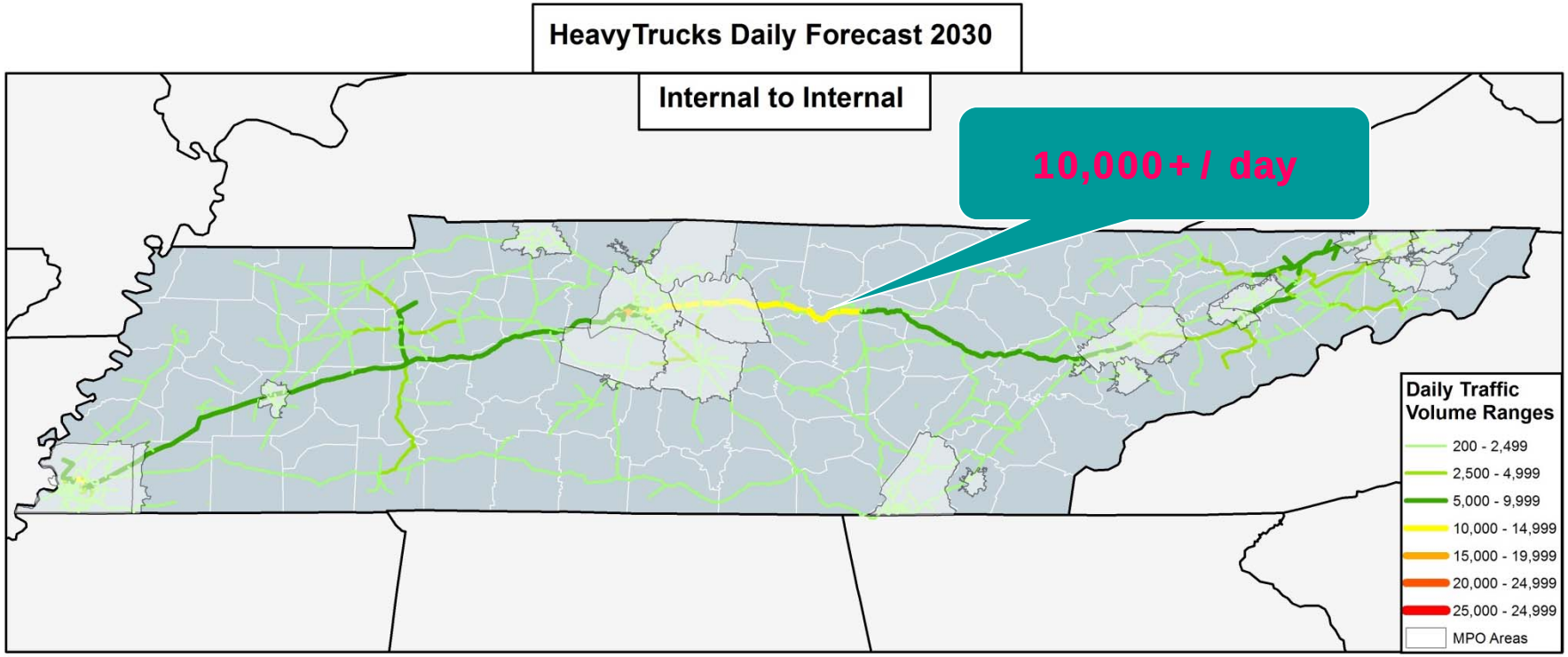
--5,300 heavy trucks per day estimated in-state

**based on 2003 travel model predictions of in-state truck movement percentage on selected I-40 section

6 Tennessee Travel Demand Markets

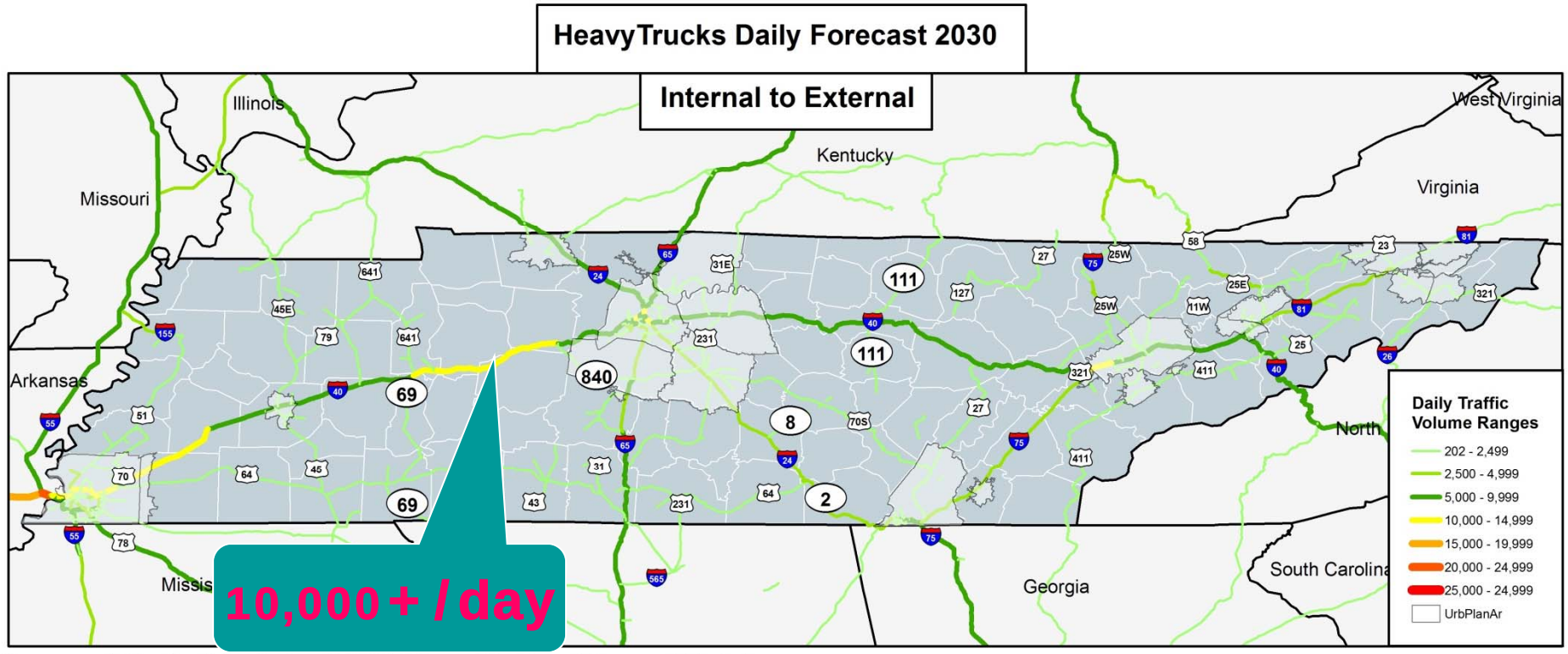
- (A)Trips Passing Through Tn.(external-external)
  - (A-1)Multi-unit and single-unit heavy trucks
  - (A-2)Passenger cars and light trucks
- (B) Trips With One End in Tn. (Import/Export)
  - (B-1)Multi-unit and single-unit heavy trucks
  - (B-2)Passenger cars and light-trucks
- (C) Trips Entirely Within Tn. (internal-internal)
  - (C-1)Multi-unit and single-unit heavy trucks
  - (C-2)Passenger cars and light trucks

In-State Heavy Truck Movements of Tennessee's Interconnected Businesses and Industries (2030)



Source: TACIR Staff Analysis of TDOT Statewide Travel Demand Model

Import/Export Truck Movements of Tennessee Business and Industry 2030



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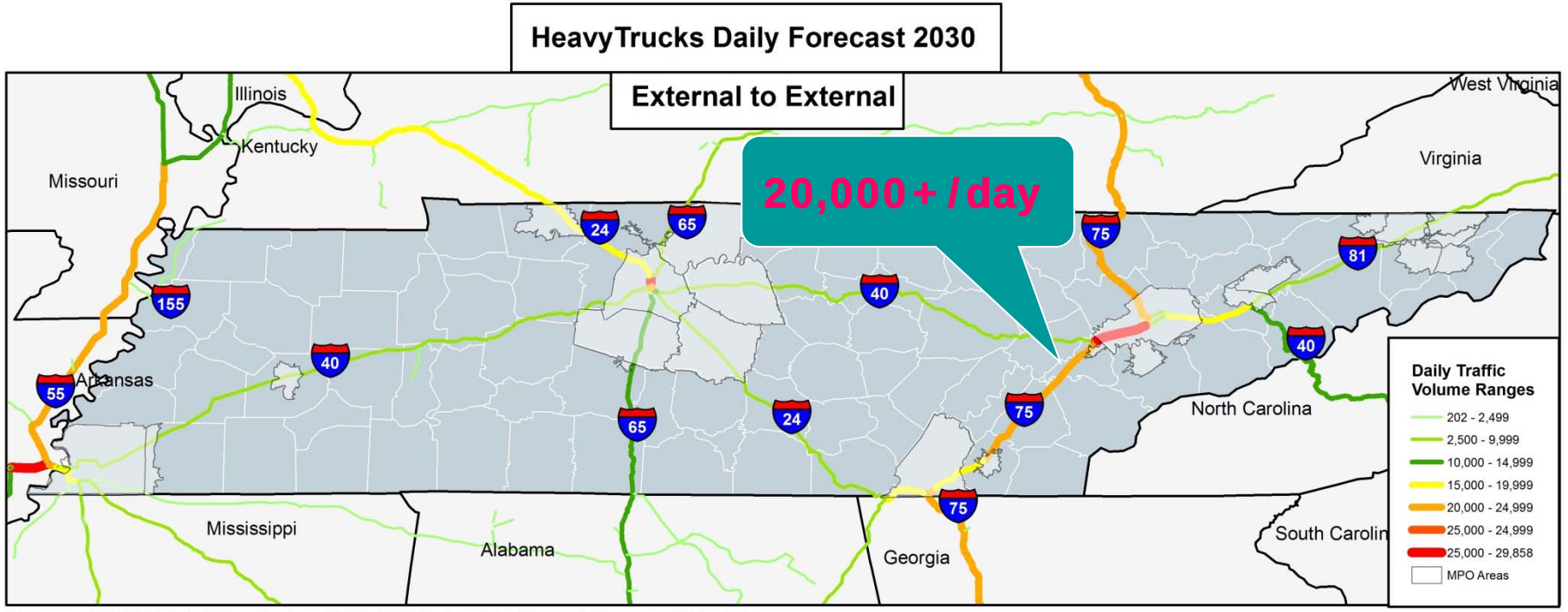
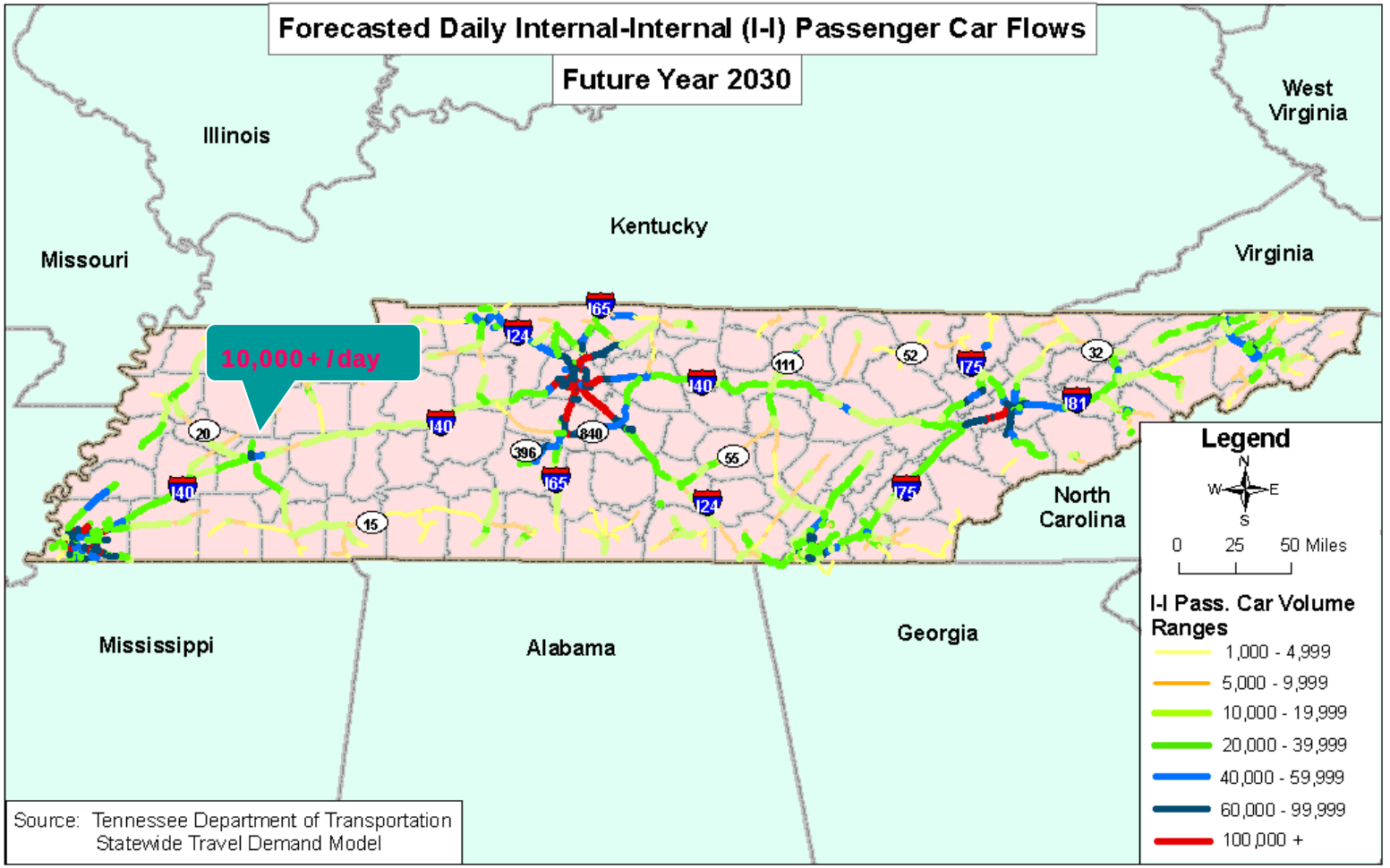
Pass-Through Truck Freight Flows (2030)



Source: TACIR Staff Analysis of TDOT Statewide Travel Demand Model

Internal Mobility Car Market (2030)



Recommendations: A Strategic Planning Focus on Rural and Small Urban Interstates

- Finish I-24 and I-65 Cross-State Studies
- Re-evaluate the previous I-40/81 corridor study due to the strategic importance to the in-state economy
- Prioritize projects and modal alternatives outside of MPO areas using criteria appropriate to intercity travel demands
- Bring all priority projects from all major rural interstate corridors into a Cash-flow Analysis (fiscally constrained plan)

Other Features of the Strategic Planning Focus

- Update the Statewide Travel Demand Model and re-calibrate total travel demands as well as component “travel demand markets”
- Tailor the development strategy for each corridor to respond to “travel demand markets”
- Develop the planning focus in concert with new MAP-21 requirements for system performance goal setting and asset management planning