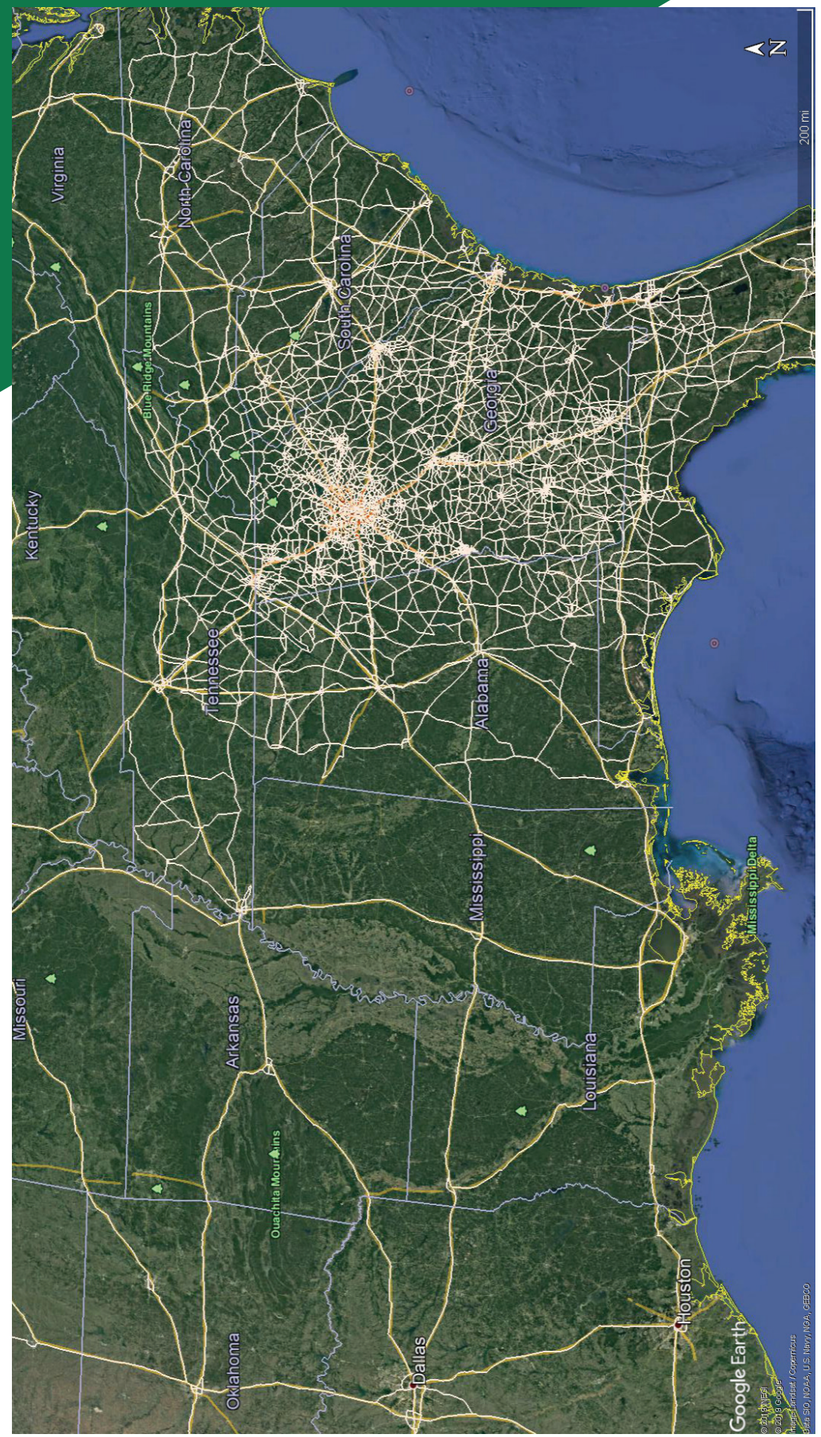
GEORGIA STATEWIDE TRAVEL DEMAND MODEL 2015/2050

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF PLANNING



GSTDM MODEL NETWORK IN GOOGLE EARTH

GDOT
Georgia Department of Transportation

HNTB

MORE ABOUT GSTDM 2015/2050

Developer
GDOT Office of Planning

Update Frequency
Approximately 5 years

Temporal Coverage
Daily passenger and truck traffic, AM/PM peak periods

Geographic Coverage
Continental U.S. with halo zone structure detailed coverage in Georgia

Transportation System Coverage
Roadway, Rail, Transit, Air

Model Years
Base Year 2015
Forecast Year 2050

Data Format
DBF database
CUBE outputs
GIS shapefiles
KMZ files

Geographic Resolution
- Traffic Analysis Zones for Georgia
- Census Tracts adjacent to Georgia
- Counties beyond those adjacent to Georgia
- Regional Planning Councils within adjacent five states: Tennessee, South Carolina, North Carolina, Florida, and Alabama

SUMMARY

Georgia Statewide Travel Demand Model (GSTDM) is a computerized transportation planning modeling package developed and maintained by the Georgia Department of Transportation (GDOT) Office of Planning. GSTDM is an integrated land-use and multi-modal transportation model that replicates existing travel patterns and forecasts future demand conditions based on data from various sources. The model consists of an integration of air and land transit, railroad, and highway system and generates trips for air and land transit, freight trucks, non-freight trucks and passenger cars. The built-in air, transit, passenger rail and high speed rail components provide options to evaluate the potential travel shift from highway system to other travel systems. Particularly the freight model component focuses on the commodity flows on the highway and rail systems that account for more than 90 percent of total commodity flows in Georgia. The model has capability to examine travel times and congestion, as well as freight planning and good movements.

GOALS

To assist in multimodal transportation planning for passengers and freight, in particular for long distance and rural travel, and to evaluate the impacts of changes to:

- Roadway: new locations, widenings, roadway functional classification changes, road closures
- Land use: residential, commercial, freight related developments (i.e. port expansion, inland ports addition, etc.), and many others
- Provision of multi-modal transportation systems: roadway, rail, air, and transit

POTENTIAL APPLICATIONS

- Statewide planning – statewide transportation plan, statewide freight and logistic plan, state rail plan, etc.
- Performance metrics (i.e. travel time, level of service, traffic volumes, delay and etc.)
- Project benefit-cost analysis
- Infrastructure investment decisions
- Congestion management
- Cross-regional corridor studies
- Regional transportation plan scenario analysis
- Multi-modal transportation scenario analysis
- Economic development and transportation impact analysis
- Inputs to air quality analysis
- Trip origin-destination analysis
- Inputs to design traffic forecasts

2015 ENHANCEMENTS

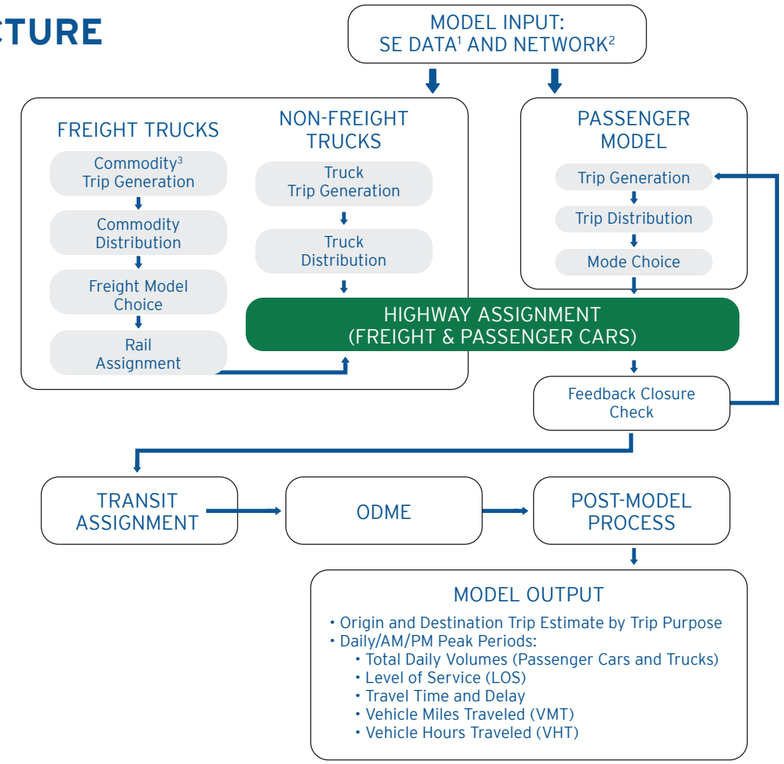
- Socioeconomic Data Reconciliation
- Model Network Coverage Expansion
- Model Network Curvature Improvements
- Freight Module Improvements
- Enhancement of Long-Distance Travel Forecasts
- Development of Time-of-Day Post Process Assignment
- Highway Assignment Module Updates
- Networks in Geodatabase and KMZ formats
- Improvements to Detailed Model Documentation

GSTDM STRUCTURE

1 - Socioeconomic (SE) data source: US Census for population and median household income; InfoGroup, Department of Labor and US Bureau of Economic Analysis (BEA) for employment by categories, 2050 forecast data from the Governor's Office of Planning and Budget (OPB) and the Regional Economic Models, Inc. (REMI) model.

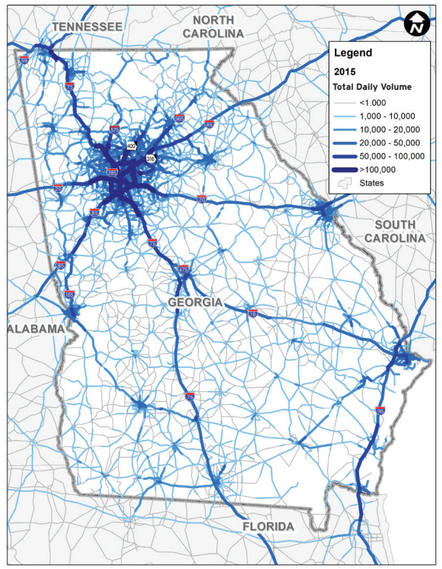
2 - Network data source: GDOT 2015 Roadway Characteristics (RC) dataset, Highway Performance Monitoring System (HPMS), Google Map images.

3 - Eighteen (18) commodity groups are used for freight trip generation. A commodity is a raw material used in the production process to manufacture a finished good.



2015 GSTDM OUTPUT

2015 Total Daily Volumes



2015 Total Daily Truck Volumes