

DRAFT
**Recommendations for the
Brunswick County Comprehensive
Transportation Plan**

November 5, 2007
Revised June 12, 2008

NOTE: *Recommendations from existing transportation plans are attached as an addendum to the following recommendations.*

Highway Map

Freeways

- ❑ I-74*: TIP Project R-3436 (Turnpike Project): Proposed new freeway from Columbus County to South Carolina State Line.

Interchanges are recommended at the following locations: NC 211 (northern part of county), Proposed I-74 / I-140 Connector, Royal Oak Road (SR 1345), NC 130, NC 904, and Hickman Road (SR 1303).

Grade separations are recommended at the following locations: Old CC Road, Little Macedonia Road (SR 1343), Makatoka Road (SR 1342) proposed New Briton Road Extension, Pea Landing Road (SR 1304), Gwynn Road, No. 5 School Road (SR 1305), and Ash-Little River Road (SR 1300).

- ❑ US 74/76*: Upgrade roadway to freeway standards from Columbus County to the MPO boundary.
- ❑ Proposed I-74 / I-140 Connector: Proposed new location facility from the Proposed I-74 Corridor (TIP Project R-3436) to the Wilmington MPO Planning Boundary. It is recommended that the Wilmington MPO study and incorporate this new facility into its Long Range Transportation Plan by connecting it to the Proposed I-140 Corridor.

Interchanges are recommended at the following locations: NC 211 and Green Hill Road (SR 1410).

Expressways

- ❑ US 17*: Upgrade roadway to expressway standards from the MPO Planning Boundary to the South Carolina State Line.
- ❑ NC 87*: Widen to a multi-lane facility from US 17 to Wildwood Drive at the northern Boiling Spring Lakes (BSL) town limits and from the BSL southern town limits to NC 211. NC 87 is recommended to be re-routed onto the proposed expressway (referred to as the BSL Parkway in the 2002 BSL Thoroughfare Plan) facility just west of the existing NC 87.

* *These facilities are NC Strategic Highway Corridors.*

Boulevards

- ❑ NC 211: Widen to a multi-lane facility from US 17 to E. Moore Street (in Southport).
- ❑ NC 133: Widen to a multi-lane facility from the MPO boundary to NC 87 and from NC 87 to NC 211.
- ❑ **NC 87: Widen to a multi-lane facility from Wildwood Drive at the northern Boiling Spring Lakes (BSL) town limits to the BSL southern town limits.**

Other Major Thoroughfares

- ❑ TIP Project R-2245 (2nd Bridge to Oak Island): Proposed multi-lane facility from NC 211 to Oak Island Drive.
- ❑ TIP Project R-3324 (Long Beach Road Extension): Proposed 2-lane facility from NC 87 to NC 211.
- ❑ TIP Project R-3434 (Midway Road & Galloway Road): Widen to a multi-lane facility from NC 211 to US 17 BYP.
- ❑ Oak Island Drive: Widen to a multi-lane facility from proposed TIP Project R-2245 to Country Club Drive (NC 133).
- ❑ Long Beach Road / Country Club Drive / NC 133: Widen to a multi-lane facility from Oak Island Drive to NC 211.
- ❑ E. Moore Street / NC 211 (*Substandard Design*): Widen to two 12-foot lanes from NC 211 / N. Howe Street to the end of state maintenance.
- ❑ US 17 BUS (Bolivia): Widen to a multi-lane facility from Midway Road (SR 1500) to US 17.
- ❑ NC 130: Widen to a multi-lane facility from US 17 BUS to the end of state maintenance and from US 17 to McMilly Road (SR 1320).
- ❑ US 17 BUS / Main St. (Shallotte): Widen to a multi-lane facility from US 17 W to US 17 E.
- ❑ NC 904 (*Substandard Design*): Widen to two 12-foot lanes from the Columbus County Line to Ash-Little River Road (SR 1300).
- ❑ NC 904: Widen to a multi-lane facility from Ash-Little River Road (SR 1300) to NC 179 (Beach Drive).
- ❑ NC 179: Widen to a multi-lane facility from the South Carolina State Line to NC 904 (Seaside Road) and from Ocean Isle Beach Road (SR 1184) to US 17.
- ❑ NC 179 BUS: Widen to a multi-lane facility from NC 179 to NC 904 (Seaside Road).
- ❑ Ocean Isle Beach Road (SR 1184): Widen to a multi-lane facility from US 17 to NC 179 (Beach Drive).

Minor Thoroughfares

- ❑ TIP Project R-3432: Proposed 2-lane facility from Old Georgetown Road (SR 1163) to NC 179.
- ❑ Old Georgetown Road (SR 1163): Widen to two 12-foot lanes from NC 904 to Ocean Isle Beach Road (SR 1184).

- ❑ Mt. Pisgah Road (SR 1130): Widen to two 12-foot lanes from US 17 to NC 130.
- ❑ Stone Chimney Road (SR 1115): Widen to two 12-foot lanes from NC 211 to Old Ferry Connection (SR 1115).
- ❑ Old Ferry Connection (SR 1115): Widen to two 12-foot lanes from Stone Chimney Road (SR 1115) to Sabbath Home Road (SR 1120).
- ❑ Sabbath Home Road (SR 1120): Widen to two 12-foot lanes from Old Ferry Connection (SR 1115) to NC 130.

Minor Thoroughfares (*Substandard Design*): Widen to 24' pavement (2-12' lanes) projects.

- ❑ Ash-Little River Road (SR 1300): From NC 130 to Hickman Road (SR 1303).
- ❑ Calabash Road (SR 1300): From Hickman Road (SR 1303 to US 17).
- ❑ Exum Road (SR 1340): From NC 130 to Makatoka Road (SR 1342).
- ❑ Camp Branch Road (SR 1340): From Makatoka Road (SR 1342) to NC 211.
- ❑ Makatoka Road (SR 1342): From Exum Road (SR 1340) to Sellars Road (SR 1344).
- ❑ Royal Oak Road (SR 1345): From Makatoka Road (SR 1342) to US 17.
- ❑ Sellars Road (SR 1344): From Makatoka Road (SR 1342) to US 17.
- ❑ Turnpike Road (SR 1129): From Mt. Pisgah Road (SR 1130) to Stone Chimney Road (SR 1115).

Note: Planning is currently underway for transportation improvements that would serve the NC International Terminal. Further analysis is required to determine the exact location of a connector to link the port terminal and the consolidated (BHI and Southport/Ft. Fisher) ferry landing to the larger public transportation system, and a dedicated four-lane limited access transportation corridor to link the connector to the interstate highway system.

Bicycle Map

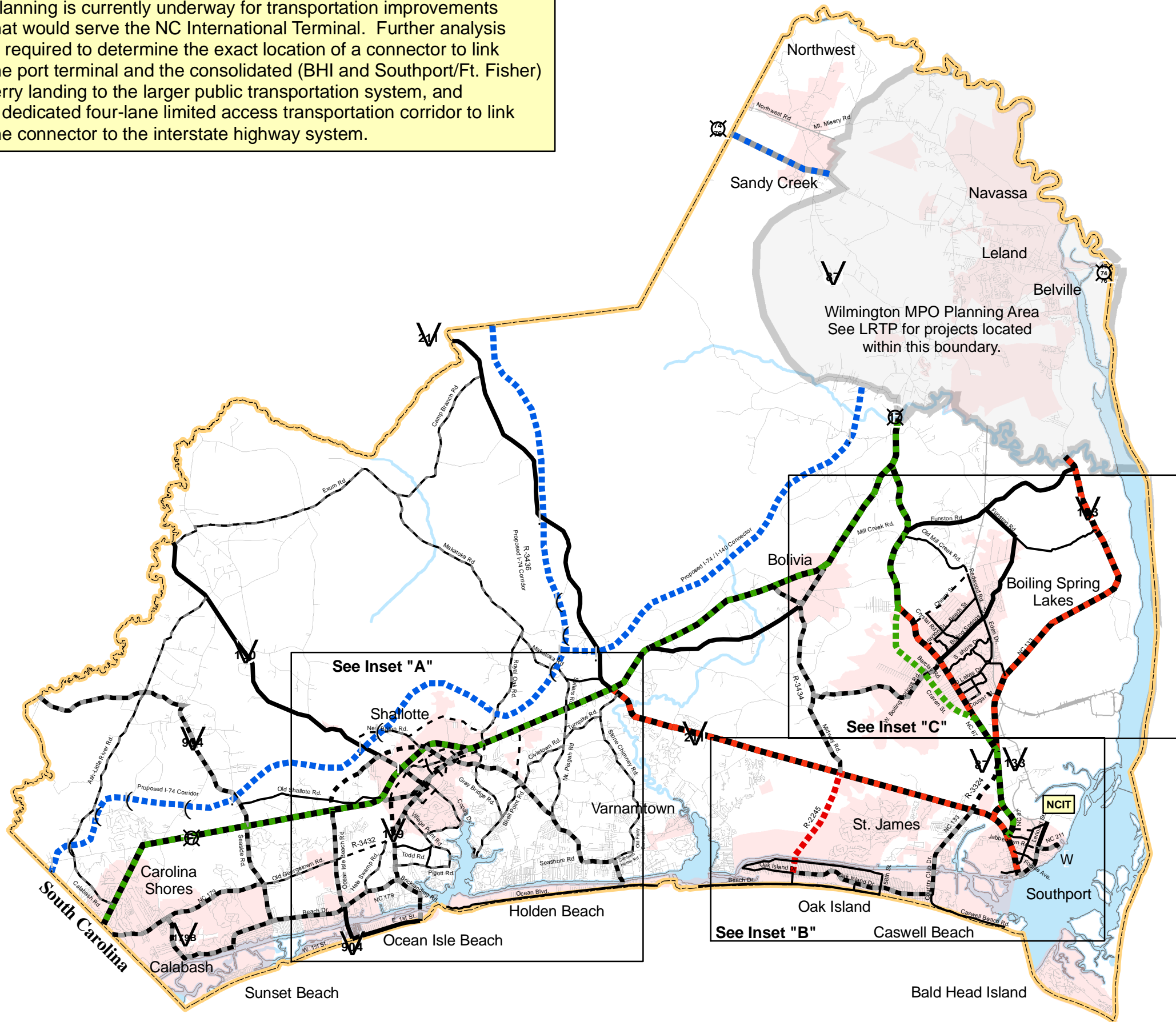
In accordance with AASHTO, roadways identified as bicycle routes should incorporate the following standards as roadway improvements are made and funding is available:

- ❑ Curb & gutter sections require at minimum 4-ft. bike lanes or 14-ft. wide outside lanes
- ❑ Shoulder sections require a minimum 4-ft. paved shoulder.
- ❑ All bridges along roadways where bike facilities are recommended shall be equipped with 54” railings.

Public Transportation & Rail Map

There are no planned improvements for public transportation or rail included in this plan. Further coordination will be necessary with the NC Ports Authority as their planning effort progresses on the proposed NC International Terminal.

Planning is currently underway for transportation improvements that would serve the NC International Terminal. Further analysis is required to determine the exact location of a connector to link the port terminal and the consolidated (BHI and Southport/Ft. Fisher) ferry landing to the larger public transportation system, and a dedicated four-lane limited access transportation corridor to link the connector to the interstate highway system.



Highway Map



Brunswick County Comprehensive Transportation Plan **DRAFT**

Plan date: November 5, 2007
Revised: June 12, 2008

- Freeways**
 - Existing
 - - - Needs Improvement
 - · · Recommended
- Expressways**
 - Existing
 - - - Needs Improvement
 - · · Recommended
- Boulevards**
 - Existing
 - - - Needs Improvement
 - · · Recommended
- Other Major Thoroughfares**
 - Existing
 - - - Needs Improvement
 - · · Recommended
- Minor Thoroughfares**
 - Existing
 - - - Needs Improvement
 - · · Recommended

- Existing Interchange
 - | Proposed Interchange
 - (Existing Grade Separation
 - (Proposed Grade Separation
- 0 1 2 4 6 Miles



Topsail Area CTP

This area includes Holly Ridge, Topsail Beach, North Topsail Beach, and Surf City. The planning area includes the entire Topsail Island and extends along US 17 from NC 172 to Sloop Point Road. It also includes all of the Holly Ridge town limits which extend the boundary along NC50 north of US 17. This planning area is more complex than normal planning areas due to the unique nature. It has two ending points (i.e., the island) that do not operate as normal external stations. This is also a big tourist destination. These two variables have made modeling the area extremely difficult and time consuming.

The steering committee recently agreed on future projections regarding the area as it continues to change its growth patterns from traditional ways. Capacity deficiencies have been developed and will be discussed at the upcoming June 24, 2008 steering committee meeting. The committee will discuss the capacity issues, the Strategic Highway Corridors and bicycle and pedestrian issues. NCDOT will also be meeting with each planning board this summer to discuss the recommendations and implementation.

This plan includes the following highway facilities:

US 17 from Sloop Point Road to NC 172

NC 210 from US 17(south) to NC 172

NC 50 from north of Holly Ridge to Topsail Beach

Old Folkstone Road from US 17 to NC 210

Holly Ridge Road, Tar Landing Road, and Sound Road

NC 172 from US 17 to NC 210

Please check the website for additional information:

<http://www.ncdot.org/doh/preconstruct/tpb/planning/TopsailIsland.html>

The Safari Guide to the Modeling Jungle!

Tour Guide: Joshua Mello



What will we see on the tour?

What is a model is?

Model's importance in the world?

How do we use models?

How do we get models?

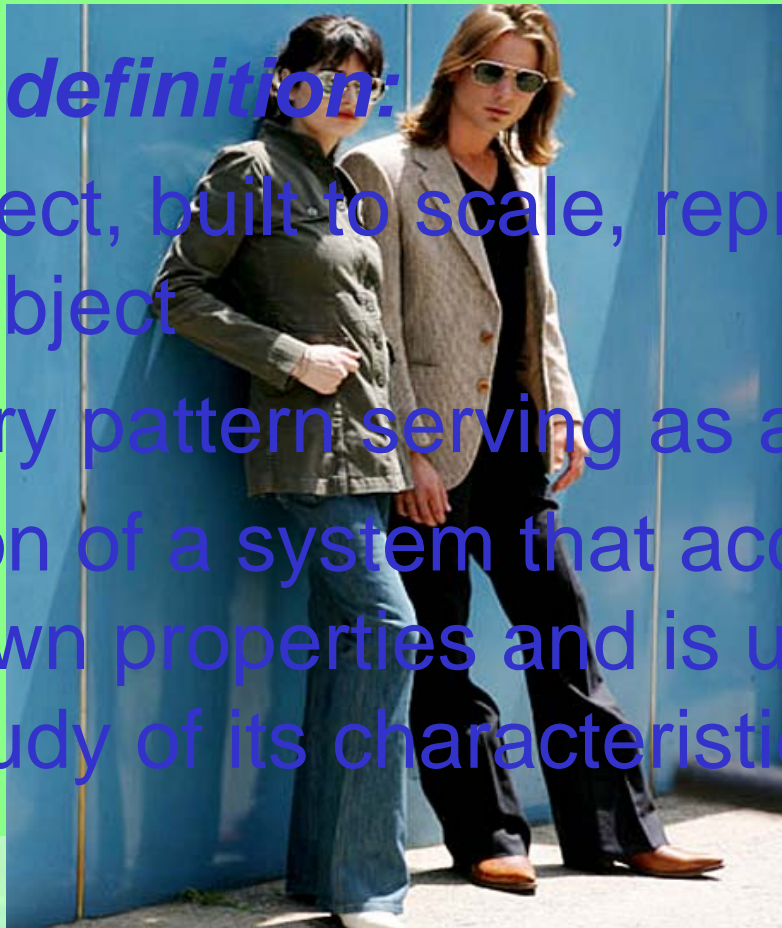
Final thoughts

Do we know what a model is?

Dictionary definition:

- Small object, built to scale, representing another object
- preliminary pattern serving as a plan
- description of a system that accounts for all of its known properties and is used for further study of its characteristics

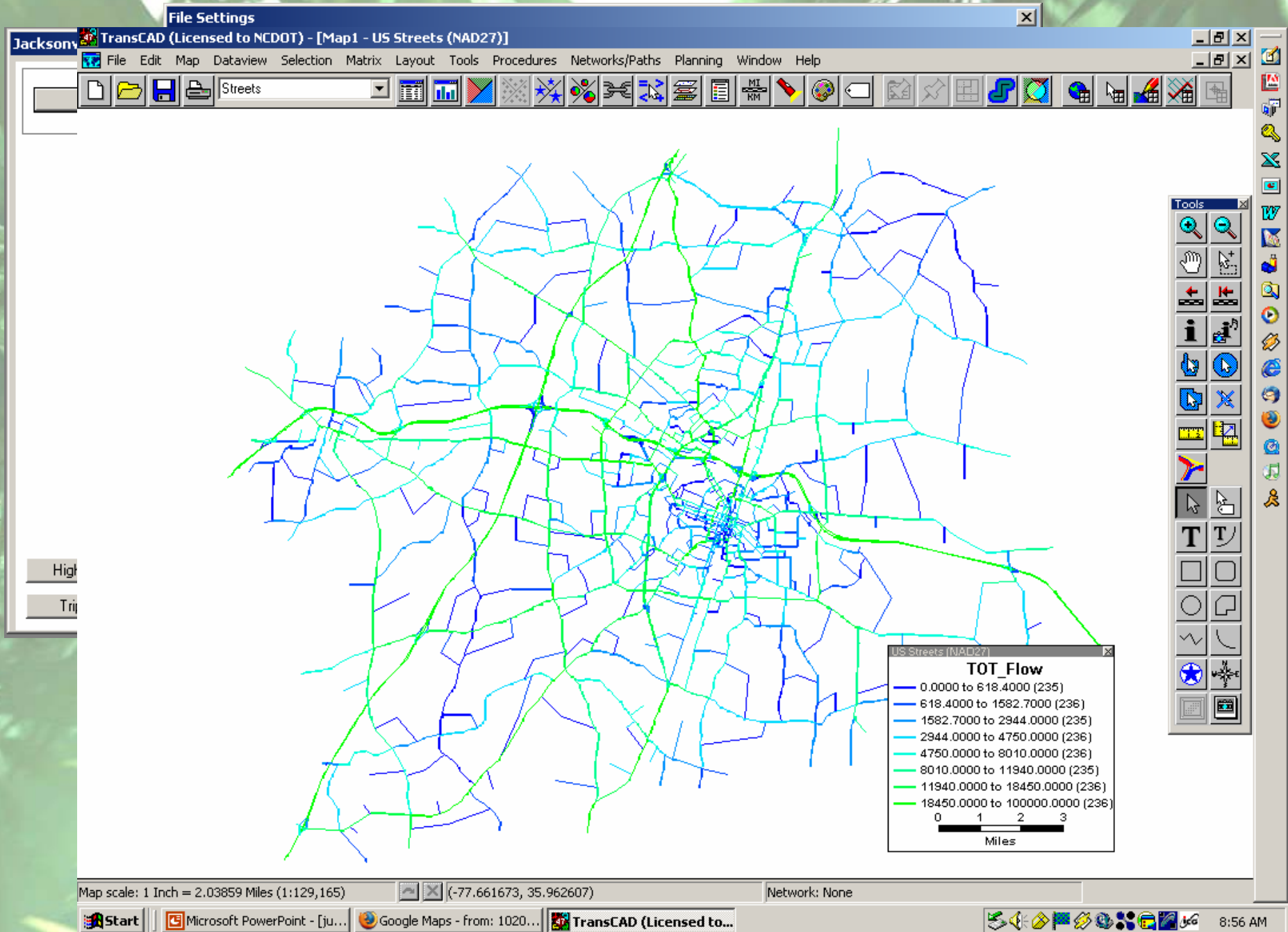
Nope!!




What does model mean to "us?"

- A series of mathematical equations that represent how choices are made when people travel
- Basically: where are people coming and going, and how are they getting there!

What does one look like?



Model's importance in the world

- *Models are important because (some) transportation plans & investments are based on the projections models make about future travel**
- *These model numbers HELP to determine how lots of transportation*  *are spent*

**Beimborn & Kennedy, Ph.D, "Making Transportation Model Work for Livable Communities"*

Model's importance in the world

- They began in the 1950s and they are one of the only mathematical methods used to forecast the future
- Everyone in this room has been affected by a model



How do we use them?

- **Analyze the transportation element of comprehensive plans** (travel demand)
- **Evaluate air quality impacts**
- **Design multi-million dollar transportation facilities**
(EIS/MIS: determine locations and forecasts)
- **Identification of future transportation needs**
- **Impacts of proposed land use changes**
(Your inputs may change your transportation outputs)

How do we develop models?



– Tour based models



How do we develop models?

- **Data Generally Used**

Housing data

Employment data

US Census data

Travel behavior data

Roadway data

Transit inventory

Traffic counts

Speed study data

How do we develop models?

Most widely used is the four-step model process

Trip generation

Trip distribution

Mode choice

Traffic assignment

Trip generation

How many trips occur in the area?

Non-resident trips



Shopping trips

School trips

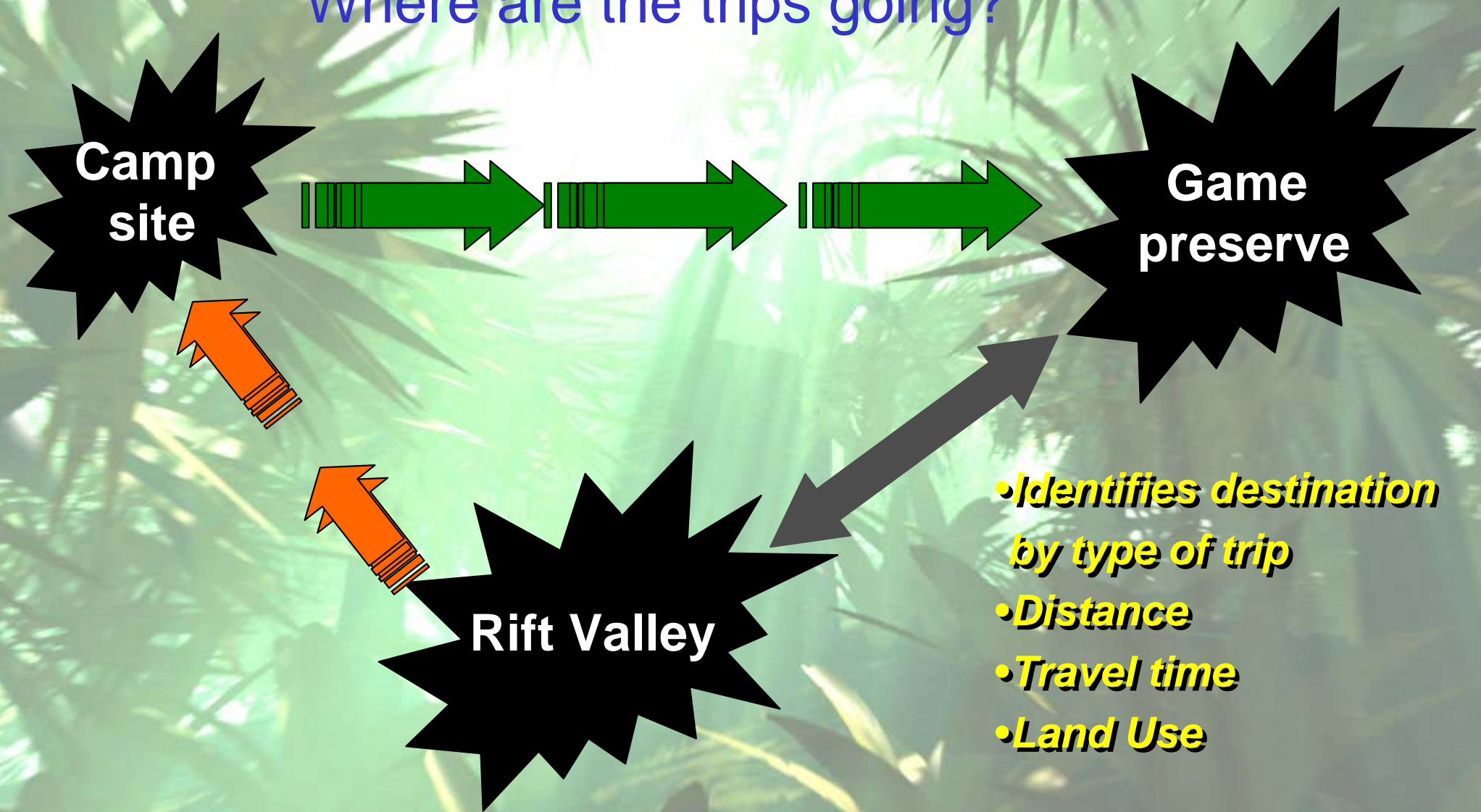


Commercial vehicle trips

Work trips & more

Trip distribution

Where are the trips going?



Mode choice

How do you travel?



Walk



Bike

Transit



Auto



Traffic assignment

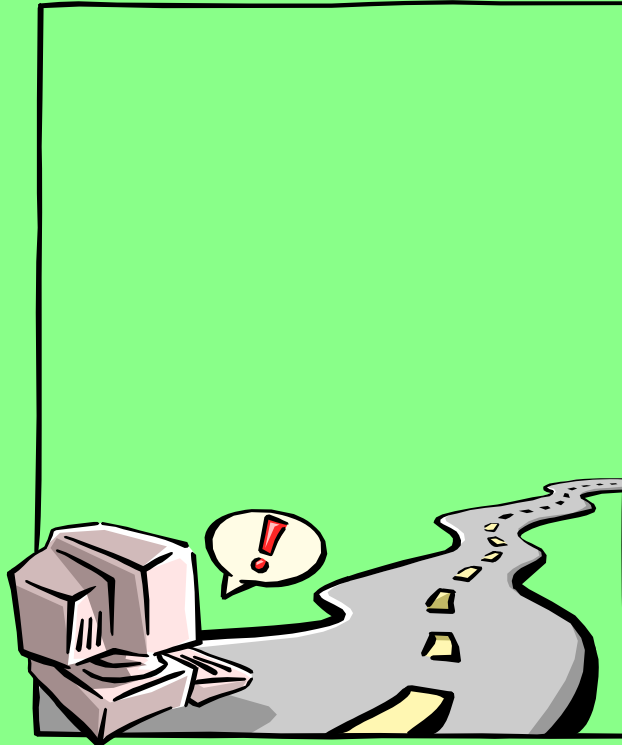
What path do you use to get there?

- **Highway**
- **Transit**
- **Minimum path**
 - **Probability**
 - **Congestion**



Final thoughts

Travel models: A means of predicting the unpredictable



No model can take into account all of the factors that affect travel behavior and thus no model can perfectly replicate or predict reality!

Final thoughts

Not all safaris (models) are the same

Unique features

Different levels of activity

Different wildlife opportunities

Various living accommodations



Final thoughts

Merely a statistical replication of human behavior that assumes:

- **everyone acts rationally**
- **demographic forecasts are reasonable**
- **existing conditions are accurately reflected**
- **external factors are known and under our control**

“As far as the laws of mathematics refer to reality, they are not certain, and as far as they are certain, they do not refer to reality.”

-Albert Einstein-

What do models provide us?

Travel demand models provide...

- An isolated representation of a real world process
- A means to systematically explore assumptions and complex systems
- A check on judgment and intuition
- A decision support tool NOT a provider of the “answers”



The Safari Guide to the Modeling Jungle!

Thanks for taking the tour!!

ANY QUESTIONS?

Useful Links:

http://www.scag.ca.gov/modeling/pdf/1859_InsideBlackBox.pdf

<http://ncdot.org/planning/tpb/SERVICES/ModelResearchDevelopment.html>