



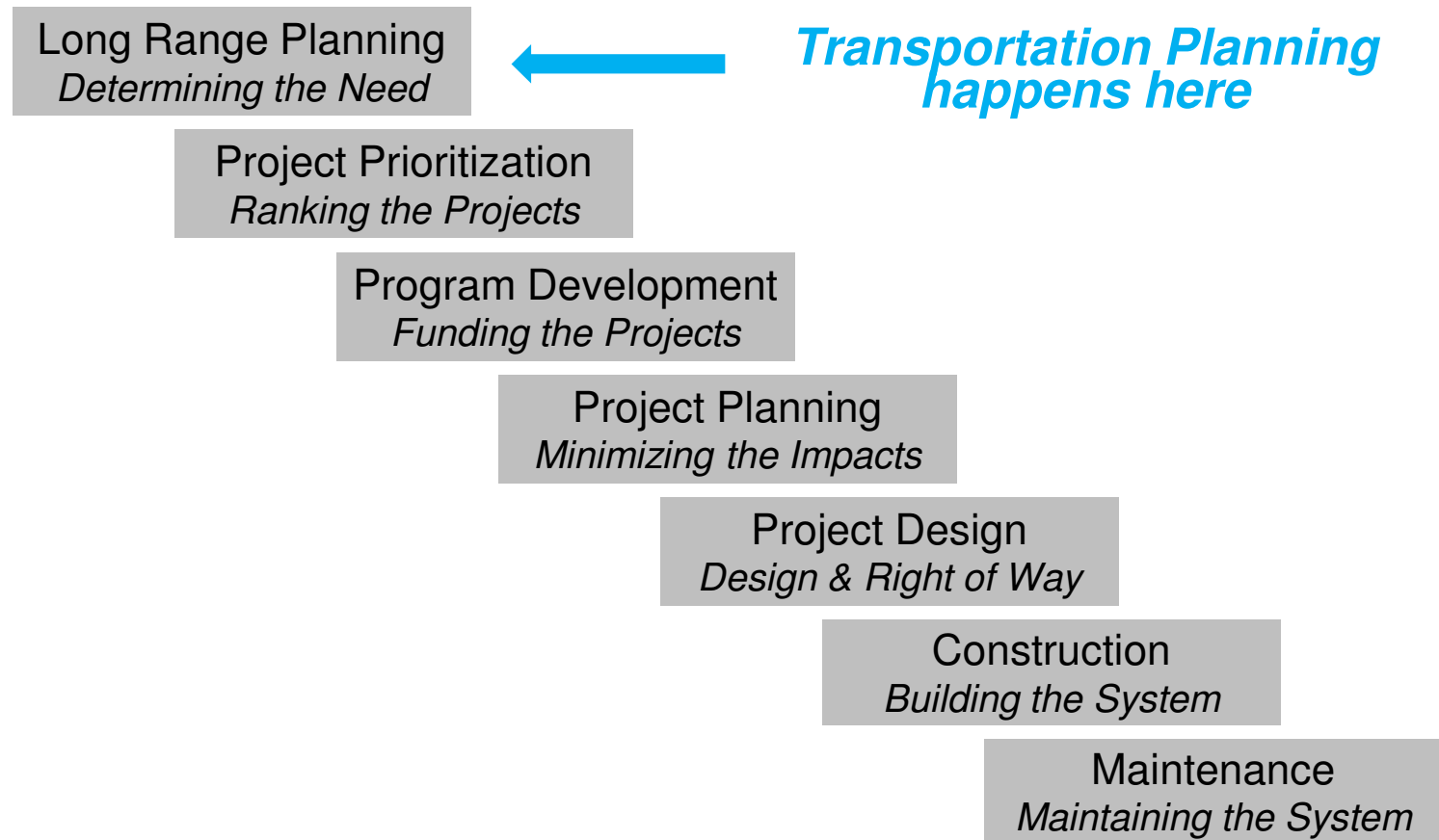
March 15, 2017

French Broad River MPO Orientation

NCDOT Transportation Planning Branch



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Primarily responsible for:

- Development of Comprehensive Transportation Plans (CTPs) for areas within NC
- Ensuring planning requirements are met for 19 MPOs and 18 RPOs
- Collection of all types of traffic and travel data on the State Highway System
- Traffic Models & Forecasts for project planning and design
- Systems Planning
 - Statewide Transportation Planning, Strategic Transportation Corridor Planning, Freight Planning, Air Quality Planning, Other Statewide Initiatives

TPB works with a large number of planning partners including MPOs, RPOs, other governmental entities, NCDOT Division Offices, other branches within NCDOT, resource agencies, and consultants



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CTP Background

North Carolina General Statute 136-66.2 requires each municipality or MPO, with the cooperation of the NCDOT, to develop a Comprehensive Transportation Plan (CTP) serving present and anticipated travel demand in and around the municipality or MPO.

The CTP was created in 2001 as a replacement to the highway only Thoroughfare Plan.



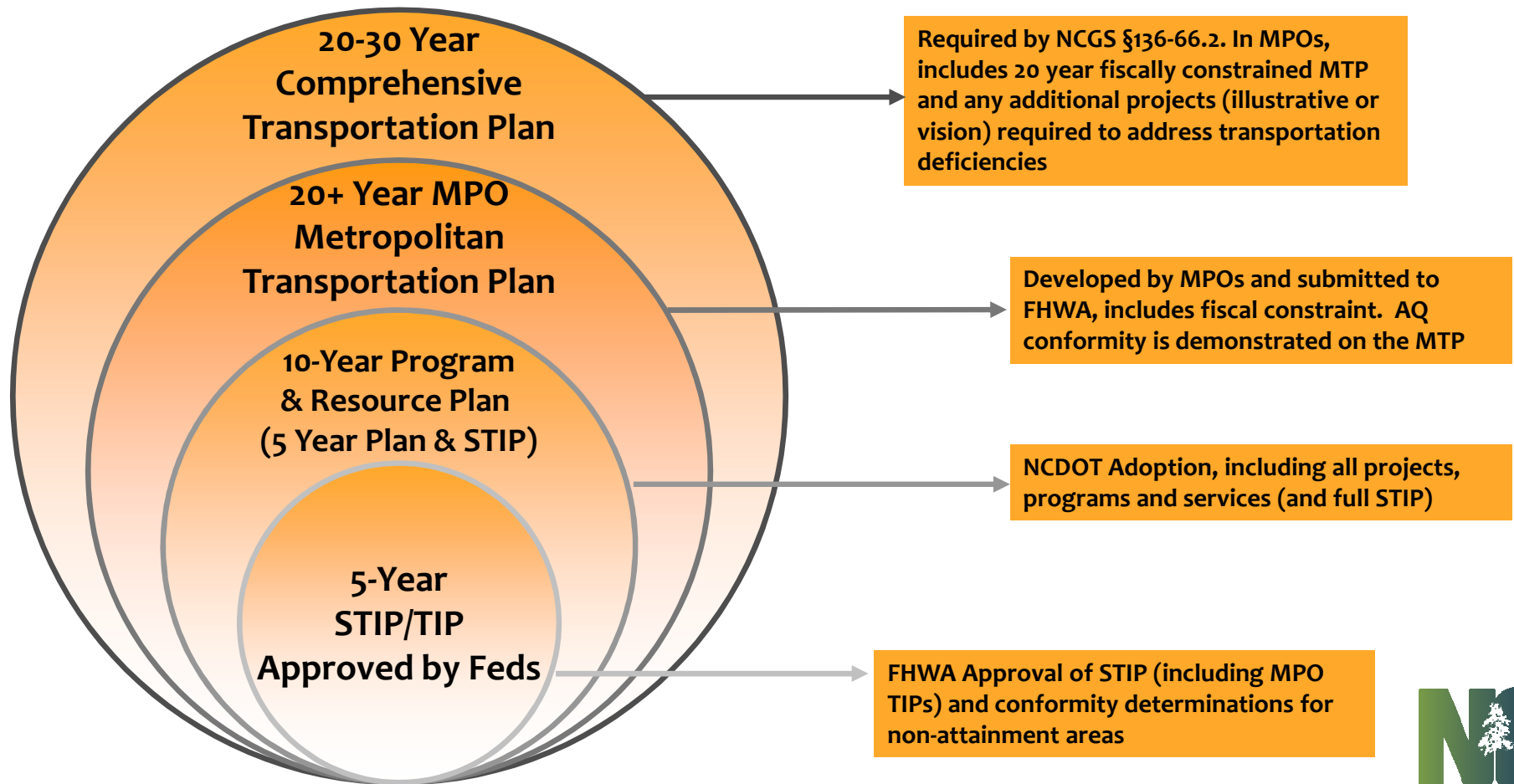
Comprehensive Transportation Plan

- Is a Long-Range, multimodal transportation plan (highway, public transportation/rail, bicycle, and pedestrian).
- Is developed cooperatively with NCDOT, the RPO/MPO, County, and Municipal stakeholders.
- Emphasizes the local land development plan as well as community and statewide goals such as the protection of Strategic Corridors.
- Is only a **Concept Plan**.
- Is not fiscally constrained.

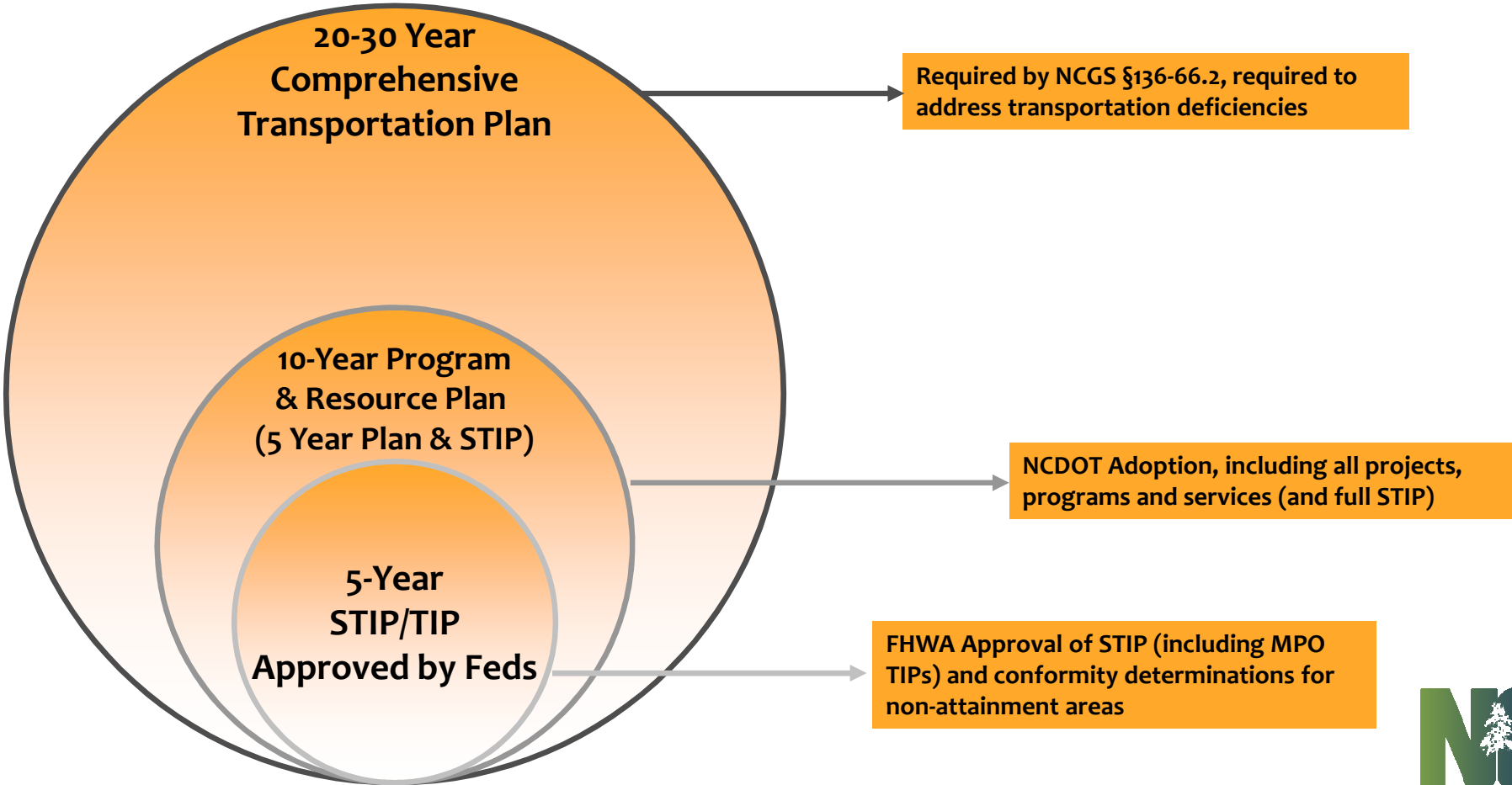
It is important to note that CTP recommendations are concepts and any project will go through a rigorous environmental process before final alignments or designs can be determined.



Transportation Planning Framework - MPOs



Transportation Planning Framework - RPOs



CTP vs MTP vs STIP

- Comprehensive Transportation Plan
 - Project the future and documented all needs and proposed solution for each
- Metropolitan Transportation Plan
 - Add funding projection and select those proposals we think we can fund
- STIP
 - Add cash flow and statewide prioritization to get funding years for projects

What is a Model?

Traffic Model?

Travel Demand Model?

TDM ?



What is a Model?

- Dictionary Definition:
 - (noun)
 - A small object, built to scale, representing another object
 - A description of a system that accounts for all of its known properties and is used for further study of its characteristics
 - (verb)
 - To give shape or form to an abstract concept
 - To simulate a process, concept, or the operation of a system



What is a Model?

For our purposes, a Travel Demand Model is a *series of mathematical equations that represent how choices are made, when people travel, & the electronic representation of that travel*

Basically...where are people coming & going to and how are they getting there!



How are Models Used?

- Determine Transportation Needs & Solutions for CTP/MTPs
- Evaluate Air Quality Impacts
- Analyze Proposed Land Use Changes



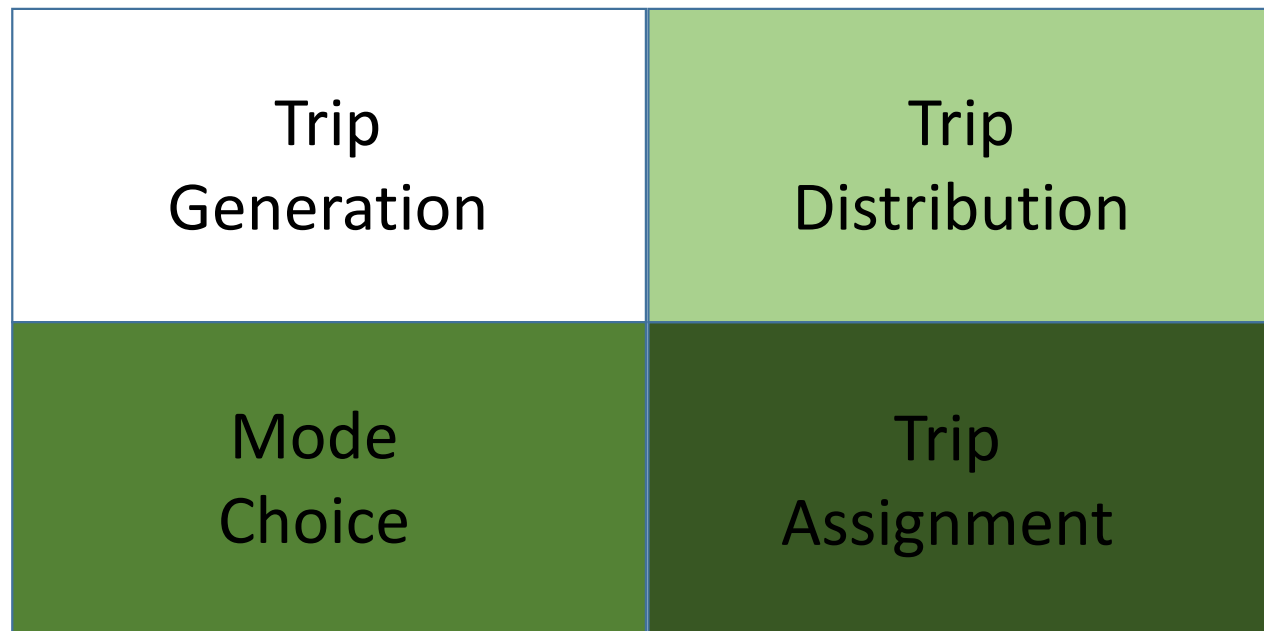
What kind of data goes into models?

- *Housing Data*
- *Roadway Data*
- *Employment Data*
- *Transit Inventory*
- *Census Data*
- *Traffic Counts*
- *Travel Behavior Data*
- *Speed Study Data*



How do you build a model?

Use the Four-Step Modeling Process



Building a model...

- Step 1: Trip Generation: Determining how many trips there are in the area
 - Commercial Vehicle Trips, Shopping Trips, School Trips, Work Trips, Non-resident trips
- Step 2: Trip Distribution: Determining where all the trips are going
 - Identifies destination by type of trip, Distance, Travel time, Land Use, etc.
- Step 3: Mode Choice: Determining how people travel around the area
 - Passenger car, Bicycling, Walking, Transit
- Step 4: Trip Assignment: Determining what path is used to make trips
 - Travel Time, Distance, Congestion, Alternatives



Final thoughts on modeling...

- *They are 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 & under our control*

No model can perfectly replicate or predict reality
but it will provide valuable information
that helps support the decision making process



Questions?

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Transportation