



NORTH CAROLINA

Turnpike Authority

Turnpike 101

11/21/06

Toll Road Finance

November 21, 2006

The Project is a “Business”

Look at:

- Project Revenue
- Estimate Capital Cost
- Project Operating Cost
- Develop a Capital Plan
- Raise the money

The Players

Traffic & Revenue

Wilbur Smith

Project Cost

HNTB

Financing Structure

PFM

Creating The Bonds

Womble Carlyle

Toll Traffic and Revenue Forecasts

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Today's Presentation

- What is a toll road financial feasibility study?
- Why is it necessary?
- What is the forecasting process?
- What are the next steps?

Levels of Toll Studies

- Level 1 – Sketch level
 - Project screening
- Level 2 – Preliminary Study
 - Indicative toll traffic, revenue, and feasibility
- Level 3 – Investment Grade
 - “Certified” revenue, used by bond rating agencies and investors to evaluate financial return on the project

Level 1 – Sketch Level Traffic & Revenue Study

- 1 – 2 months
- Existing Data Sources – traffic counts, socioeconomic parameters
- Limited Travel Demand Modeling using Existing Models
- Used for Screening

Level 2 Preliminary Traffic & Revenue Study

- 3 – 6 months
- Existing Travel Demand Models – limited refinements
- New Traffic Counts
- Speed & Delay Studies
- Model Calibration in the Corridor
- Socioeconomic Review with Limited Adjustments
- Value of Time from Census Statistics
- Toll Sensitivity
- Total Corridor Demand
- Diversion to Toll Facility – Toll Revenue
- Input to Preliminary Financial Analysis

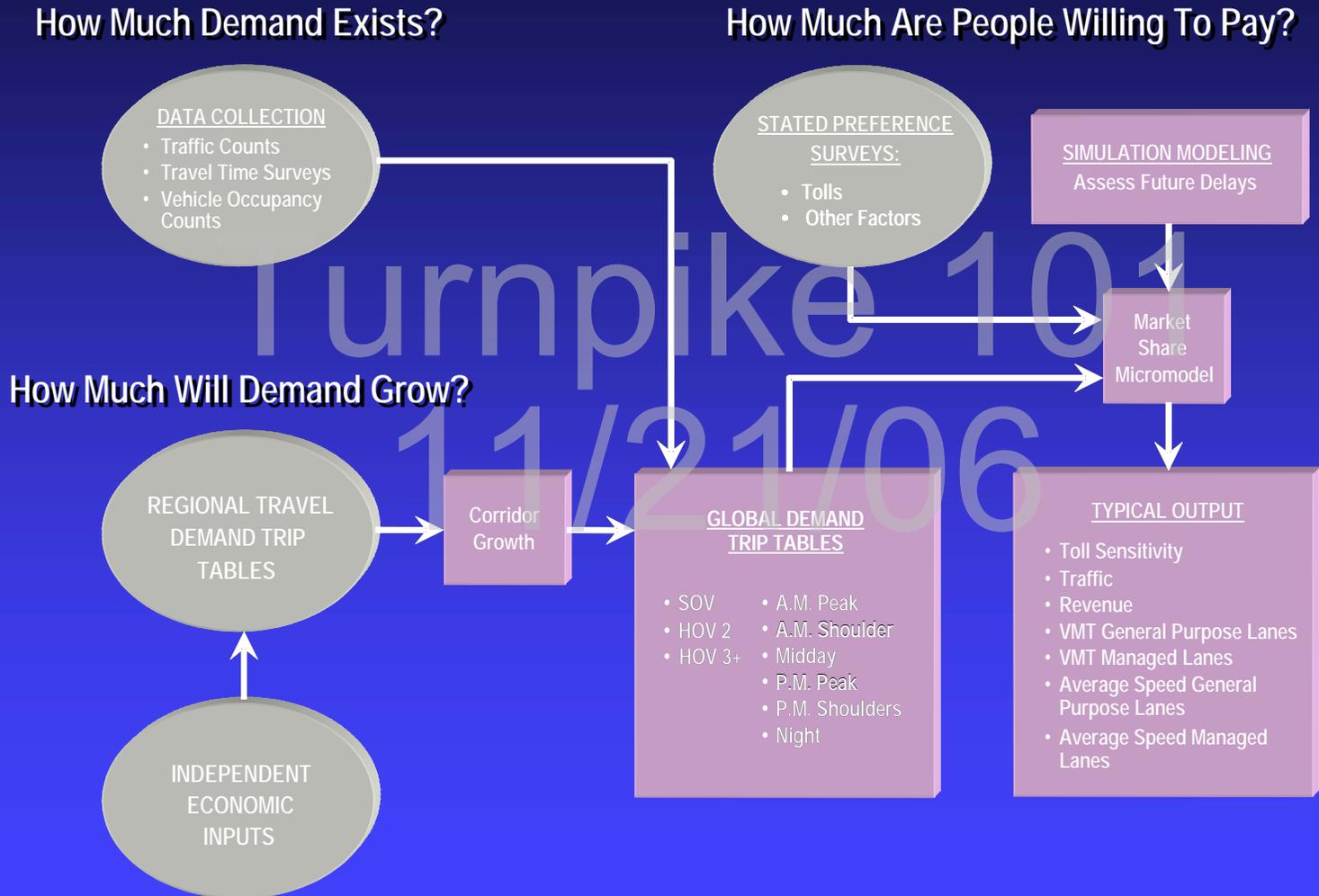
Level 3 – Investment Grade Traffic & Revenue Study

- 8 – 12 months
- Study cost around \$1 million
- Existing Travel Demand Models with Adjustments
- New Counts and Speed/Delay Studies
- Origin-Destination Surveys
- Stated Preference Surveys
- Independent Economic Review and Adjustments
- Operational Analysis and Toll Technology
- New Travel Demand Forecasts Including Transit
- Toll Sensitivity
- External Sensitivity Tests
- “Certified” Revenue Forecasts to Bond Rating Agencies and Investors

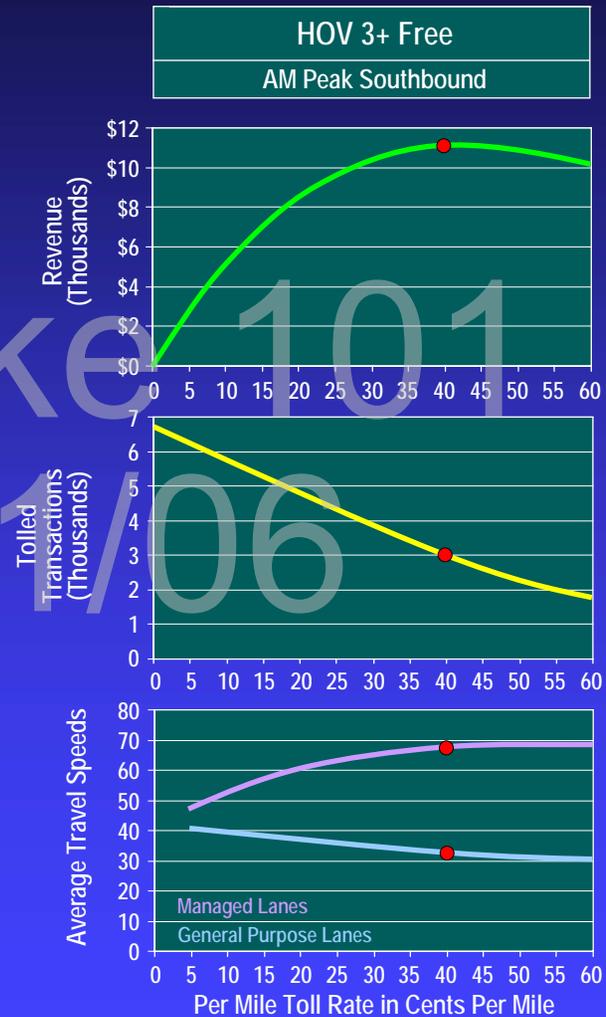
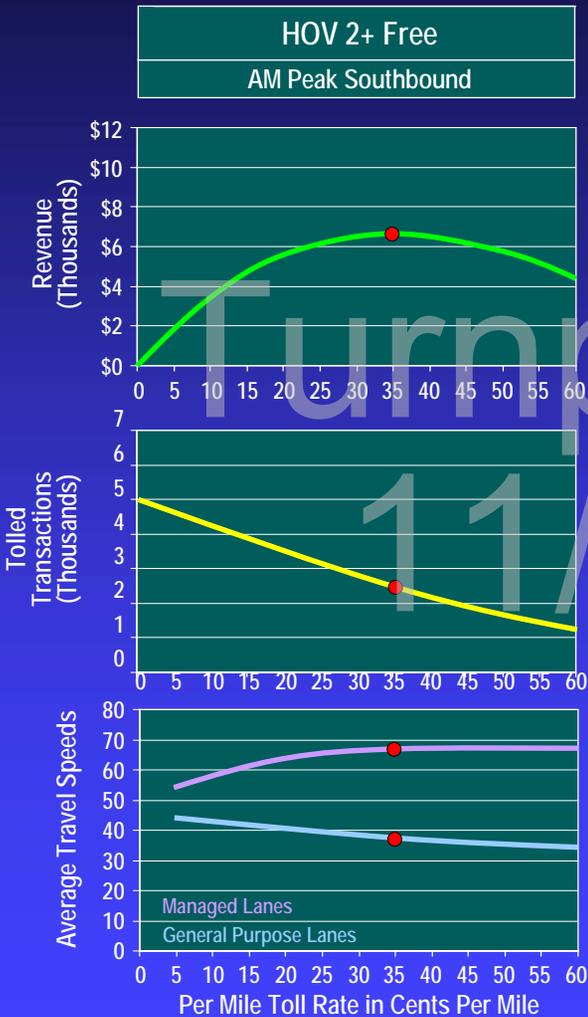
Toll Facility Traffic & Revenue Modeling

- How much travel demand is in the corridor?
 - **Passenger vehicles**
 - Cars, HOV, Transit
 - **Commercial vehicles**
 - Light, medium, heavy
- How much are people willing to pay to use the toll facility?
- How much will total demand grow?

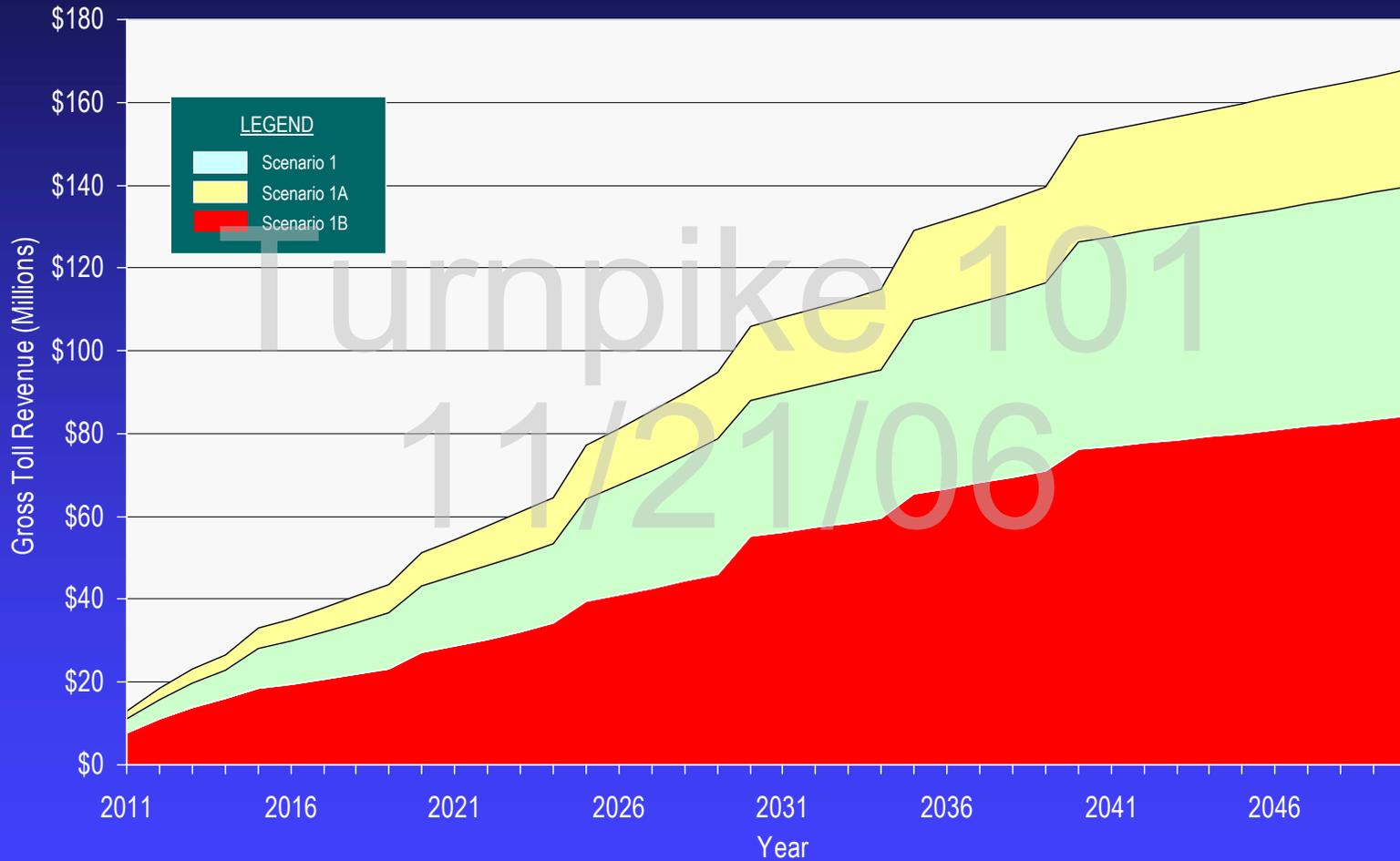
Toll Modeling Overview



Example Toll Sensitivity



Example Toll Revenue Forecast



Triangle Turnpike

- First Project to Move to Investment Grade Study
- Important New Access to RTP and Other Employment Sites
- Preliminary Studies Show Strong Revenue Potential
 - But additional funding beyond tolls will be needed

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Project Cost

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Consulting Engineer's Report

Project Costs

Estimate All Costs Elements:

- Right of Way
- Capital Cost
- Tolling Equipment
- Operations & Maintenance

Certified by HNTB

Consulting Engineer's Report:

- Independent Certification

Accuracy Critical:

- Once bonds are sold NCTA cannot go back to lenders for additional funds

Plan of Finance

Based on:

- Projected Revenue
- Projected Costs

Plan of Finance

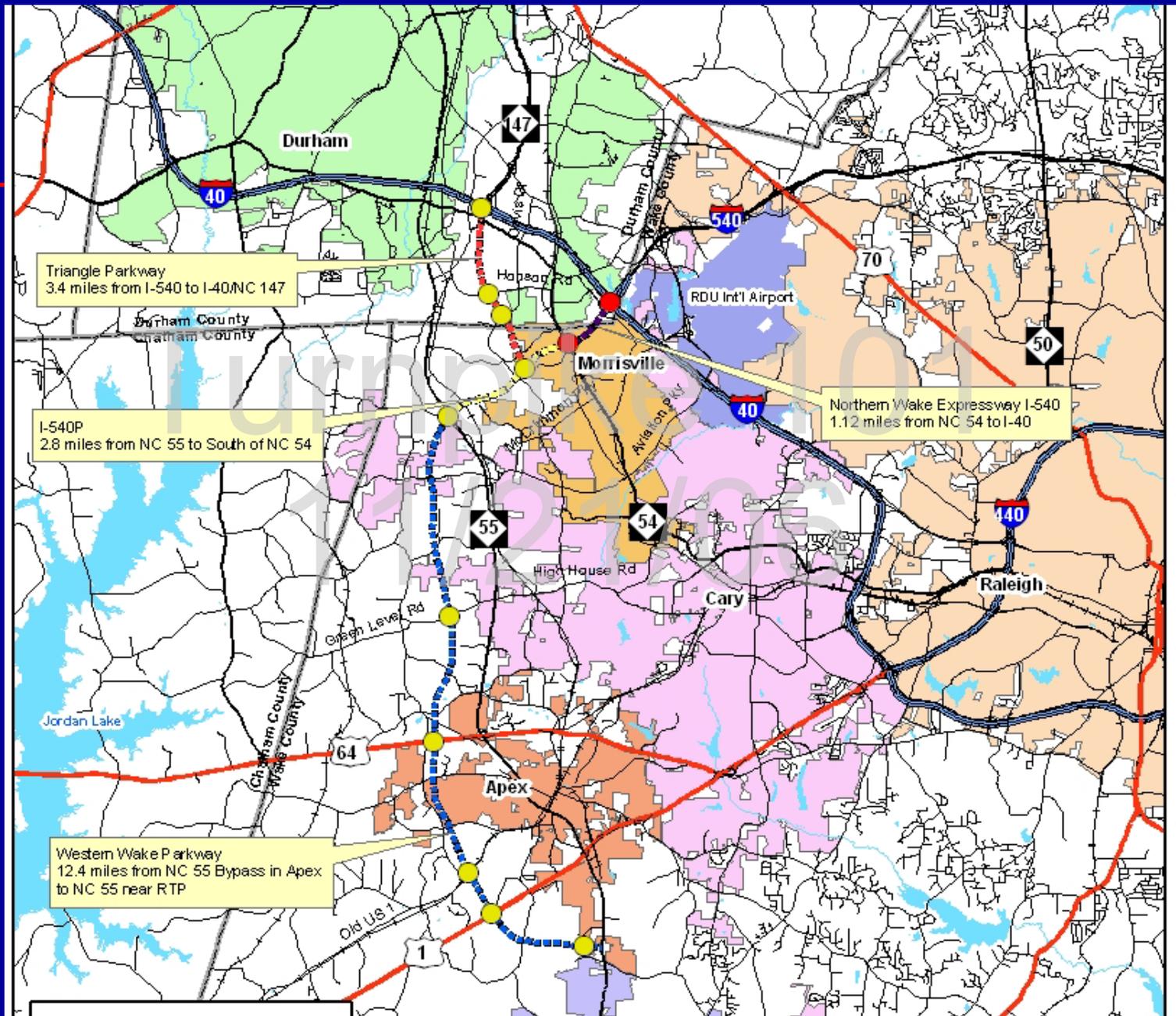
Also Considers:

- Legal Framework
- Preliminary Credit Assessment
- Develop Initial Project Specific Debt Structure to Determine Financial Feasibility
- If Applicable, Identify Funding Gap and Methods to Close the Gap

Triangle Turnpike Example

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Triangle Turnpike



Start-up Toll Facility Debt Structure

Debt Structure Incorporates:

- Capitalized Interest
- Capital Appreciation Bonds
- Senior and Subordinate Lien Debt Structure
- Debt Service Reserve Fund
- Net Revenue Pledge
- R&R and O&M Reserve Funding After Debt Service

Preliminary Financing Plan Triangle Turnpike

	Single Gap Payment*	Annual Revenue Supplement*
Current Interest Bonds	\$169.6	\$ 393.1
Capital App. Bonds	139.4	138.6
TIFIA Bonds	285.6	288.4
GAP Funding	\$214.9	
Annual Revenue		\$12 million per year
Total	\$ 809.5	\$ 820.1
Effective Interest Rate	7.05%	5.94%

* \$ millions

Financial Forecast

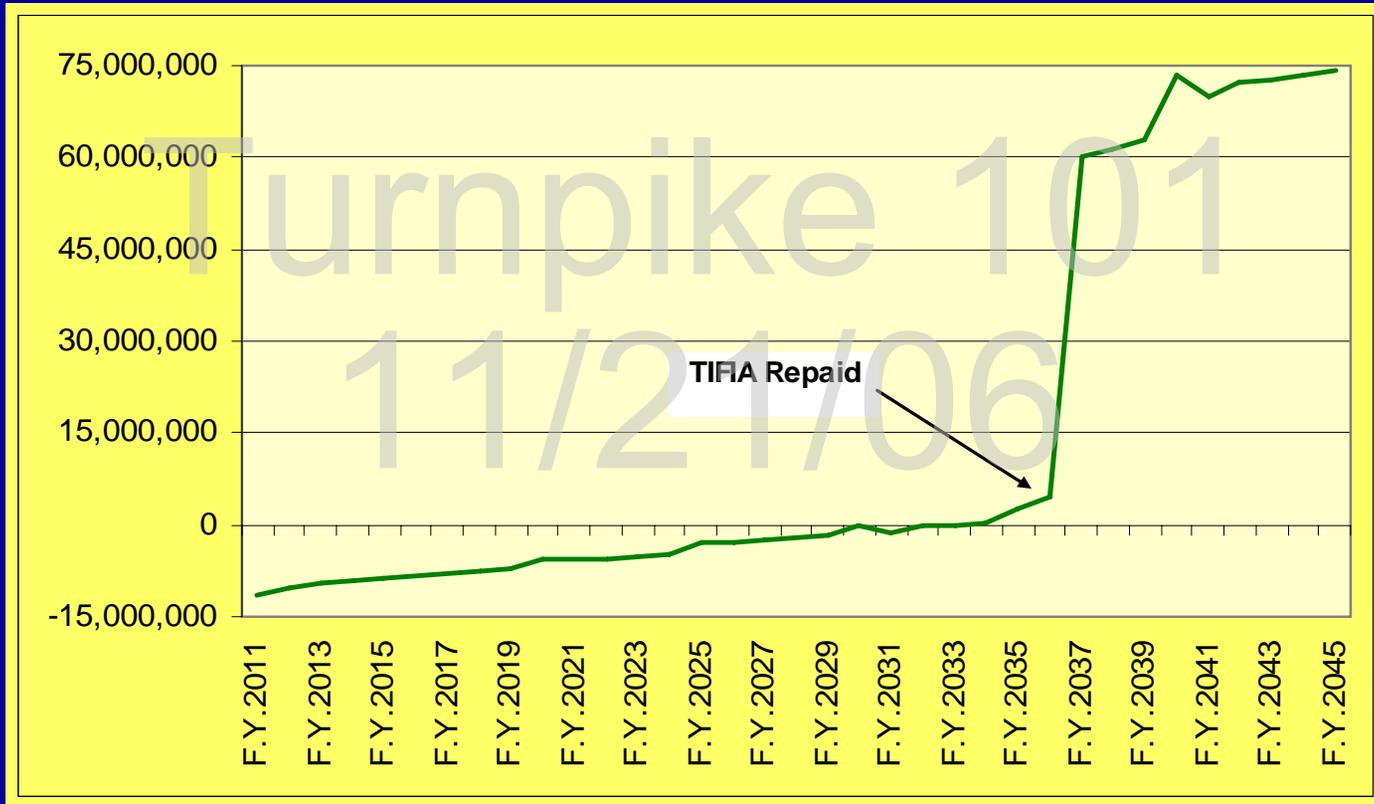
2030 - Break even

2037 - \$72 million profit

2046 - \$130 million profit

- Turn project over to NC DOT

Triangle Turnpike Cash Flow 2011-2045



Financing Risks

- Verified traffic & revenue
- Verified capital costs
- Documented subordinate loans at federal and state level
- Executed agreement with respect to any gap funding
- Development of market-standard bond financing documents
- The financing plan assumes current market interest rates which are subject to change.

Bond Purchasers

Sophisticated Investors:

- Critical evaluation of “Business Deal”
- Forecasts must be credible
- Credit Rating Agencies evaluate
- No impediments to project schedule

Bond Counsel Comments

11/21/06
Tom Lee

Womble Carlyle