

# **Eastside Corridor Tolling**

## **Expert Review Panel DRAFT Findings & Report Preview**

**Paula J. Hammond, P.E.**  
Secretary

**David L. Dye, P.E.**  
Deputy Secretary

**Steve Reinmuth**  
Chief of Staff

**Ginger Goodin, ERP Chair**  
Texas Transportation Institute

**Craig Stone, P.E.**  
WSDOT Toll Division Director

**Joint Transportation Committee**  
**January 5, 2011**

# I-405/SR 167 Expert Review Panel

## Members:

Academic

Ginger Goodin, Texas Transportation Institute (TTI), Texas A&M University System

Transportation  
Policy

Robert Poole, independent national transportation consultant (Los Angeles and Fort Lauderdale)

Transportation  
Planning

Chuck Fuhs with Parsons Brinckerhoff in Houston

Express Toll  
Operations

Jennifer Tsien, working with the Florida Turnpike Enterprise in Orlando and Miami

Financing

Janet Lee of Public Resources Advisory Group in New York

# Expert Review Panel Charge

*WSDOT Transportation Secretary, Paula Hammond, asked that the ERP address key questions for four topics:*

## **Policy**

- Is the state's strategic approach to implement express lanes on I-405/SR 167 viable, appropriate and consistent with emerging federal policy and current state and regional policies?

## **Methodology**

- Are the technical analytical measures and results supporting the Eastside Corridor Express Toll Lanes Report valid?
- Were the right tools applied to the analysis?
- Are the report results reasonable?
- What outcomes are reasonable to expect based on industry experience?

## **Phasing**

- Is the proposed phasing plan to implement an express toll lane system sensible, and provide for logical, usable segments towards a 50-mile Eastside Corridor system?

## **Financial**

- Are the Eastside Corridor Express Toll Lane Report financial assumptions, methods, and forecasts valid?

# Preliminary Findings

- Policy
- Methodology
- Phasing
- Financing

\* *Refer to handout*

# Question 1: Policy

Is the state's strategic approach to implement express lanes on I-405/SR 167 viable, appropriate and consistent with emerging federal policy and current state and regional policies?

## **ERP Response:**

### **The corridor is not homogeneous**

Evolution of express toll lanes concept

- First generation – represented by SR 167
- Second generation – represented by I-405 multiple toll lanes
- Corridor system – represented by the 50-mile system

### **The corridor – by segments and as a whole – is consistent with national practices and trends**

Comparison to other projects

- The concepts proposed for the I-405/SR 167 corridor are viable from a general technical standpoint in comparison to similar projects
- Concepts are similar to other projects in physical characteristics and in the types of performance and financial objectives

**Table 2-3. Comparison of I-405/SR 167 Concept to Corridor System Projects**

I-405/SR 167 PROJECT OBJECTIVES	OPERATING PROJECTS		PROJECTS UNDER CONSTRUCTION			
	San Diego I-15	Houston I-10	Miami I-595	Dallas LBJ	Fort Worth NTE	Washington D.C./Virginia I-495 Capital Beltway
<b>FREEWAY PERFORMANCE</b>						
Increase person throughput	✓					
Improve speed and travel reliability to free flow (45 to 60 mph)	✓	✓	✓	✓	✓	✓
HOV2+ to HOV3+ change as needed		✓***	**	✓*	✓*	**
Transit priority	✓	✓		✓	✓	✓
Reduce arterial diversion						
Mobility improvement for general purpose Lanes	✓	✓	✓	✓	✓	✓
Mobility improvement for freight			✓	✓	✓	
<b>LEVERAGE TOLL REVENUE</b>						
Retain tolling revenue in corridor	✓	✓	✓			✓
Secure financing			✓	✓	✓	✓
Exempt transit and carpools from tolls	✓	✓	✓**	✓*	✓*	✓**
Prioritize funding to leverage toll revenue with other funding		✓	✓	✓	✓	✓
<b>EXPRESS TOLL LANE SYSTEM</b>						
Incremental implementation beginning with funded projects	✓					
Fit within LRP and regional tolling system	✓	✓	✓	✓	✓	
Sensitivity to construction phasing on a regional level						

*Shaded rows indicate typical second-generation project objectives for corridor system megaprojects*

\*HOV2+ 50% discount peak periods only

\*\*HOV3+

\*\*\*HOV2+, to migrate to HOV3+ in future

# Question 2: Methodology

Are the technical analytical measures and results supporting the Eastside Corridor Express Toll Lanes Report valid? Were the right tools applied to the analysis? Are the report results reasonable? What outcomes are reasonable to expect based on industry experience?

## **ERP Response:**

**Primary measure of effectiveness (MOE)** - “vehicles and people moving at free-flow speed” - is unconventional

**Additional MOEs** were requested to:

- (1) Ensure consistency with standard practices
- (2) Ensure objectivity in results
- (3) Provide a broader picture of overall corridor performance

The additional MOEs:

- System performance metrics
- Screen line comparisons with non-toll option
- Corridor speed and volume profiles

# Modeled Network Performance Measures for AM Peak Period in 2035

	<b>Option 4 Non-Tolled</b>	<b>Option 4 Tolled</b>	<b>% Difference</b>
Vehicle Throughput (no. vehicles)	212,904	242,932	+14%
Average Speed (mph)	27.1	37.0	+36%
Total Travel Time (hours)	56,217	48,142	-14%
Average Delay per Vehicle (sec.)	430	241	-44%



# Screenline Comparisons

Example: SR 167 Northbound in AM Peak, 2020



## HOV Lane

Vehicles: 150  
People: 370  
Speed: 60

## General Purpose Lane

Vehicles: 1995  
People: 2500  
Speed: 28

Total Vehicle Throughput: 2145



## Express Toll Lane

Vehicles: 960  
People: 1440  
Speed: 60

## General Purpose Lane

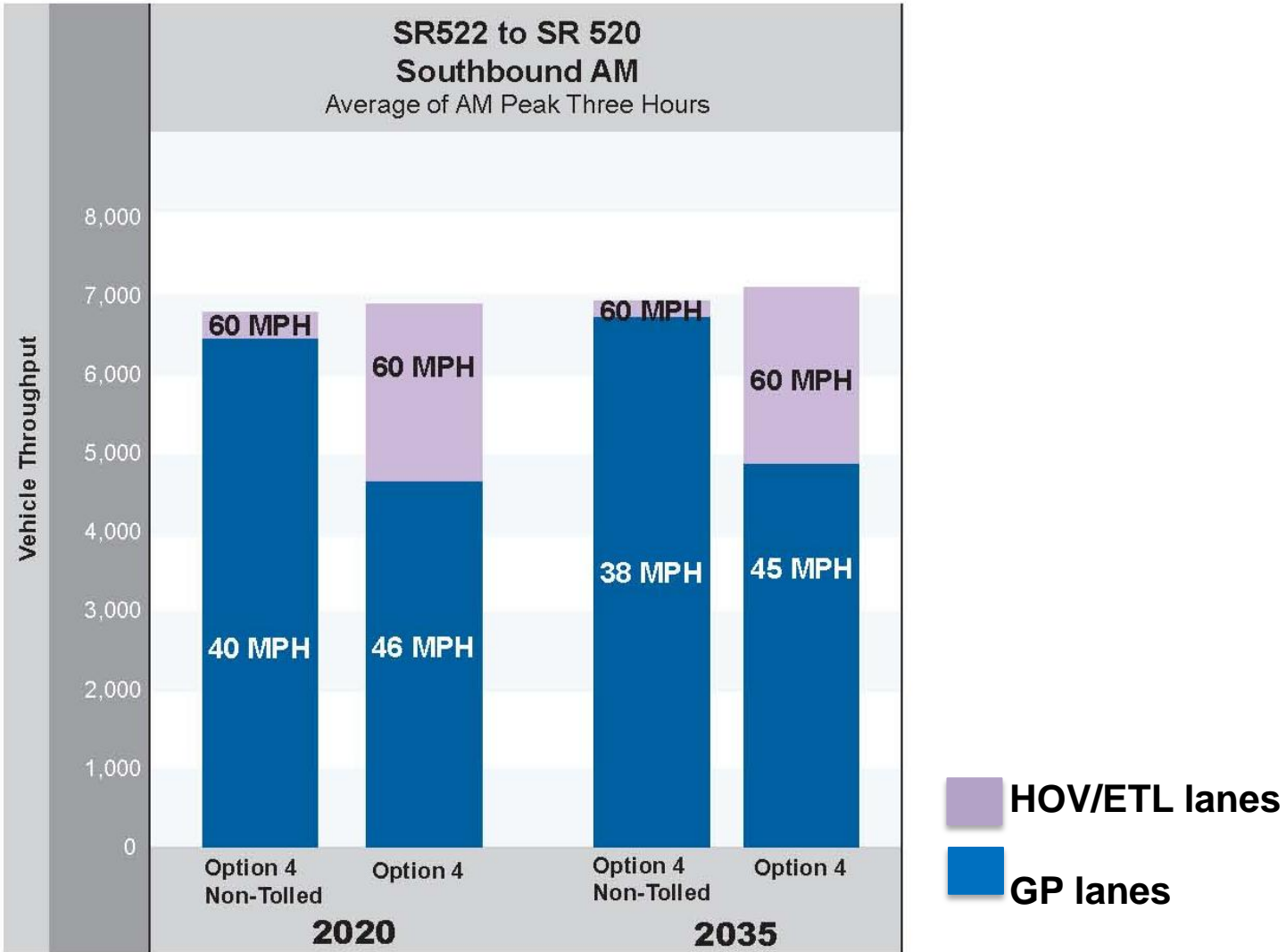
Vehicles: 2635  
People: 2900  
Speed: 45

Total Vehicle Throughput: 3595

*Useful in comparative evaluation at specific points, but a more complete picture needed*

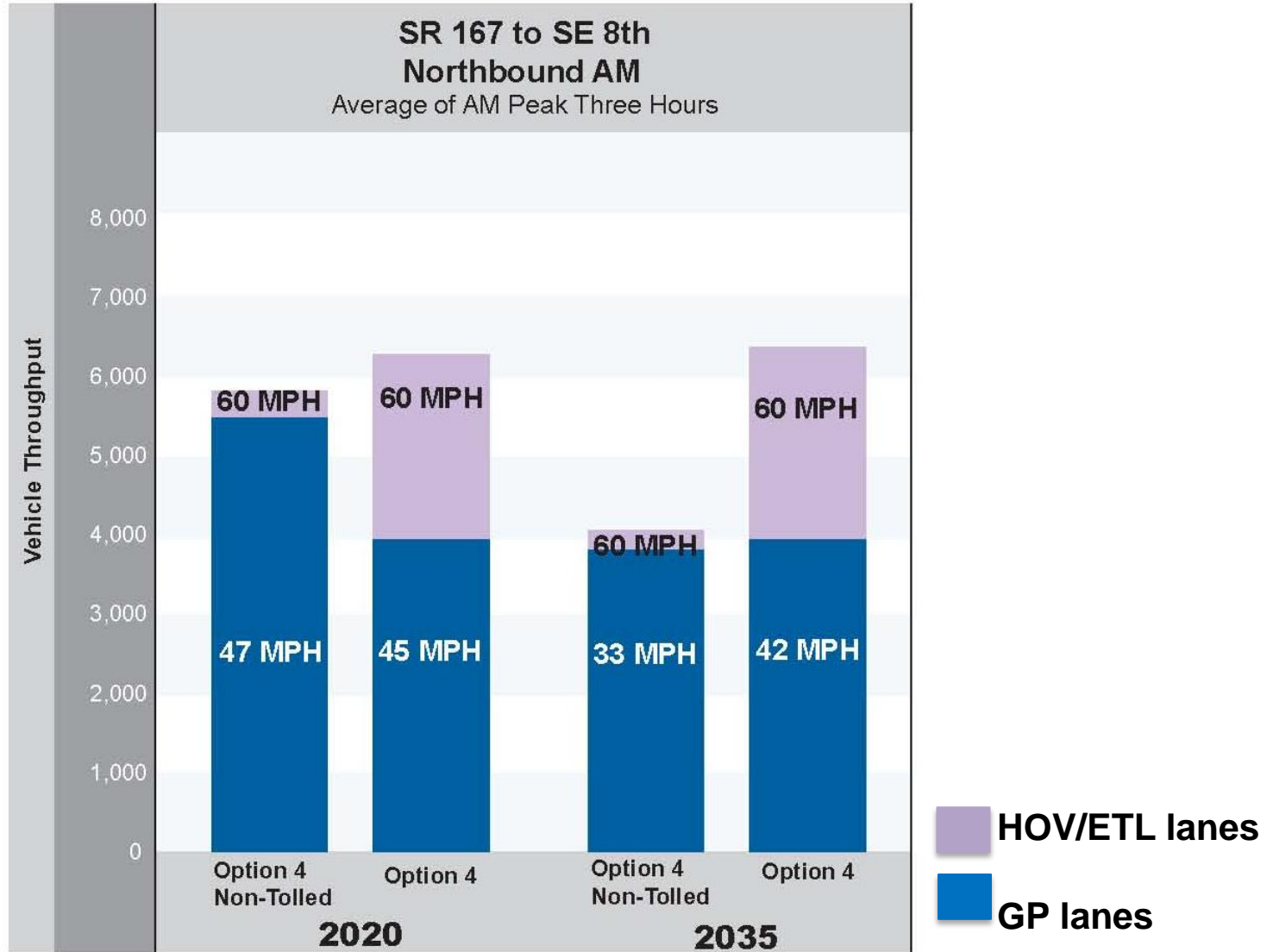
# North end Traffic Performance

## *Non-tolled vs. Tolled for 2020 and 2035*

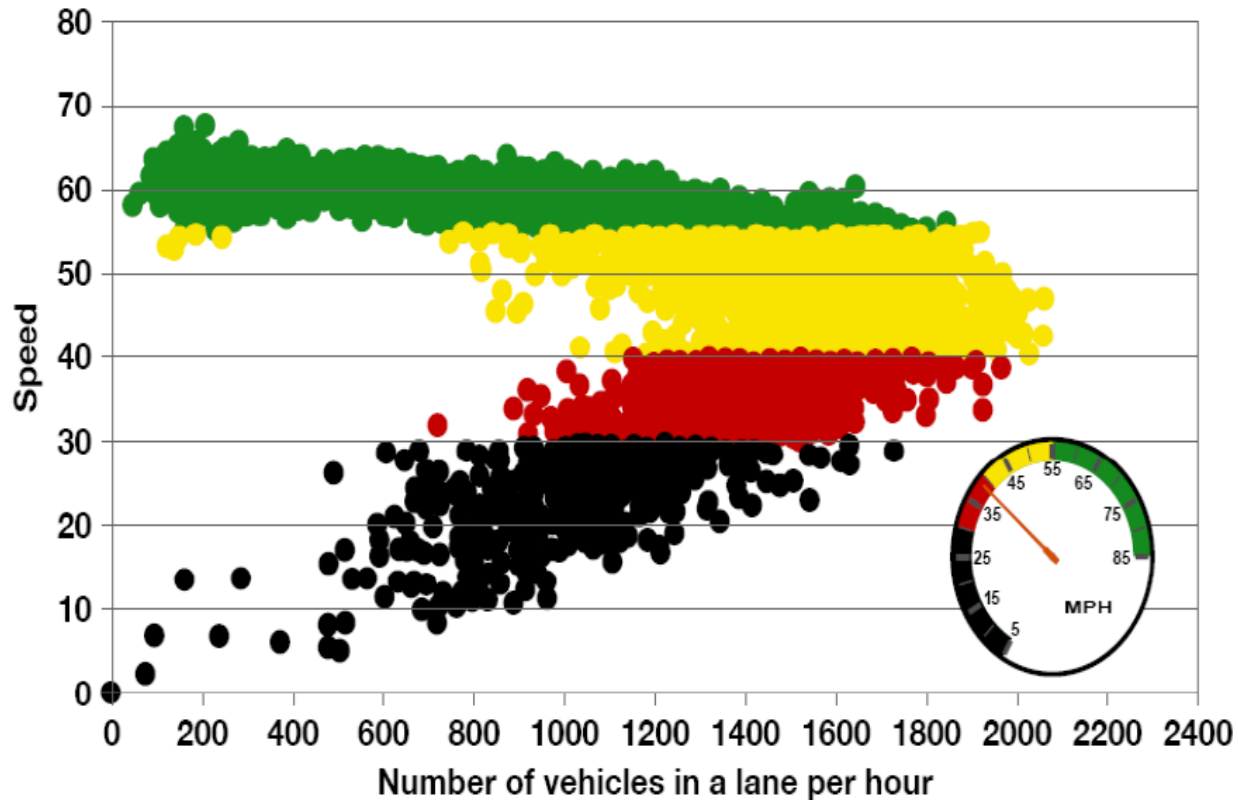


# Renton to Bellevue Traffic Performance

## *Non-tolled vs. Tolled for 2020 and 2035*



# Why do express toll lanes perform better?



*Pricing in response to changing demand (variable pricing) helps to improve performance by maintaining a constant flow rate that serves to manage the higher levels of demand and prevent the breakdown in flow.*

# Question 3: Phasing

Is the proposed phasing plan to implement an express toll lane system sensible, and provide for logical, usable segments towards a 50-mile Eastside Corridor system?

## **ERP Response:**

### **Corridor system – “megaproject” approach**

- Case study projects driven by finance and opened in entirety without phasing
- Move forward with Phase 1, but seek to implement the balance as a corridor-wide solution in response to the master plan framework

**Develop corridor-wide financial plan** to explore future phasing, project delivery, operational performance and managing risk associated with implementing and opening remaining portions of the corridor over the next decade.

### **HOV 2+ to 3+ transition**

- Address degradation as an early action item
- Supports financing and logical phasing

Strategy (Tolling Options)	Pros	Cons
Raise to 3+, toll all others same rate	<ul style="list-style-type: none"> <li>• Matches long term policy needed to meet finance goal</li> <li>• No incentive to HOV2 at any time</li> <li>• Transit benefits regained</li> <li>• Maximizes financial viability</li> <li>• Eventual higher person throughput</li> </ul>	<ul style="list-style-type: none"> <li>• Hard to implement because HOV2s lose current incentives (but others get to use the HOV lanes)</li> <li>• Initial person throughput impacts</li> <li>• Public support</li> </ul>
Raise to 3+ in peaks, 2+ in off peaks and toll excess capacity (there are many tolling approaches that might be applied within tiered occupancy requirements)	<ul style="list-style-type: none"> <li>• 3+ only applies to hours when degradation is evidenced, otherwise no change from present</li> <li>• Tolling used to manage excess capacity in maximizing throughput</li> <li>• Generates revenue</li> <li>• Transit benefits are regained</li> </ul>	<ul style="list-style-type: none"> <li>• No incentive to HOV2 in peaks</li> <li>• Initial person throughput impacts</li> <li>• Public support</li> </ul>
Raise to 3+, discount tolls to 2+, full toll to all others	<ul style="list-style-type: none"> <li>• Comes closest to matching long term policy</li> <li>• Tolling used to manage excess capacity</li> <li>• Still provides benefits to all HOVs</li> <li>• Transit benefits regained</li> </ul>	<ul style="list-style-type: none"> <li>• Requires different kind of self declaration transponder, higher cost</li> <li>• More complicated enforcement</li> <li>• More complex business rules</li> </ul>
Raise to 3+ in peaks, 2+ in off peaks (no tolling)	<ul style="list-style-type: none"> <li>• Only applies to hours when degradation is evidenced</li> <li>• Does not introduce tolling requirement nor reduce HOVs for SOV buy-in</li> <li>• Transit benefits regained</li> </ul>	<ul style="list-style-type: none"> <li>• Potential empty lanes in peak period</li> <li>• Major LOS degradation to general purpose lanes</li> <li>• Increases violations</li> <li>• Likely public and political backlash</li> <li>• Does not effectively manage lanes to maximize mobility</li> <li>• Reduce financial viability-no revenue generation</li> </ul>
Require all HOV2+ (or all HOVs) to be registered (stickers) or have an active transponder account to meter demand as an interim step (no tolling)	<ul style="list-style-type: none"> <li>• Lowers current demand (hopefully enough)</li> <li>• Effective interim step applied for some projects prior to electronic tolling (I-15 San Diego and I-15 Salt Lake City)</li> <li>• Regiments carpool formation (similar to "first on" ferry loading program)</li> <li>• Transit benefits regained</li> </ul>	<ul style="list-style-type: none"> <li>• Impedes spontaneous carpooling</li> <li>• Does not allow for active lane management in peaks</li> <li>• Major administration and capital cost (transponder option)</li> <li>• No revenue generation -defers introduction of tolling</li> </ul>

# Question 4: Financing

Are the Eastside Corridor Express Toll Lane Report financial assumptions, methods, and forecasts valid?

## **ERP Response:**

### **Perform investment grade traffic and revenue study**

- Provides a financial plan with more detailed review, supported by additional data collection and analysis, results in “certified” revenue forecasts to bond rating agencies and investors
- Identify phasing to optimize revenue and performance

### **Filling the funding gap**

- Potential funding sources need to be identified
- Openness to new operating policies and tools

### **Megaproject financing with alternative funding models**

- Consider successful models for corridor systems

# The Funding Gap

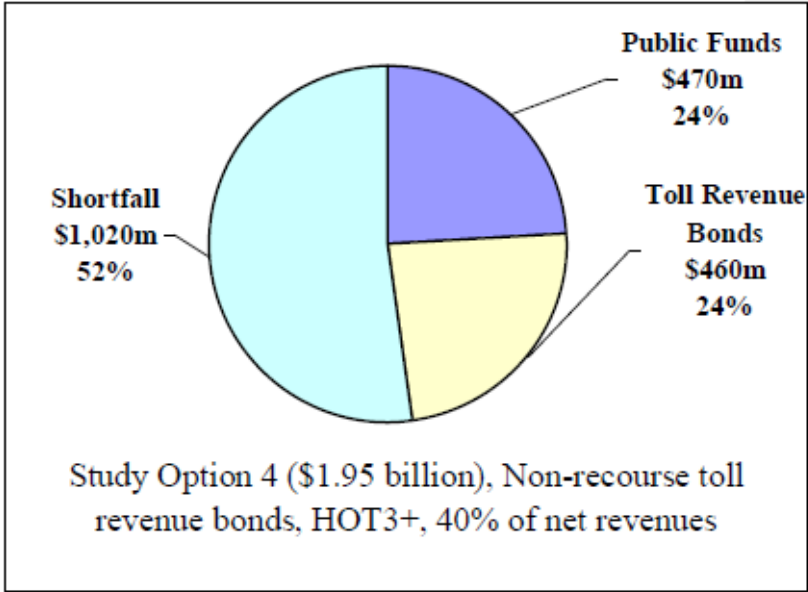
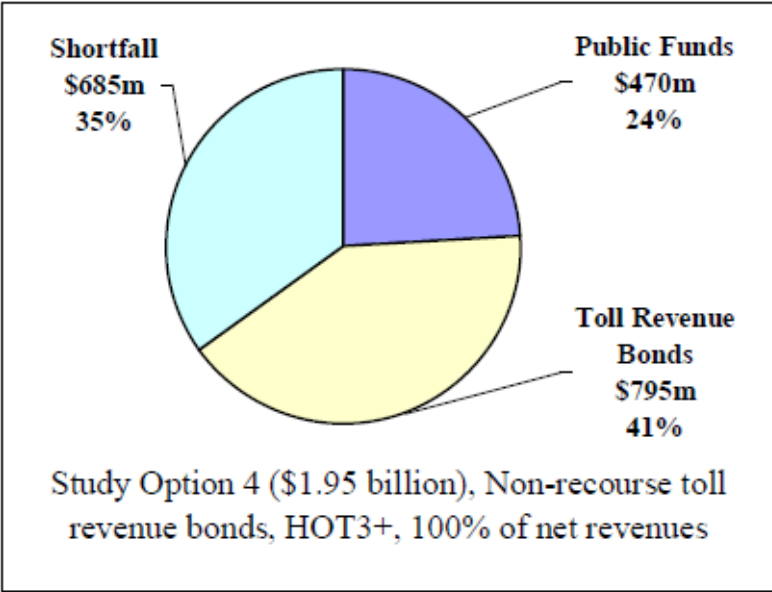


Figure 5-1 Example of Potential I-405/SR 167 Funding



# Megaproject Funding Model - PPP

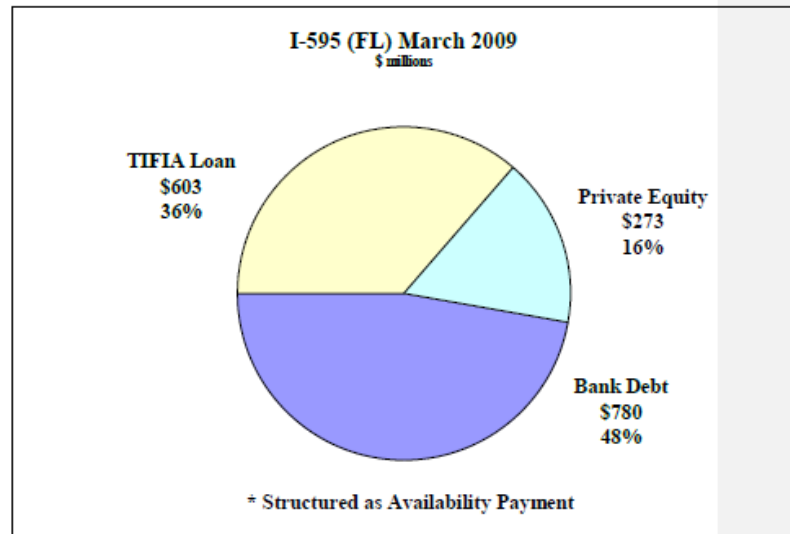
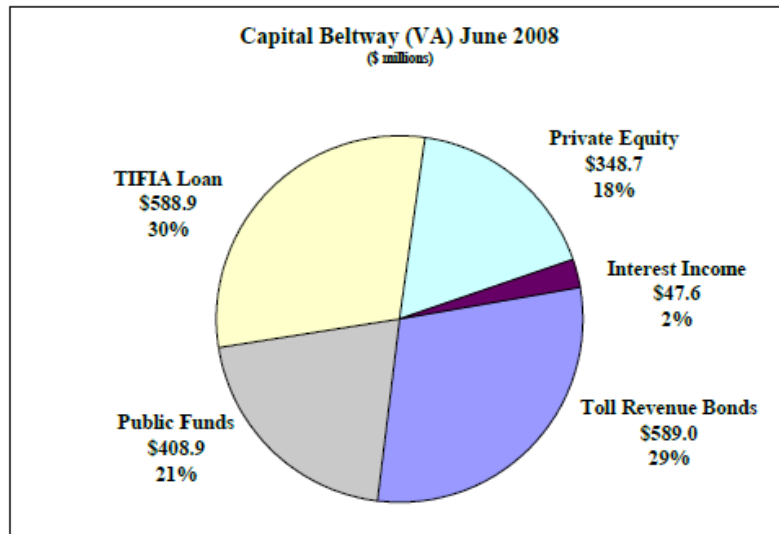
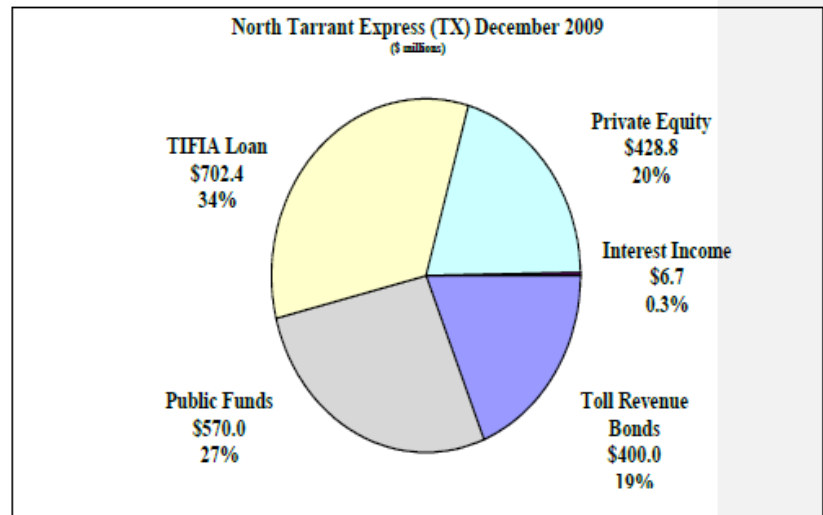
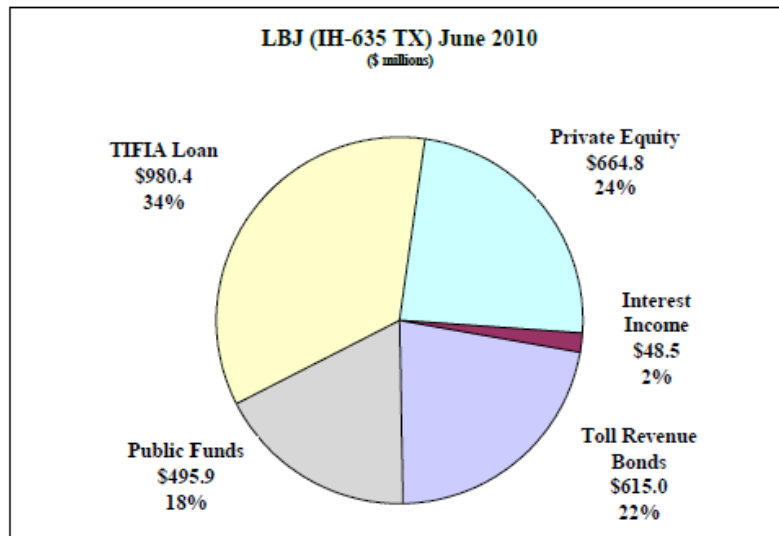


Figure 5-2 Distribution of Financing for Projects Supported by Public-Private Partnerships

# Recommended Next Steps

- Move forward with Phase 1 (6 months)
- Address regional policy for HOV degradation and migration to HOT3+ (6 months)
- Seek FHWA tolling approval for corridor (6 months)
- Continue authorization of tolls on SR 167 HOT lanes pilot project (1 yr)
- Continue developing the components comprising a megaproject (project management plan, risk management plan, master schedule, phasing plan, and financial plan). Maintain momentum with current legacy team. (1 yr)
- Leverage completed environmental documents before they expire (1 yr)
- Address operating policies and design elements that support financing requirements (1 yr)
- Make the I-405/SR 167 interchange a higher priority by mobilizing critical path items like ROW and value engineering (2 yrs)
- Complete an investment grade traffic and revenue study (2 yrs)
- Address the funding gap through financing, user fees and delivery options (2 yrs)

# ERP Final Report

- To be completed by the end of December
- No surprises in the report – original draft findings are represented in the Executive Summary
  - Some things may be reworded slightly
  - More information has come in to help clarify certain points
  - Essence of the findings has not changed
- Report provides the details behind the analysis to get to our findings
- Highlights the updated MOEs developed and reviewed