

# Clackamas County Transportation System Plan Update

## TAC Meeting #6

February 19<sup>th</sup>, 2013



**KITTELSON & ASSOCIATES, INC.**  
TRANSPORTATION ENGINEERING/PLANNING

# Meeting Agenda

2:00 – 5:00 p.m.

- Meeting Purpose and Outcomes/ Agenda Overview
- Project Updates, Progress, Schedule
- Funding Projections and Planning Level Cost Estimates
- Prioritization Process and Supplemental Analyses
- Draft Project Lists and Discussion
- Additional Comments
- Next Steps, Homework, and Upcoming Interactive Website Exercise

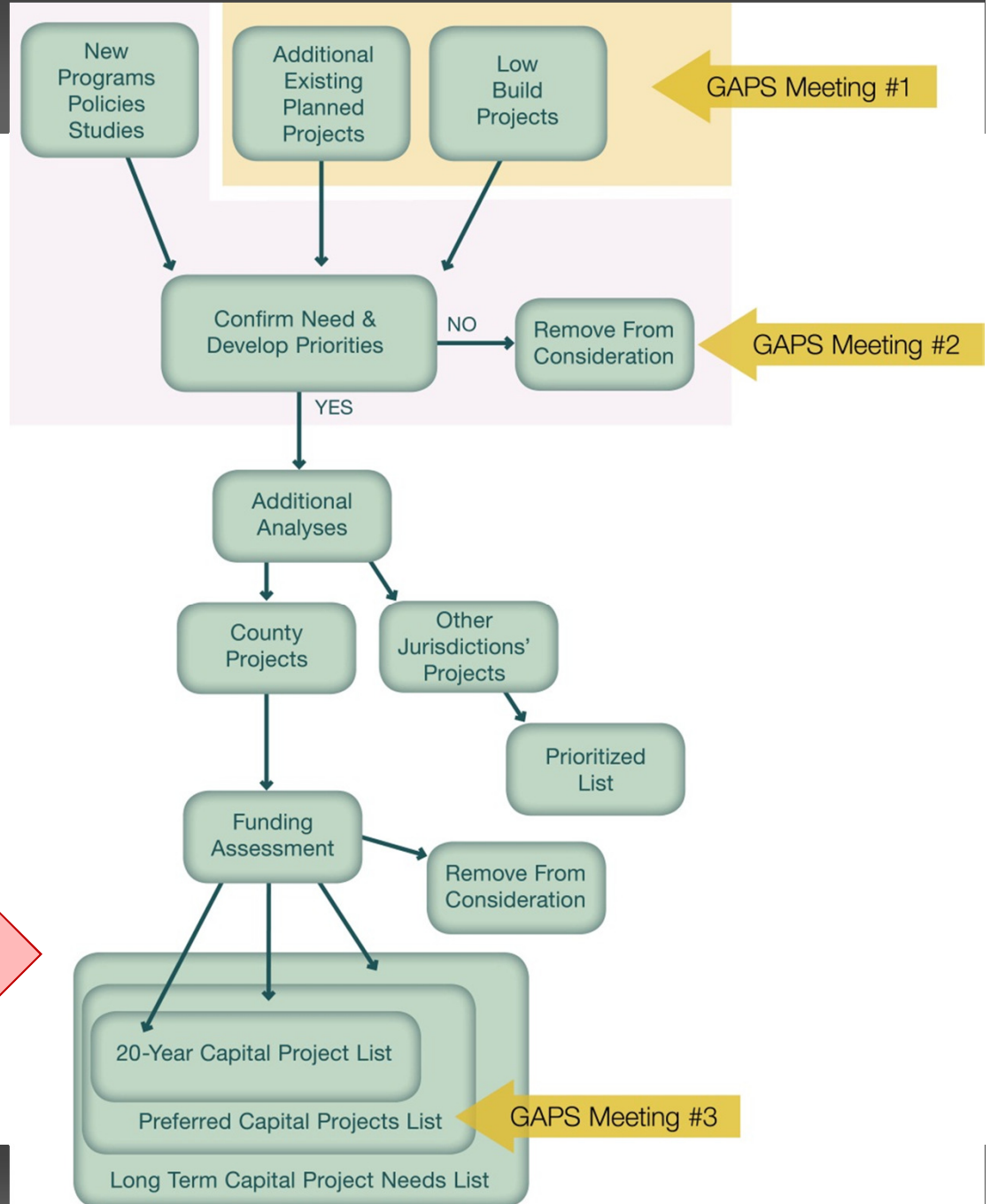
# Meeting Objectives

- Review funding projections and planning level cost estimates
- Review and discuss prioritization process, including supplemental analyses
- Gather input on draft prioritized project list

# Project Updates

➤ Since TAC Meeting #5, we have completed:

- Funding Assessment
- Additional Analysis
- Cost Estimation
- Project Scoring
- Draft Prioritization





# Funding Projections

- What is it?
  - Estimated future funding available for projects, programs and studies
  
- What's the purpose?
  - Defines funding available for the **20-Year Capital Projects Plan**
  - Helps identify the potential funding shortfalls

# Funding Projections

- Seven Basic Funding Sources
  - Federal revenue
  - County Road Fund
  - Special state revenue programs
  - Local governments and other agencies
  - Other revenue sources – development related
  - Transportation System Development Charges (TSDC)
  - Urban Renewal (Tax Increment Financing [TIF])
- Restrictions apply to some revenue sources
- Total revenue forecast approximately \$444 million

# Planning Level Cost Estimates

- Planning level cost estimates developed for all projects using unit costs or existing plans (i.e., RTP)

Area	Total Cost of all Projects
Clackamas Regional Center/Industrial Area	\$916 Million
East County	\$758 Million
Greater McLoughlin Area	\$419 Million
Northwest County	\$506 Million
Southwest County	\$2,231 Million
<b>County Total – All Areas</b>	<b>\$4,830 Million</b>
<b>Projects on ODOT Facilities</b>	<b>\$3,448 Million</b>



# Prioritization Process

- Projects initially scored based on:
  - Goals 1 – 6 Evaluation Criteria
  - 70% Growth Analysis
  - DTA Analysis
  - Identified Needs (Gaps and Deficiencies)
- County projects will be prioritized based on initial scoring and additional input from the PMT, PAC, TAC, public, and other stakeholders
- ODOT projects will be prioritized based on initial scoring

# Goal Scoring

> Projects rated for each goal on scale of -1 to +2

Goal	Metric
<b>Goal 1: Sustainability</b>	<ol style="list-style-type: none"> <li>1) Does the project increase the potential for walking, biking or taking transit?</li> <li>2) Does the project impact identified environmentally sensitive areas?</li> </ol>
<b>Goal 2: Local Businesses and Jobs</b>	<ol style="list-style-type: none"> <li>1) Is the project located in or near an existing or future employment area?</li> <li>2) Does the project create a direct connection from a highway or other major facility to an employment area?</li> </ol>
<b>Goal 3: Livable and Local</b>	<ol style="list-style-type: none"> <li>1) Does the project increase connections to daily needs and services?</li> <li>2) Does the project reduce the impacts of reoccurring flooding?</li> <li>3) Does the project help implement a local land use or development plan?</li> </ol>
<b>Goal 4: Safety and Health</b>	<ol style="list-style-type: none"> <li>1) Does the project improve a safety focus intersection, a candidate road safety audit corridor or an ODOT Safety Priority Index System (SPIS) site?</li> <li>2) Does the project have the potential to reduce emissions near schools or densely populated areas?</li> </ol>
<b>Goal 5: Equity</b>	<ol style="list-style-type: none"> <li>1) Is the project located in a transportation disadvantaged area and does it increase transportation options for that disadvantaged community?</li> </ol>
<b>Goal 6: Fiscally Responsible</b>	<ol style="list-style-type: none"> <li>1) What is the estimated cost effectiveness of the project?</li> </ol>

# 70% Growth Forecast Results

# 70% Household & Employment Growth Scenario

## > 2035 Gamma Regional Household and Employment Forecast

2035 Gamma Forecast	2010 Households	2035 Households	2010 – 2035 Change (70%)	2010 Employment	2035 Employment	2010 – 2035 Change (70%)
Clackamas County	146,324	205,369	<b>+59,045</b>	137,946	210,340	<b>+72,394</b>
Multnomah County	304,649	442,778	<b>+138,129</b>	419,164	597,532	<b>+178,368</b>
Washington County	202,647	294,174	<b>+93,527</b>	232,019	382,310	<b>+150,291</b>
Clark County	158,110	228,392	<b>+70,282</b>	127,267	222,029	<b>+94,762</b>
<b>TOTAL</b>	811,730	1,170,713	<b>+358,983</b>	916,396	1,412,211	<b>+495,815</b>

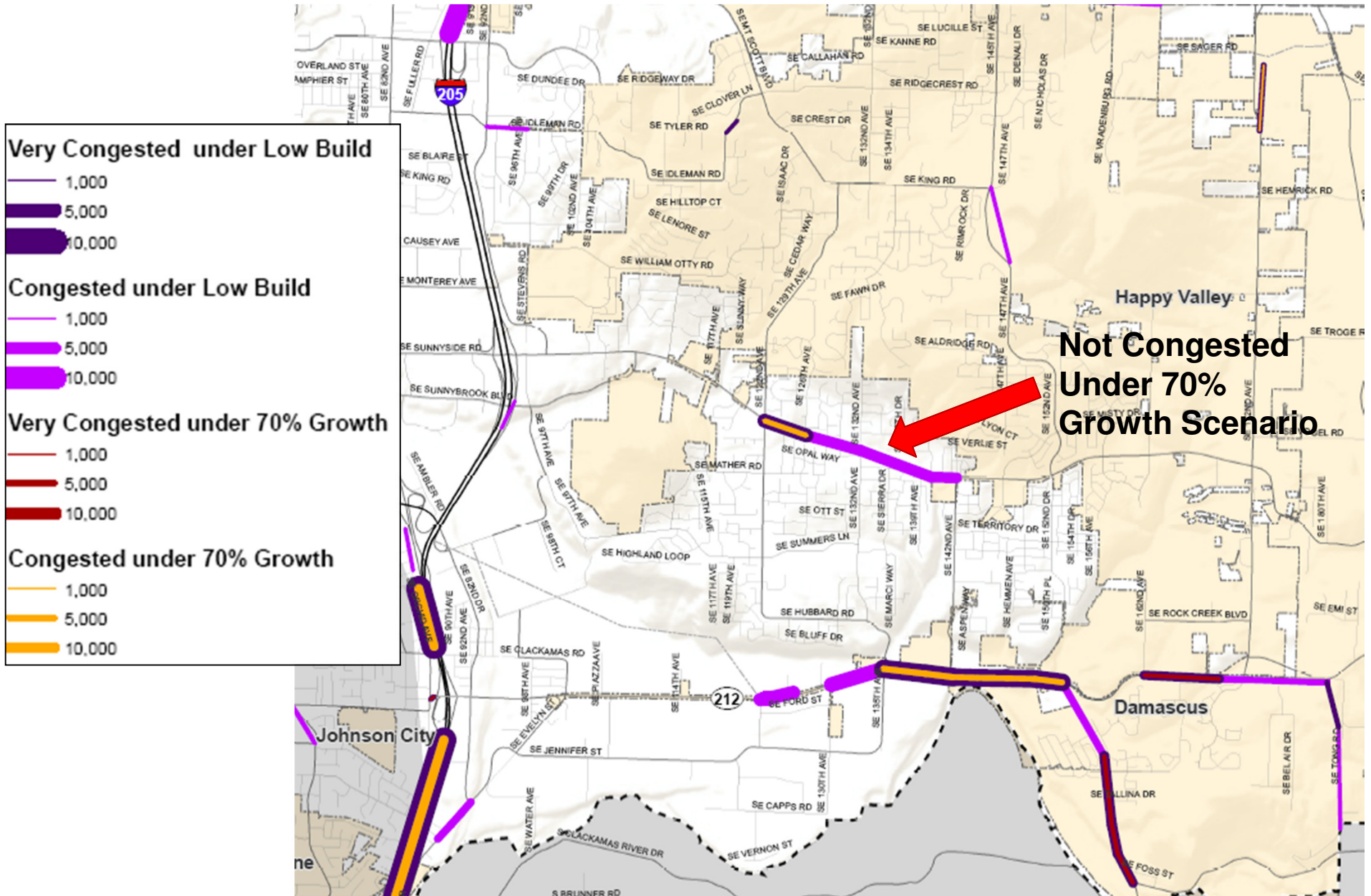
# What is 70% of the Growth Forecast?

- Forecast household growth 2010 to 2035:
  - **59,045** new households
  - 70% of household growth: **41,331** new households
  
- Forecast job growth 2010 to 2035:
  - **72,394** new jobs
  - 70% of job growth: **50,675** new jobs

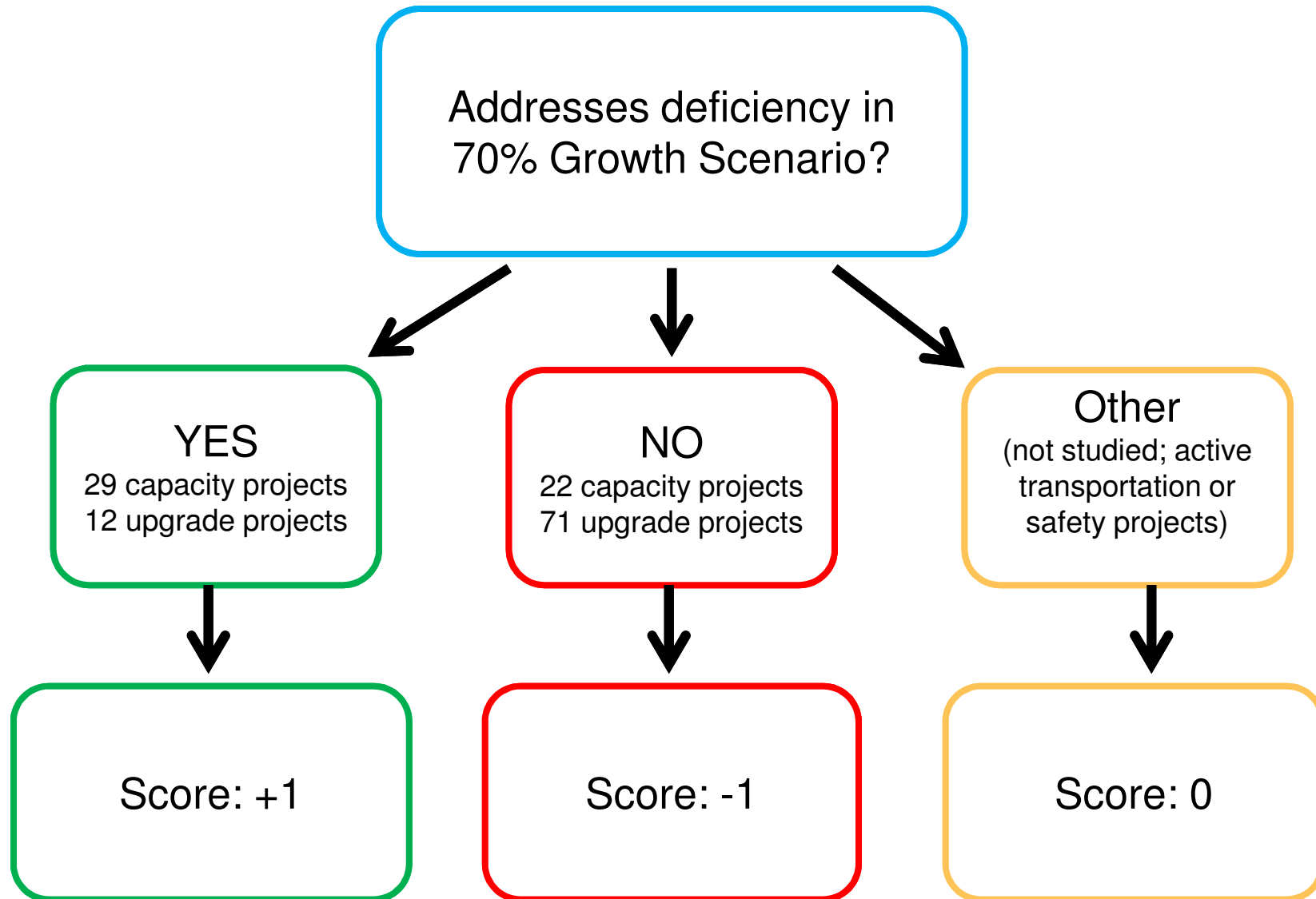
# Key Results – 70% Growth Scenario

- **31** of the 43 intersections failing under the 2035 Low Build Scenario *do not meet standards at 70% growth.*
- Approximately **20** roadway segments that are congested under the 2035 Low Build Scenario *are not congested at 70% growth.*

# Key Results – Congested Roadways



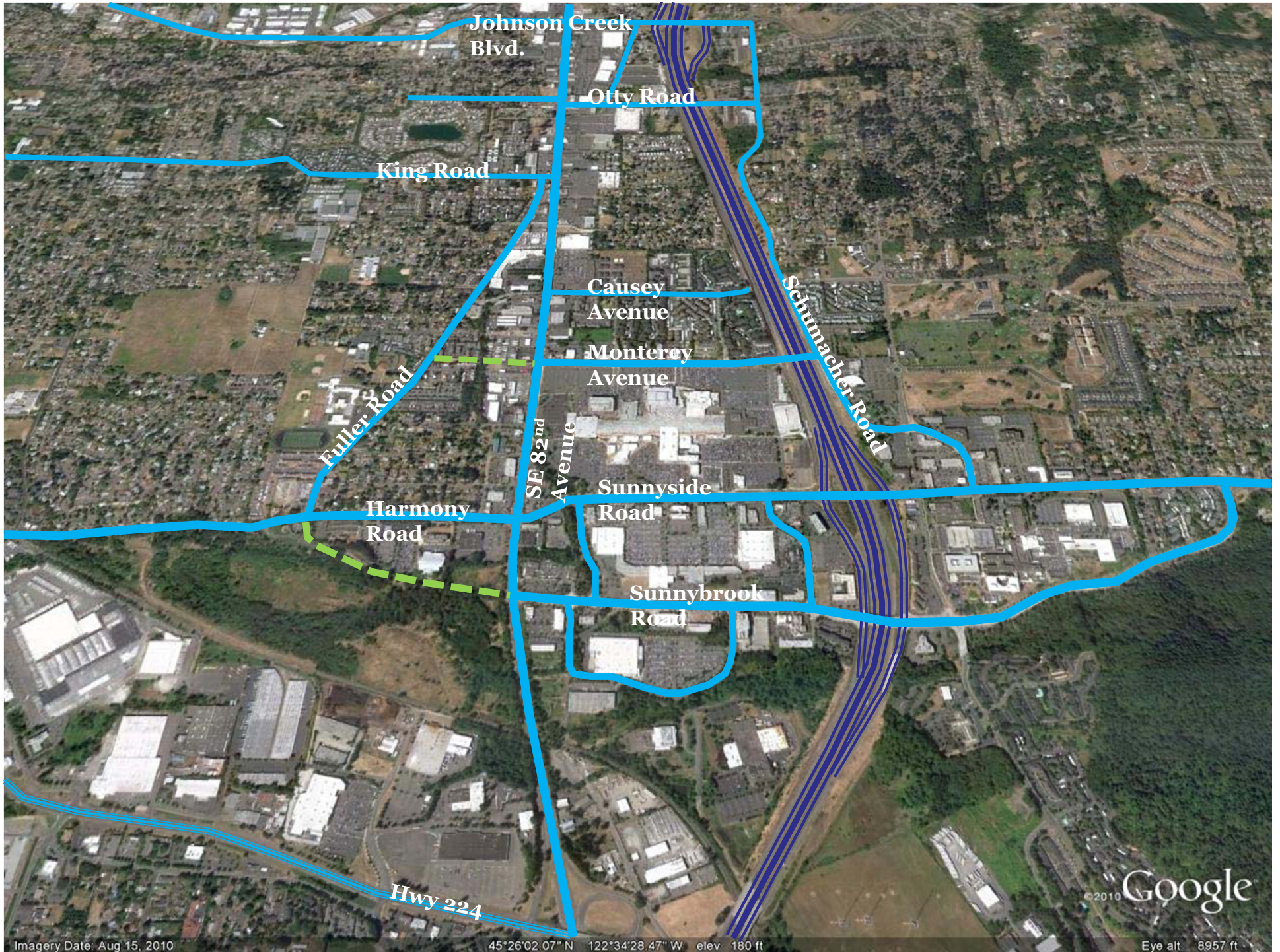
# Recommended Project Scoring





# Dynamic Traffic Assignment (DTA) Analysis

## Clackamas Regional Center Southwest Access Corridor



Johnson Creek  
Blvd.

Otty Road

King Road

Causey  
Avenue

Monterey  
Avenue

Fuller Road

SE 82nd  
Avenue

Schumacher Road

Harmony  
Road

Sunnyside  
Road

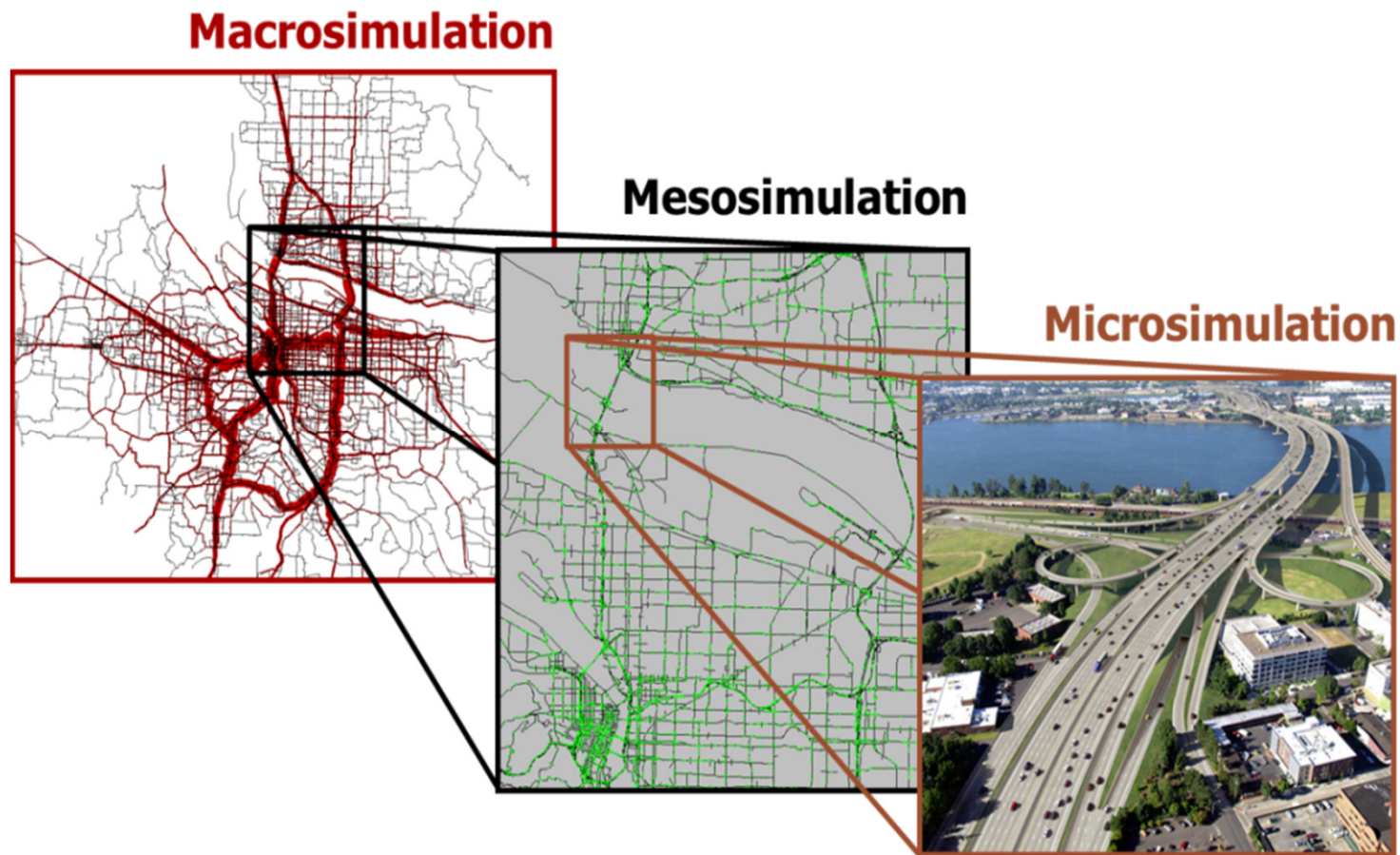
Sunnybrook  
Road

Hwy 224

Google

# Dynamic Traffic Assignment (DTA) Analysis

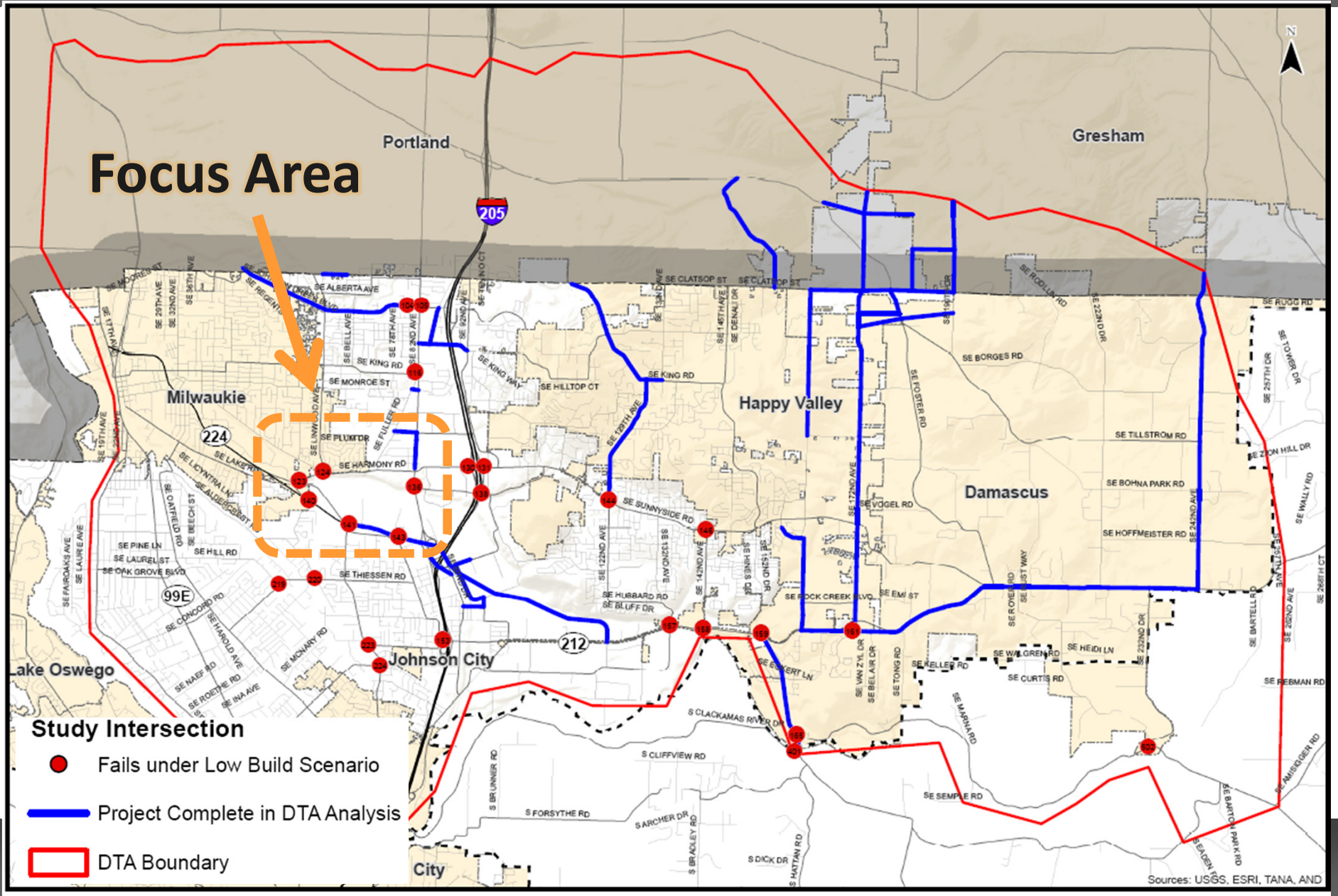
- Analysis tool that models individual travel behavior at a system level = mesosimulation



# Why use DTA?

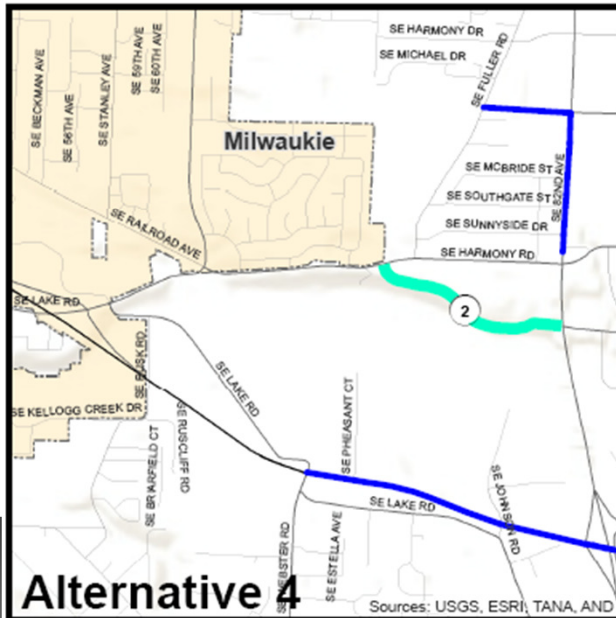
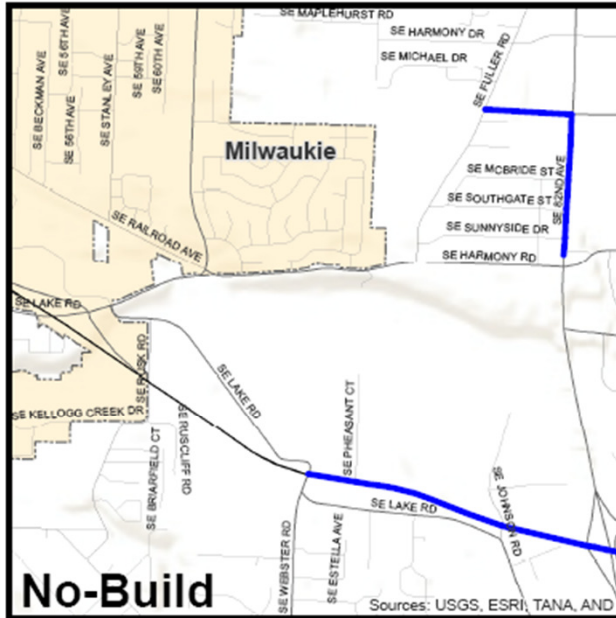
- Offers benefits over static tools, including:
  - Capacity constrained
  - Accounts for signal timing
  - Models variability in roadway conditions
  - Event modeling
  - Relatable Measures of Effectiveness (MOE)
- Provides more detailed, complete comparison of potential improvements for the Clackamas Regional Center Southwest Access Corridor

# Study Area





# Alternatives Evaluated



# Sunnybrook Extension Detail





# DTA Analysis Questions

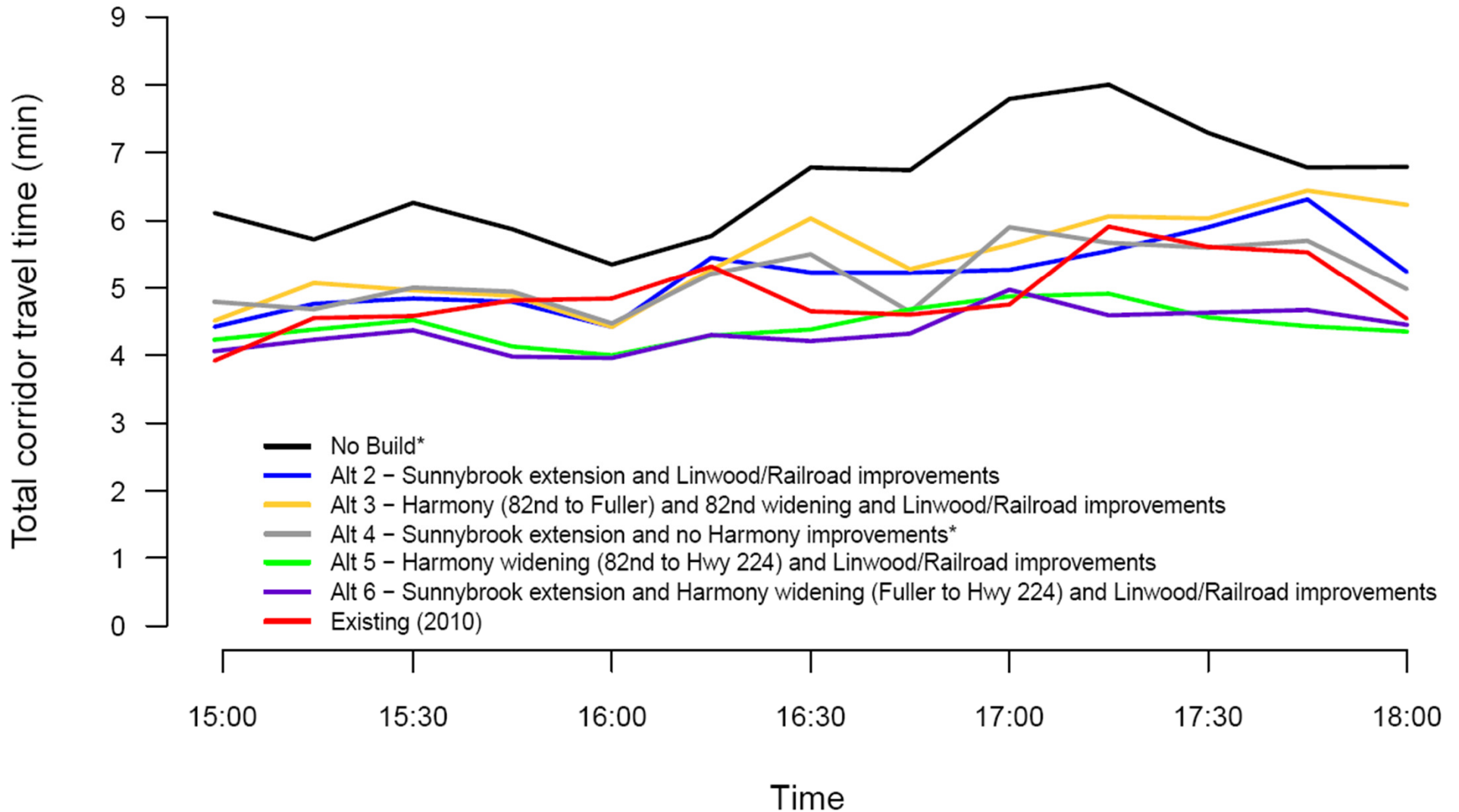
- How does each alternative perform based on the following performance measures?
  - Travel Time
  - Travel Time Reliability
  - Congestion
  - Outflow Volume
  - Queuing
- What improvement(s) is/are necessary to meet current standards?

# Overview of DTA Findings

- Traffic modeled on 8 corridors for year 2035
- Significant differences in performance observed on SE Harmony Road and SE Fuller Road corridors
- Alternative 5 and 6 produced best operations
- Alternatives 2, 3 and 4 produced operations in year 2035 similar to what vehicles experience today

# Harmony Road Findings – Travel Time

## 2035 Average 15-minute Peak Hour Travel Time on SE Harmony Road (Eastbound)



# Harmony Road Findings

- Travel time reliability improved most significantly with Alternatives 5 and 6, followed by Alternatives 2, 3 and 4

## Travel Speeds for Harmony Road Corridor in 2035

Alternative	Eastbound			Westbound		
	5th Percentile	Average	95th Percentile	5th Percentile	Average	95th Percentile
Existing (2010)*	10.3	14.0	17.2	12.5	16.4	20.7
<b>No Build*</b>	<b>7.7</b>	<b>10.2</b>	<b>14.9</b>	<b>11.1</b>	<b>15.3</b>	<b>20.4</b>
2	9.5	13.2	17.7	13.4	18.2	22.0
3	10.4	12.6	15.1	14.5	18.4	21.9
4*	9.8	13.3	17.9	12.4	16.5	21.0
5	14.1	16.2	19.3	18.3	20.3	22.1
6	12.5	16.2	20.0	17.2	19.9	22.3

\* indicates at-grade railroad crossing (not modeled in this analysis)

# Benefit-Cost Comparison

- Cost estimate for each alternative generated
- Travel time saved during PM peak hour monetized

## Benefit/Cost Ratio for 20 Years

Alt.	Cost Estimate	Travel Time Saved during PM Peak Period	Savings per Day	Savings per Year	20 Year Savings	B/C Ratio (20 years)
2	\$30,600,000	2.69 m	\$2,910	\$1,062,150	\$21,243,000	0.49
3	\$29,847,000	2.44 m	\$2,400	\$876,000	\$17,520,000	0.42
4	\$10,600,000	2.11 m	\$2,010	\$733,650	\$14,673,000	0.99
5	\$54,130,000	4.19 m	\$4,760	\$1,737,400	\$34,748,000	0.46
6	\$53,353,000	4.09 m	\$4,910	\$1,792,150	\$35,843,000	0.48

# Conclusions

- Alternatives 5 and 6 provide the **most operational benefits**, producing travel time savings beyond what motorists experience today.
- Alternatives 2, 3 and 4 produce travel times **similar to what motorists experience today**.
- At the current level of rail traffic, grade-separating the intersection at Harmony Road/Linwood Avenue is not likely to significantly reduce travel times on corridor, **but is necessary to allow for intersection improvements**.

# Recommendation Options

**Option #1 - Include Alternative 2 in the TSP project list (3-lane Sunnybrook and Harmony)** because it meets the requirements of the existing County Zoning and Concurrency Ordinances, and allows for continued economic development in the area

**OR**

**Option #2 - Modify current zoning and concurrency measures-of-effectiveness standards** to reduce the needed level of investments and allow motorists to experience longer periods of congestion.

# Draft Project List

- Projects prioritized by total score within sub-area
- Projects will ultimately be divided in to 3 lists countywide:
  1. **20-Year Capital Projects:** highest ranking, about 10% of total projects, totaling about \$444m
  2. **Preferred Capital Projects:** second tier projects, about 10% of total projects, totaling about \$444m
  3. **Long-Term Capital Project Needs:** remaining projects



# Discussion Questions

- Are there low-scoring projects you feel should be moved in to the list of 20-Year Capital Projects?
- Are there concerns related to projects that score high for a particular goal but not overall?
- Are there project synergies that we should consider? (Project synergies are defined as projects that benefit other high-priority projects or provide unique benefits (i.e., serve as a catalyst for economic development))
- Put an orange dot on the map to indicate projects you want to discuss (Mark dot with an “S” to indicate Synergies)

# Next Steps

- **GAPS meetings on March 11-12, 2013:** members will review, discuss, and make recommendations on the draft prioritized project lists for each geographic area
- PMT will develop a draft countywide prioritized project list, separated in to 3 project list categories
- **TAC meeting #7 on March 28, 2013:** TAC will review revised countywide project lists
- **PAC meeting #5b on April 9, 2013:** PAC will review revised countywide project lists