Satisfaction
Triple Win Plans & Projects

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Session Overview

STARS Overview
Case Studies
Lessons Learned
Game
Action Plans

What's the Problem?

Conflicts
- Stakeholders
- Staff
- Electeds
- Performance measures

Lack of Time & Money
Lack of Targets
Narrow benefit/cost

Solutions

Economic Benefit

Solutions

Triple Win
Backcasting
Mode neutral "heavy lifter" performance measures
Comprehensive benefit/cost

What is STARS?

Sustainable
Transportation
Analysis &
Rating
System

STARS
Sustainable Transportation Analysis
& Rating System

**Pilot Plan
Application Manual**
Version 1.0
January 10, 2012

A framework for integrating sustainability
into transportation plans

What is STARS?

Framework to shape, measure and prioritize plans, projects and strategies to achieve specific outcomes

STARS Principles

The Natural Step sustainability
Achieve Multiple Outcomes
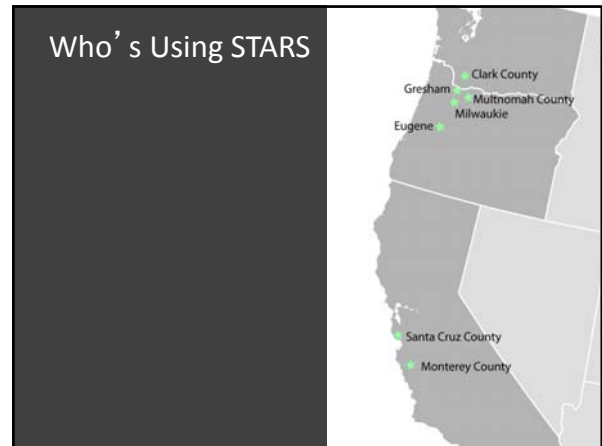Transparent
Accurate
Integrated/Systemic

Twelve Credit Categories

- Integrated process
- Community engagement
- Access
- Safety
- Health
- Equity

- Climate and energy
- Resilience
- Ecological function
- Cost effectiveness
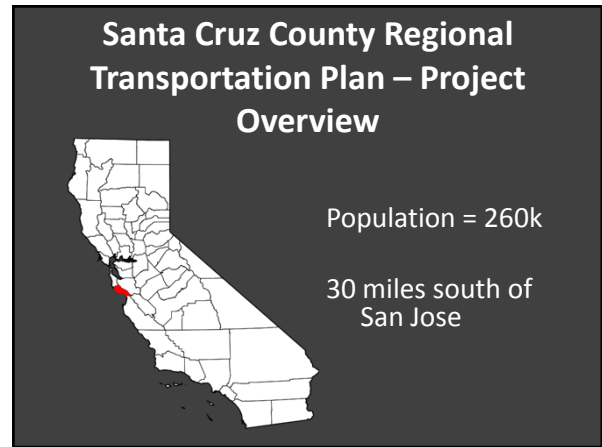- Economic benefit
- Innovation

How Does STARS Work?

1. Foundation
STARS Workshop | Baseline Data | Survey Users

2. Frame
Establish goals, performance measures and targets

3. Test
Test strategies to meet targets | Make decisions | Get rated

4. Follow-up
Monitor on-going performance

Five Ways to Use STARS

- Full STARS
- Assess
- Tune-Up
- Workshop
- Analyze

Who's Using STARS

Clark County
Gresham
Multnomah County
Milwaukie
Eugene
Santa Cruz County
Monterey County

Case Study Slides

- Project overview
- Why they used STARS
- Performance dashboard
- Performance measures
- Innovative methodologies
- Lessons learned (dialogue)

Santa Cruz County Regional Transportation Plan – Project Overview

Population = 260k

30 miles south of San Jose

Santa Cruz County Regional Transportation Council

Why They Used STARS

- Prior Plan Goals and Outcomes Not Aligned with Community Values
  - Reduce GHG Emissions
  - Improve Access and Mobility
  - Improve Transportation Choices
  - Supports Economic Vitality
- Develop a New Plan that Achieves Triple Bottom Line Targets

STARS
Sustainable Transportation
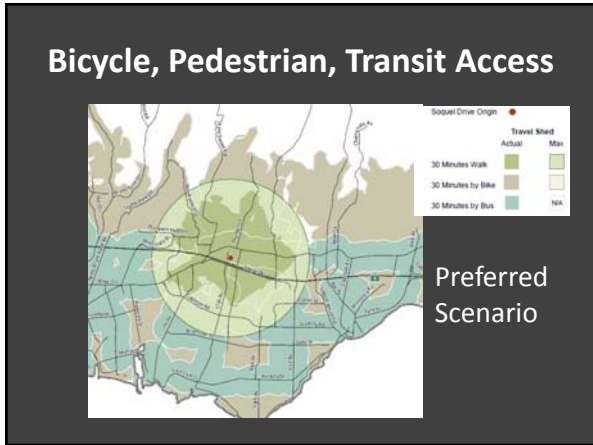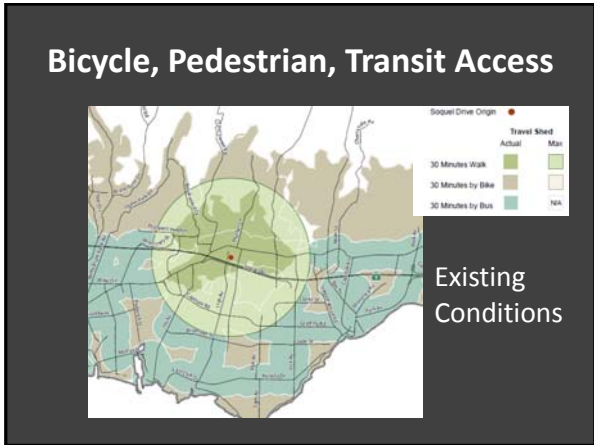Analysis & Rating System

Performance Measures

- Pedestrian, Bicycle, and Transit Access
- Multimodal Network Quality
- Health
- GHG Emissions

- Fuel Consumption/Fuel Expenditures
- Safety
- Maintenance

Access Evaluation

- Pedestrian, Bicycle, and Transit Access
  – Goal: Increase share of population within 30 minutes of key destinations
- Methodology: GIS Network Analysis
- Transportation Disadvantaged Populations
  – Youth, Elderly, Low Income
- Minority Populations

Bicycle, Pedestrian, Transit Access

Existing Conditions

Bicycle, Pedestrian, Transit Access

Preferred Scenario

Bicycle, Pedestrian, Transit Access

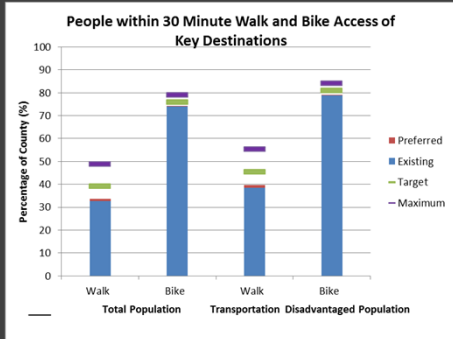| Existing Conditions - Soquel/Highway 1			
Population Group	Max Walk Population	Network Walk Population	Underserved Population
General Population	15,200	4,300	10,900
Transportation Disadvantaged	5,800	1,600	4,200
Minority	8,900	2,500	6,400
Regional Transportation Plan Preferred Conditions - Soquel/Highway 1			
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Bicycle, Pedestrian, Transit Access

Multimodal Network Quality

- MMNQ Complements Access
- Target: Improve MMNQ
- Measures Quality of Pedestrian and Bicycle Network
- Considered 6 methodologies
- "Pedestrian/Bicycle Environmental Quality" Measure Developed for Santa Cruz County

Multimodal Network Quality

Network Score	Along Arterials and Collectors	Local Roads
🟢	6' Sidewalk and 3' buffer or tree wells on both sides	Sidewalks on both sides
🟡	Sidewalk on both sides	Sidewalk on one side
🔴	No Sidewalk on one or both sides	No Sidewalk

Multimodal Network Quality

Multimodal Network Quality: Bicycle Existing Conditions

Multimodal Network Quality: Bicycle Preferred Scenario

Multimodal Network Quality

| Composite Multimodal Network Quality Scores		
	Pedestrian	Bicycle
Condition	Network	Network
Max Possible Score	100	100
Existing System Score	56	26
With Preferred Scenario Projects	72	37

Health

- More Active Transportation = Healthier Population
- 28% of all auto trips are less than 5 minutes ~ 2 miles or less
- Target – shift 33% of those trips to active transportation modes
- Post-process travel model to account for impacts of active transportation investments
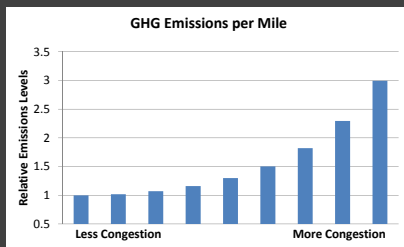
GHG Emissions

- 5% Reduction in Per Capita GHG Emissions
- GHG Emissions Calculation Recipe
  - Total trips
  - Trip length
  - Trips by mode
  - Speed and speed consistency
  - Vehicle performance

Santa Cruz County RTP STARS Analysis Results Summary
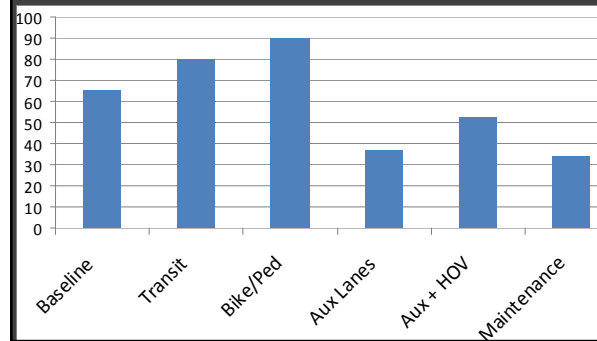
GHG Emissions

- Post-processing of model required
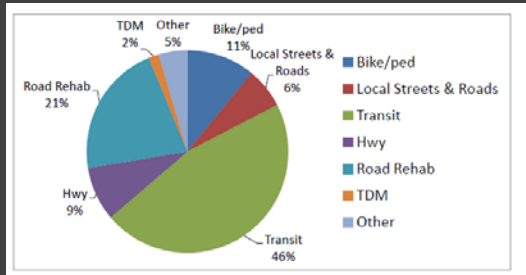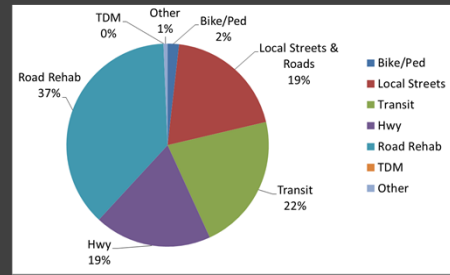- Importance of speed consistency

GHG Emissions

- Santa Cruz is Congested
- Widen Freeway or Other Roads?
  - Induced Travel
  - Right of Way
- HOV Lanes
- TDM
- Arterial TSM
- TSP
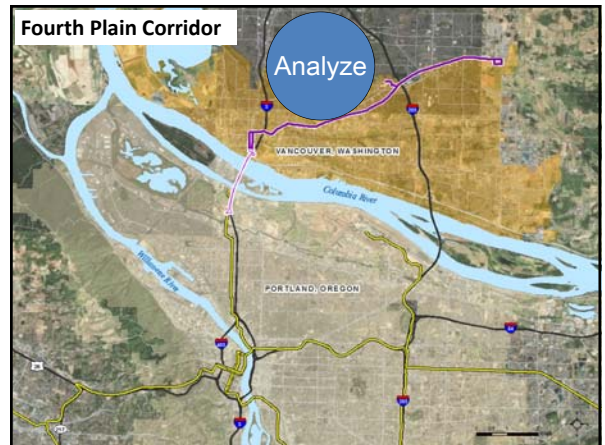- Tolling?
- Bike and Ped Infrastructure

Summary of Results
Santa Cruz Preferred Scenario

Summary of Results
Butte County Preferred Sceanario

Lessons Learned

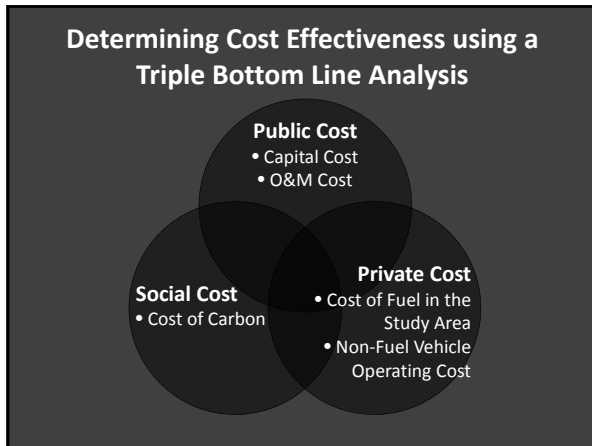**Fourth Plain Corridor**

Analyze

Why C-TRAN Chose to Use STARS

STARS quantifies non-typical project benefits and costs, including:

- Net cost to taxpayers
- Local economic benefit
- Climate & energy implications

		Fourth Plain TIP Dashboard
TSM	**BRT**	**…over the 20 year lifetime of the project…**
$12.91	$8.02	per **boarding ride**
$33.5 M	$93.4 M	amount **saved** by **local taxpayers**
$71.6 M	$125.3 M	transportation **costs saved**
561,000	981,700	gallons of *gasoline saved*
5,000	8,700	metric tons of *CO2 (GHG) not emitted*

Determining Cost Effectiveness using a Triple Bottom Line Analysis

Public Cost
• Capital Cost
• O&M Cost

Social Cost
• Cost of Carbon

Private Cost
• Cost of Fuel in the Study Area
• Non-Fuel Vehicle Operating Cost

Lessons Learned

Conduct a workshop

Taxpayer perspective > agency perspective

Power of backcasting

Engage decision-makers early & continuously

DRAFT MAX Trail Bicycle Demand Analysis

4 Types of Transportation Cyclists
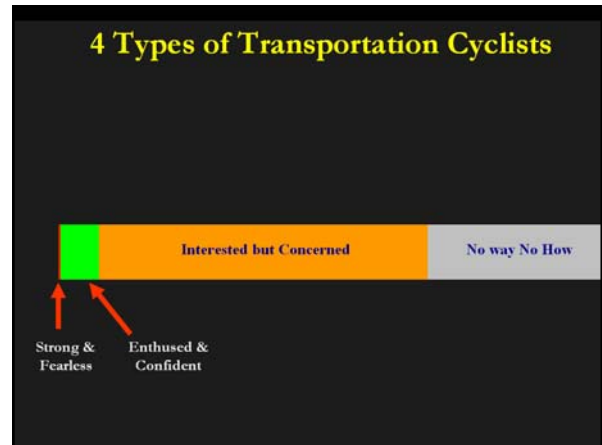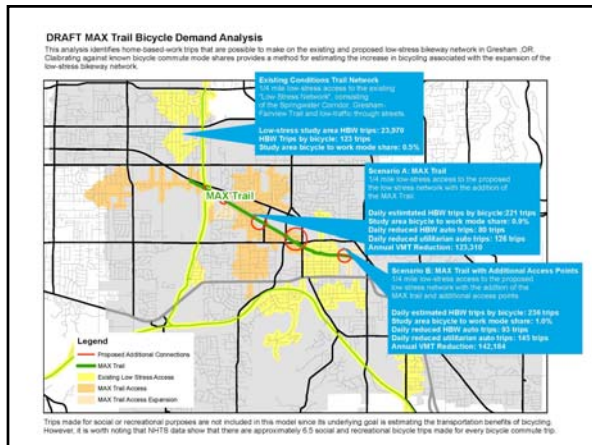
Low Stress Analysis Results

New walk trips

New bike trips

Vehicle miles reduced

Mode shift

Economic benefit

Greenhouse gas reduction

Lessons Learned

STARS can provide valuable information at small scale

Increasing walking and cycling requires much more than building sidewalks and bike lanes

Game!!

- Thinking in triple win terms
- Group exercise
- Performance Measures (blue)
- Targets (yellow)
- Rate them as:
  – Single Win: Achieve only one goal
  – Double Win: Achieve two goals
  – Triple Win: Achieve three goals

Call for Projects

Action Plan

What did you hear that you may want to investigate or use?

What plans or projects might they apply to?

What actions will you take next?

Satisfaction
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How were the STARS findings used?

- Evaluation Criteria
  - Helped to determine the LPA
- Funding
  - $3 million Regional Mobility Grant from WSDOT
  - Section 5309 Very Small Starts Grant

"Heavy Lifter" Performance Measures

1. VMR = climate, fuel consumption, economic benefit
2. Mode share = health
3. Fatalities & Injuries = equity, health, VMT
4. Multimodal Score = VMT, mode share, health, safety, economic benefit
5. Cost Effectiveness = all of the above