Sustainable Transportation Analysis & Rating System (STARS)
Creating High Performance Transportation Plans and Projects

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CTS 24th Annual Transportation Research Conference
What We’ll Cover

Problems & Solutions

What is STARS

How Does STARS Work

Case Studies

Call for Projects
Problems

1. Unsustainable system
   • Health
   • Climate
   • Cost, especially private and social
   • Equity
Problems

1. Unsustainable system
2. Diminishing resources, increasing needs
Problems

1. Unsustainable system
2. Diminishing resources, increasing needs
3. Tools and measures don’t match needs
   • Multimodal demands, single mode tools
   • Too many measures, hard to prioritize
Problems

1. Unsustainable
2. Diminishing resources, increasing needs
3. Tools and measures don’t match needs
4. We don’t typically track or reward performance
Green Dividend

24.3 Median commute miles per day for 33 most populous US metro areas

20.3 Average daily miles for Portland area commute

2.9 Billion miles saved compared to median

Transportation costs saved compared to median $1.1 Billion

$15 per hour Estimated value of time spent commuting

100 million hours less traveled per year saves $1.5 Billion

Total savings per year $2.6 Billion

CEOs for Cities
Solutions

1. Optimize for triple bottom line results (not modes, not single measures)
Solutions

1. Optimize for triple bottom line results, not modes
2. Evaluate public, private and social costs
Solutions

1. Optimize for triple bottom line results
2. Evaluate public, private and social costs
3. Reward performance
What is STARS?

• Voluntary
• National
• Process
• Sustainability Principles
• Indicators and Outcomes
• Simplifies
• Rate, Certify & Reward
Meet the Family

Plans

STARS
Sustainable Transportation Analysis & Rating System
Pilot Plan Application Manual
Version 1.0
January 10, 2012
A framework for integrating sustainability into transportation plans

Projects

Sustainable Transportation Analysis and Rating System (STARS)
Pilot Project Application Manual
Version 1.1
February 6, 2011
A project of the North American Sustainable Transportation Council and the Portland Bureau of Transportation

Safety, Health & Equity

STARS Safety, Health, and Equity Credits
 Integrating safety, health, and equity into transportation projects
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
<table>
<thead>
<tr>
<th>STARS Performance Dashboard</th>
<th>Alternative 1</th>
<th>Alternative 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel Consumption/GHG Emissions</td>
<td>-12%</td>
<td>-3%</td>
</tr>
<tr>
<td>Multimodal Travel Time</td>
<td>-2%</td>
<td>-11%</td>
</tr>
<tr>
<td>Net Cost</td>
<td>$23m/year</td>
<td>$39m/year</td>
</tr>
<tr>
<td>Reduce Fatalities and Injuries</td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Equity</td>
<td>High</td>
<td>Medium</td>
</tr>
</tbody>
</table>
How Is STARS Different?

• Integrates projects and plans
• Addresses planning *and* operations
• Collaborative workshops
• Backcast from targets
• Outcomes, not just modes
• Cost effectiveness
• Higher bar: triple win
Uses of STARS

- Regional Transportation Plan
- City Transportation Plan
- Corridor Investment Plan
- Bus Rapid Transit Analysis
- Bike/Ped Trail Access
- Complete Streets Analysis
- LRT Station Area Plan
- Economic Benefit Analysis
Case Study: SCCRTC RTP

2035 targets
• Reduce fuel consumption, VMT and GHG 5% per capita
• Reinvest in the local economy $50 million (fuel)
• Improve non-SOV mode share 8%
• Reduce fatalities & injuries 50% (all modes)
• Increase average PCI to 70

5 chapters of policies to three pages
Prioritizing projects based on advancing targets
Innovative Multimodal Network Quality Score
- ADT
- Speed
- Grade
- Intersection Quality
- Stop Frequency

Table 5. Bicycle Intersection and Stop Frequency LOS

<table>
<thead>
<tr>
<th>LOS</th>
<th>Unsignalized Intersections</th>
<th>Stop Frequency (Neighborhood Bikeways Only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate crossing of arterial or collectors along bikeways</td>
<td>&lt; One stop per 1/4 mile</td>
<td></td>
</tr>
<tr>
<td>Marked, but insufficient crossing of arterial or collector along bikeway</td>
<td>Stops spaced at 1/8 to 1/4 mile</td>
<td></td>
</tr>
<tr>
<td>No marked/controlled crossings of arterial or collector along bikeway</td>
<td>&gt; One stop per 1/8 mile</td>
<td></td>
</tr>
</tbody>
</table>
## Case Study: 4th Plain BRT (LPA vs. No Build)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Net Cost to Local Taxpayers</td>
<td>Save $93.4 million</td>
</tr>
<tr>
<td>Cost of Vehicle Use</td>
<td>Save $125.3 million</td>
</tr>
<tr>
<td>GHG Emissions</td>
<td>Reduced 8,700 metric tons</td>
</tr>
</tbody>
</table>
Why Use STARS

- Achieve economic, environmental and social results
- Save time and money
- Increase the likelihood of broad support
- Increase the likelihood of funding
- Know you’ve raised the bar
Call for Plans/Projects & Trainings

• Is there a need to bring together staff, elected officials and/or stakeholders with different values?
• Is plan/project in the planning or early design phase?
• Does the plan/project have multiple objectives and/or involve prioritizing?
• Do you need to achieve specific targets?
• Are there resources available to use STARS?
CLIMATE SUMMIT

WHAT IF IT'S A BIG HOAX AND WE CREATE A BETTER WORLD FOR NOTHING?

- ENERGY INDEPENDENCE
- PRESERVE RAINFORESTS
- SUSTAINABILITY
- GREEN JOBS
- LIVABLE CITIES
- RENEWABLES
- CLEAN WATER, AIR
- HEALTHY CHILDREN
- ETC. ETC.
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