

Project Performance Assessment Working Group Meeting

June 21, 2017



Benefit Cost Analysis

June Meeting Goal:

- present SACOG's BCA tool to date
- review recent conference and best practice research
- working group feedback on tool and use

Review

April:

- BCA methodology and how tools works
- SACOG application (made up project)
- Actual Bay Area Projects

May

- Model overview workshop
- TRB conference

Upcoming

June (today):

- 1st round of test projects
- best practice conference

July

- 2nd round of test projects
- feasibility of new measures

August

- threshold and sensitivity testing

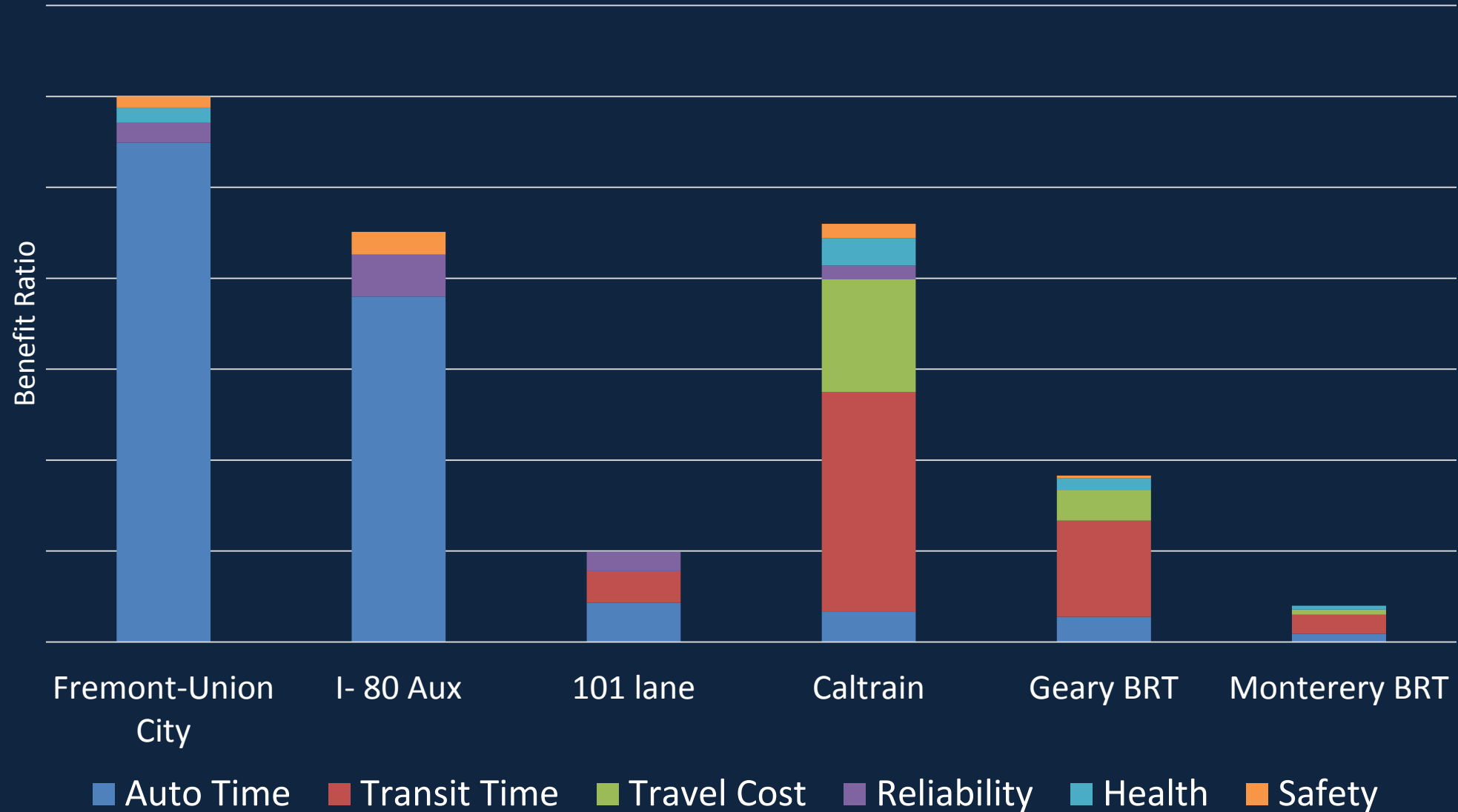
September

- synthesis of working group feedback

Example Project

	Benefits	Costs
Travel Time	\$296,938	
Reliability Improvement	\$45,180	
Safety	\$91,856	
Travel Costs		\$32,580
Emissions Reduction		\$9,331
Public Health		\$0
Construction and Operating		\$275,000
TOTAL	\$433,974	\$316,911
B/C Ratio= 1.37		

Bay Area Projects



June Meeting

Working Group Discussion on BCA method

- How is tool envisioned to be used?
- How does tool work?
- Existing performance indicators and additional measures

Application of SACOG Tool

Working group provides feedback on application of SACOG draft tool, in context of best practice and local priorities

Application of SACOG Tool

Bundle of projects to test functionality

-Transit expansion bundle- \$700 million

-HOV lanes bundle- \$400 million

**-two different bundles of arterial improvements
(one of \$150 million, one of \$400 million)**

-bike and ped improvements bundle- \$40 million

HOV lanes	Benefits	Costs
Auto Time	722,000 hours	
Transit Time	13,000 hours	
Bike/Walk Time	0 hours	
Truck Time	124,000 hours	
Reliability	250,000 hours	
Safety		19 more accidents
User operating		25 million VMT
User ownership		
Emissions		12,000 metric tons
Public Health		
Construction/ Operating		\$10 million
TOTAL	\$12 million	\$11 million

B/C Ratio= 1.1

Transit Bundle	Benefits	Costs
Auto Time	65,000 hours	
Transit Time	810,000 hours	
Bike/Walk Time	500 hours	
Truck Time	12,000 hours	
Reliability	65,700 hours	
Safety	7 fewer accidents	
User operating	8 million less VMT	
User ownership	500 fewer	
Emissions	5,500 metric tons	
Public Health	1,400 active people	
Construction/ Operating		\$28 million
TOTAL	\$30 million	\$28 million

B/C Ratio= 1.2

Arterial Bundle #1	Benefits	Costs
Auto Time	650,000 hours	
Transit Time	4,000 hours	
Bike/Walk Time		
Truck Time	122,000 hours	
Reliability	145,000 hours	
Safety		
User operating		12 million VMT
User ownership		30 more
Emissions		500 metric tons
Public Health		0
Construction/ Operating		\$9 million
TOTAL	\$14 million	\$12 million

B/C Ratio= 1.1

Arterial Bundle #2	Benefits	Costs
Auto Time	150,000 hours	
Transit Time	150 hours	
Bike/Walk Time	125 hours	
Truck Time	33,500 hours	
Reliability	50,000 hours	
Safety		2 accidents
User operating		3.5 million VMT
User ownership		50 more
Emissions		1,000 metric tons
Public Health		
Construction/ Operating		\$3 million
TOTAL	\$3 million	\$4.5 million

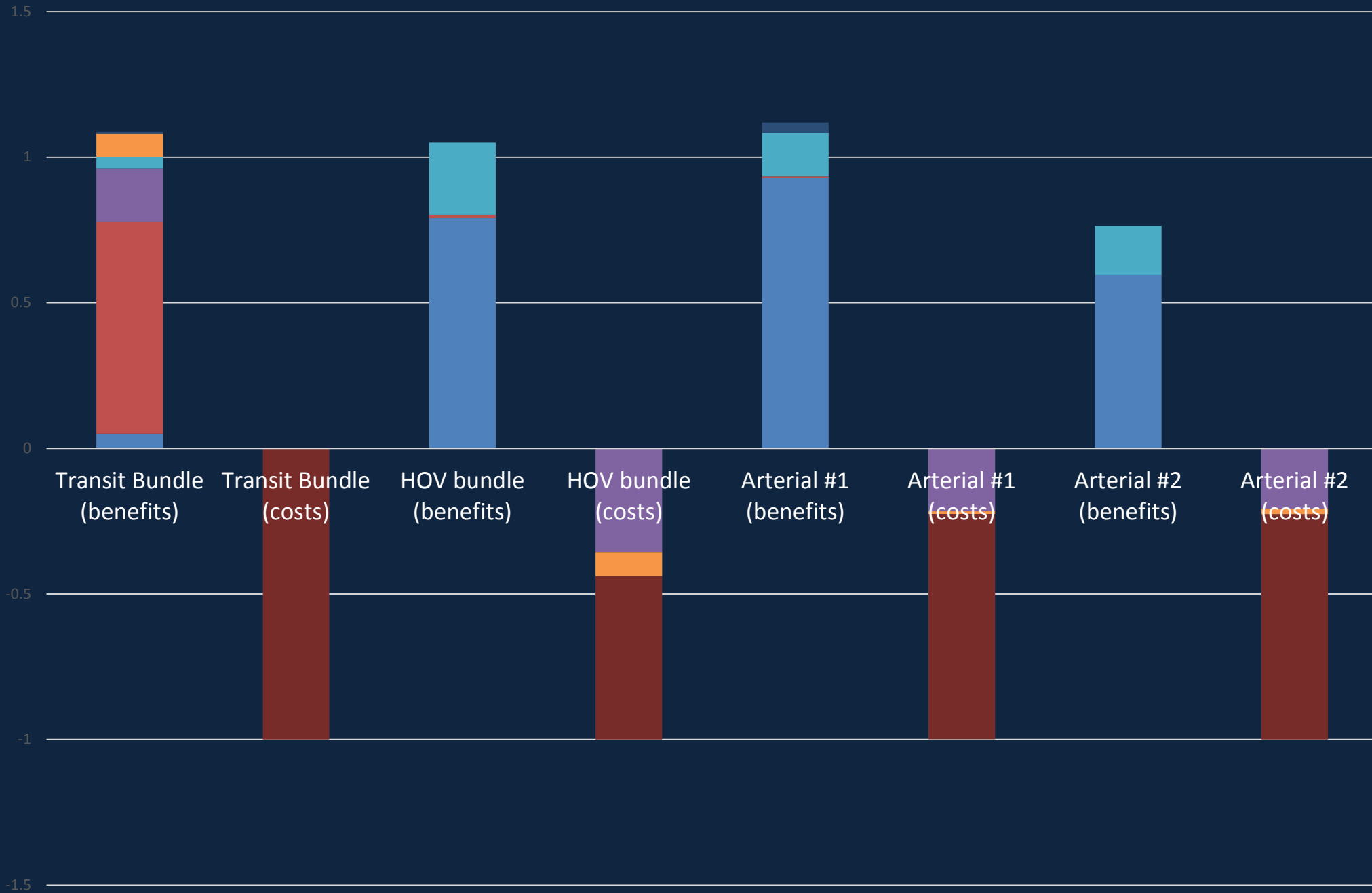
B/C Ratio= .7

Bike Ped Bundle	Benefits	Costs
Auto Time	19,000 hours	
Transit Time	40,000 hours	
Bike/Walk Time	307,000 hours	
Truck Time	-2,000 hours	
Reliability	13,000 hours	
Safety	1 fewer accident	
User operating	1.5 million less VMT	
User ownership	72 fewer	
Emissions	700 metric tons	
Public Health	200 active people	
Construction/ Operating		\$1.8 million
TOTAL	\$7.5million	\$1.8 million

B/C Ratio= 3.8

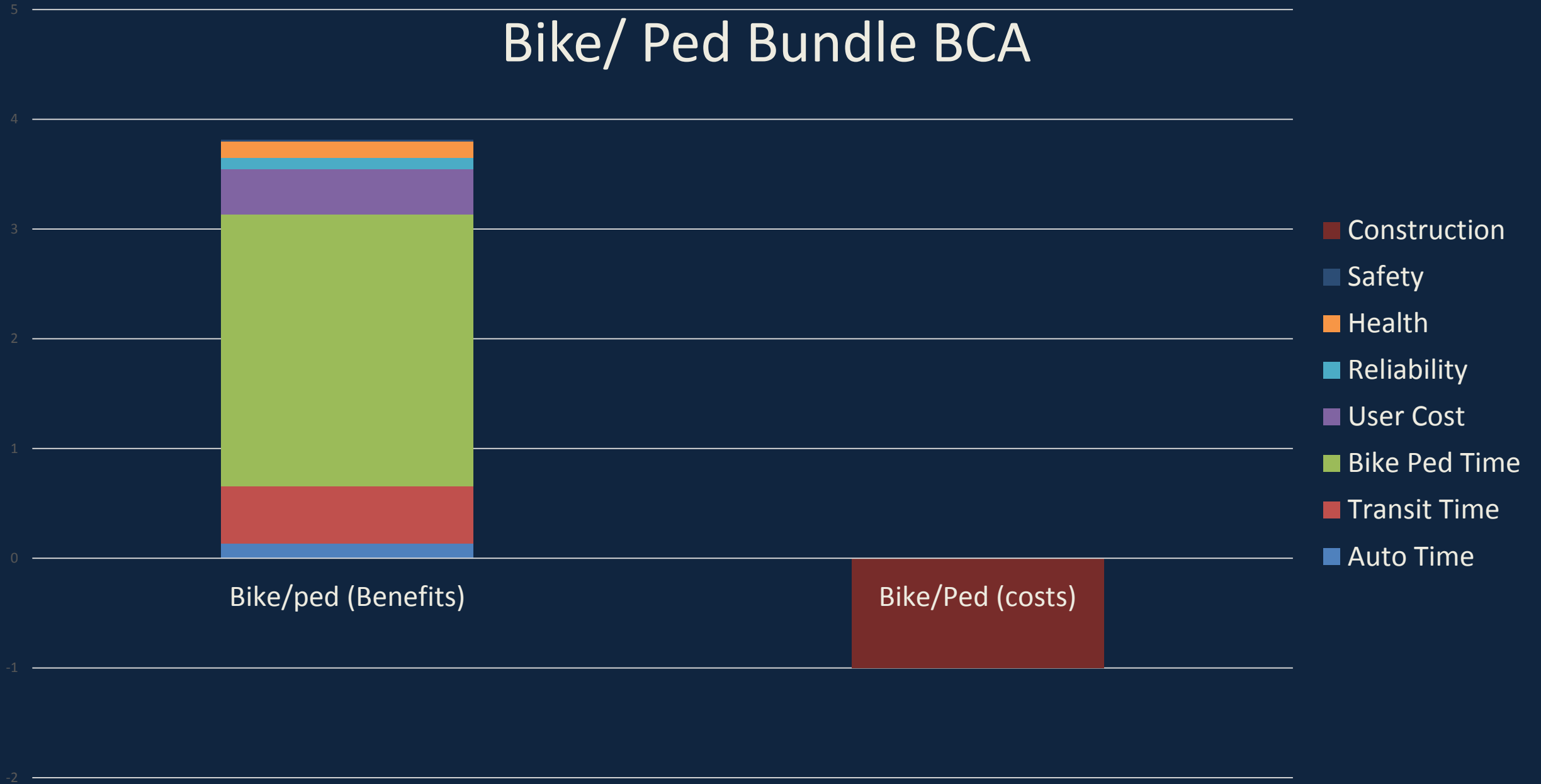
	Bundle of Transportation Projects				
Time Savings	Transit Package	Bike and ped	HOV lanes	Arterial Bundle #1	Arterial Bundle # 2
Auto Travel Time	65,000 hours	18,000 hours	722,000 hours	650,000 hours	150,000 hours
Transit Travel Time	810,000 hours	40,000 hours <i>(note trips)</i>	13,000 hours	4,000 hours	150 hours
Truck Travel Time	12,000 hours	-2,000 hours	124,000 hours	122,000 hours	33,500 hours
Bike/Ped Travel Time	500 hours	300,000 hours	0 hours	0 hours	0 hours

	Bundle of Transportation Projects				
Additional measures	Transit Package	Bike and ped	HOV lanes	Arterial Bundle #1	Arterial Bundle # 2
Reliability	65,700 hours	13,170 hours	250,000 hours	145,000 hours	50,000 hours
User costs	7 million <i>fewer</i> VMT	1.5 <i>fewer</i> million VMT	25 million VMT	12 million VMT	4 million VMT
Emissions	5,550 <i>fewer</i> metric tons	700 <i>fewer</i> metric tons	12,000 metric tons	500 metric tons	1,000 metric tons
Public Health	1,400 active people	200 active people			



- Construction
- Safety
- Health
- Reliability
- User Cost
- Bike Ped
- Transit Time
- Auto Time

Bike/ Ped Bundle BCA



Best Practice

Conference Summary

National Review

Framework: Performance Outcomes Analysis

- Outcomes (reduce driving)
 - Factors (land use, multi-modal connections)
 - Indicators (density, mix of uses, transit)

Outcomes

Current Framework

Reduce Driving

Reduce Bottlenecks

Increase Multi-Modal Travel /
Create Transportation Options

Create Economic Benefits

Improve Goods Movement

Improve Safety and Security

State of Good Repair

Potential Additions

Equity

Public Health

Technology / Smart Mobility

Air Quality

Innovative / Efficient Project
Delivery

Natural Resource Conservation /
Environmental Quality

Factors

Reduce Driving

- Land Use & Site Enhancement
- Increase Multi-Modal Connectivity
- Transportation Demand Management

State of Good Repair

- Asset Management Systems
- Pavement Conditions
- Transit Fleet Status

Improve Safety and Security

- Reduce Fatalities & Injuries
- Emergency Routing
- Public Place Making

Increase/Improve Transportation Choice

- Complete streets & corridors
- Remove gaps and barriers
- Last mile connections

Indicators

Land Use & Site Enhancement

- Community characteristics
- Employment and/or housing density
- Land use mix
- Amenities

