

APTA

Sustainability and Public  
Transportation Workshop

August 2-4, 2009

# Making the Business Case for Sustainable Investment

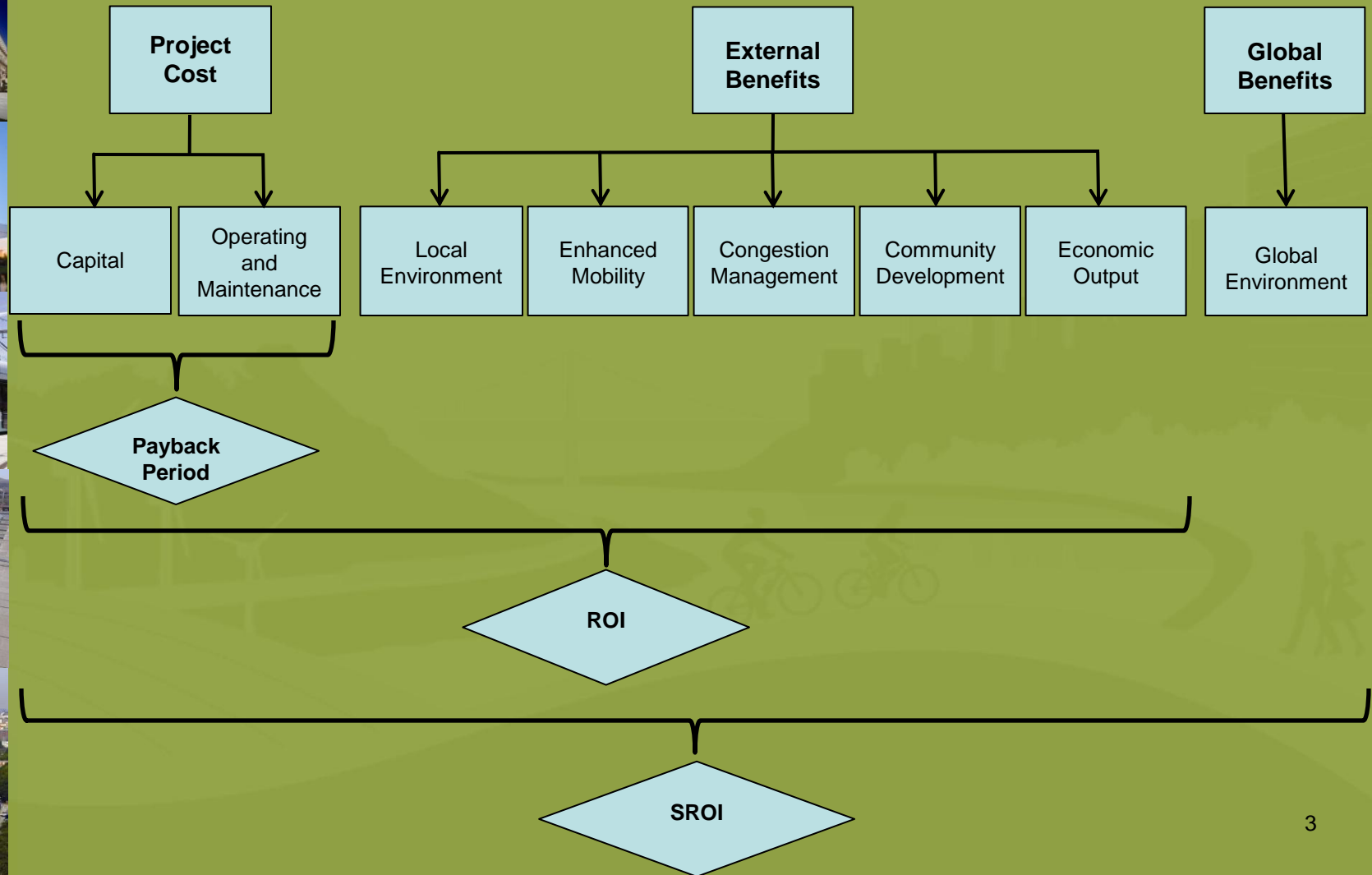


# TIGER PROGRAM CRITERIA



COST-BENEFIT ANALYSIS	TIGER CRITERIA				
	State of Good Repair	Economic Competitiveness	Livability	Sustainability	Safety
<i>Savings in Facility and Equipment O&amp;M</i>	√	√			
<i>Savings in Users' Vehicle Operating Cost</i>	√				
<i>Increased Employment, Output and Income</i>		√	√		
<i>Savings in Travel Time</i>		√	√		
<i>Economies of Agglomeration and Increased Land Value</i>		√	√	√	
<i>Budgetary Savings to Low-Income Users</i>			√		
<i>Reductions in Environmental Emissions</i>			√	√	
<i>Improved Safety</i>			√		√

# SROI – Considers All Benefits



# NY MTA – Example #1

## Grand Central Terminal

- Energy Efficient Lighting: 1,700 light bulbs to be replaced with energy-efficient compact florescent bulbs

<u>METRIC</u>	<u>RESULT</u>
Financial - Discounted Payback Period (DPP)	Under a year
Financial - Return on Investment (ROI)	17.9%
Sustainable - Return on Investment	19.2%
Financial - Net Present Value (NPV)	\$1.2M
Sustainable - Net Present Value	\$1.3M

## Corona Maintenance Shop

- Rainwater Harvesting and Water Reclamation: A rooftop rainwater collection system and grey water reuse system to be installed

<u>METRIC</u>	<u>RESULT</u>
Financial - Discounted Payback Period (DPP)	12.5 years
Financial - Return on Investment (ROI)	-52%
Sustainable - Return on Investment	41%
Financial - Net Present Value (NPV)	-\$0.4M
Sustainable - Net Present Value	\$0.3M

# Example #3

## Various Facilities

- Installation of Solar Panels: Considered 6MW of renewable power to be generated by solar panels installed on MTA facilities

<u>METRIC</u>	<u>RESULT</u>
Financial - Discounted Payback Period (DPP)	Never
Financial - Return on Investment (ROI)	-104%
Sustainable - Return on Investment	-80%
Financial - Net Present Value (NPV)	-\$3.0M
Sustainable - Net Present Value	-\$2.3M

# Range of Carbon Values



- **Market Value:** Market price as quoted on the European Climate Exchange based on Cap and Trade
  - As 12 Dec 2008 = **\$19.86** USD/ton
- **Economic Value – Low: \$8.08** USD/ton: Estimate of William Nordhaus, “Question of Balance: Weighing the Options on Global Warming Policies”, 2008
- **Economic Value: - High: \$73.79** USD/ton: Estimate of Nicholas Stern, “Economics of Climate Change: The Stern Review, 2006

# Estimated rates of Return on Transit Capacity and Modernization



CATEGORY OF TRANSIT INVESTMENT	ECONOMIC RATE OF RETURN	RISK ANALYSIS	
		LOW	HIGH
Additional Capacity to Existing Systems	54%	39%	64%
New Rail Transit Systems	35%	15%	52%
Modernization	32%	13%	55%



# So Why Use SROI?

- ✓ Proven Cost-Benefit Analysis based approach to making planning & budgeting decisions
- ✓ Incorporates non-cash benefits and externalities into the decision making process
- ✓ Provides outcomes using state-of-the-art risk analysis techniques
- ✓ Helps generate consensus by being both interactive and transparent
- ✓ Helps projects **get funding**

