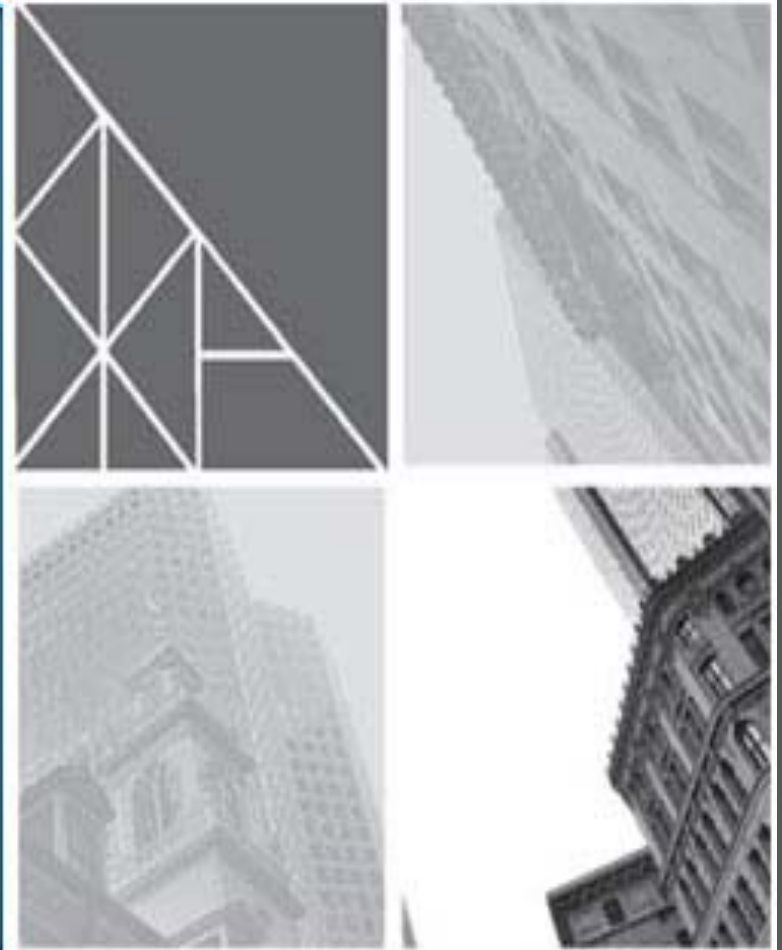




Sustainable  
Return on  
Investment:  
City of Boston  
and ARRA-  
Related  
Projects



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# Presentation Outline

- City of Boston's SROI Goals
- The Role of HDR Decision Economics
- American Recovery and Reinvestment Act (ARRA)
- Portfolio of Projects for the City of Boston
- Selected Data

# City of Boston's Goals for SROI

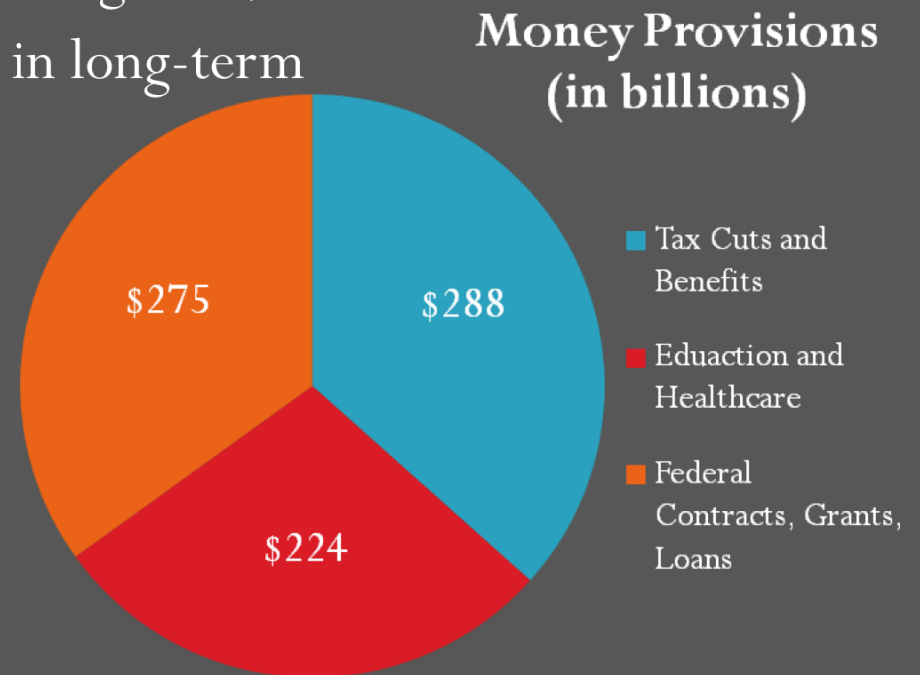
- A commitment from the city to fully track ARRA projects
  - Money in, money out
  - Job creation
  - Economic impact
- Current modeling effort limitations:
  - The benefits on some projects were not fully captured
    - Energy efficiency an important part of the ARRA funded projects
- Provide model for how to assess ARRA projects and augment the city's efforts for transparency in the federal stimulus process.

# HDR's Role

- Develop template to track key investment variables
- Work with different city departments to obtain data inputs
- Create sustainability measures based on HDR's SROI approach
- Assess Double Bottom Line
  - Economic
  - Environmental (energy efficiency, water preservation, etc)
- Review regional economic impact analysis
  - Contributions for Gross Regional Product
  - Tax generation
  - Indirect and induced job creation

# The American Recovery and Reinvestment Act (ARRA)

- Provisions of the Act
  - Create new jobs as well as save existing ones;
  - Spur economic activity and invest in long-term economic growth;
  - Foster unprecedented levels of accountability and transparency in government spending.



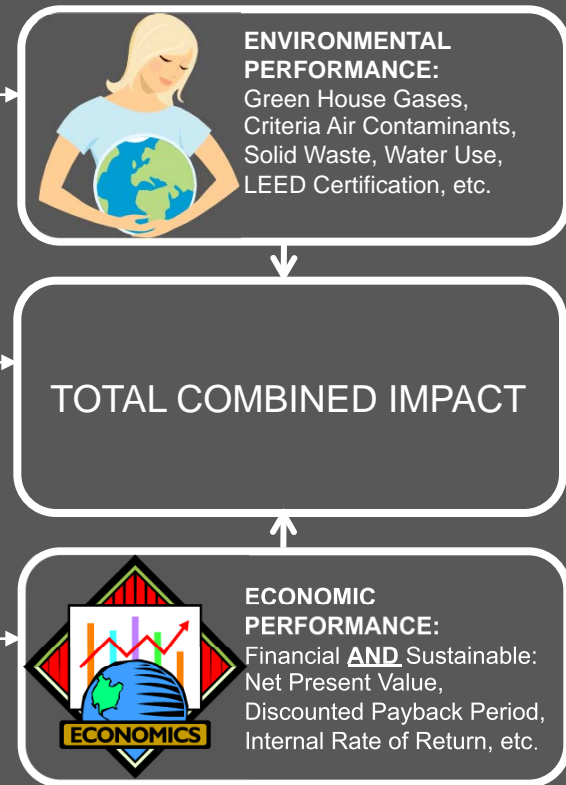
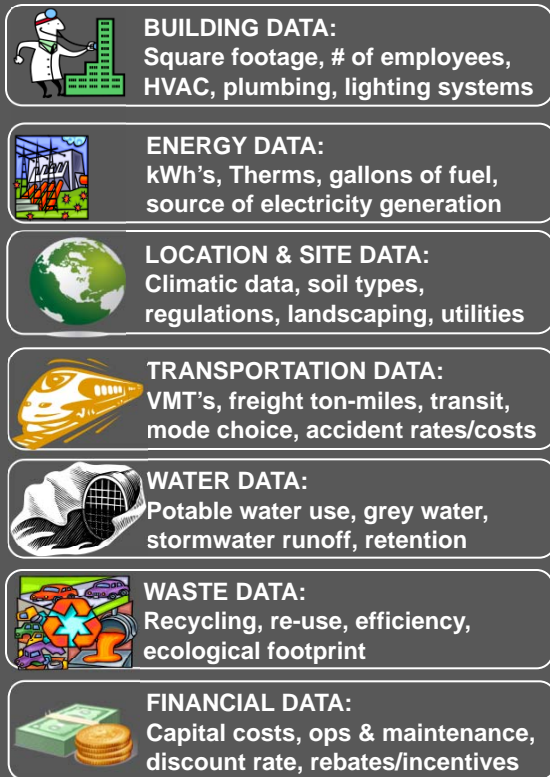
# ARRA in Boston Overview

Objective	Examples
Strengthening Boston's Economy (Creating New Jobs)	<ul style="list-style-type: none"><li>•Transportation Infrastructure Investments</li><li>•Broadband Technologies Opportunities Program</li><li>•Job Training Disadvantaged and Dislocated Adults</li></ul>
Improving Housing and Fighting Homelessness	<ul style="list-style-type: none"><li>•Public Housing Modernization</li><li>•Stabilizing Neighborhood Community</li><li>•Homelessness Prevention and Rapid Re-Housing</li></ul>
Expanding Youth Opportunities	<ul style="list-style-type: none"><li>•Title I</li><li>•IDEA</li><li>•Summer and Year-Round Jobs</li></ul>
Greening the City	<ul style="list-style-type: none"><li>•Renew Boston</li><li>•Solar Market Transformation Pilot</li></ul>
Increasing Public Safety and Public Health	<ul style="list-style-type: none"><li>•Community Orienting Policing Services</li><li>•Boston Senior Health and Nutrition</li></ul>

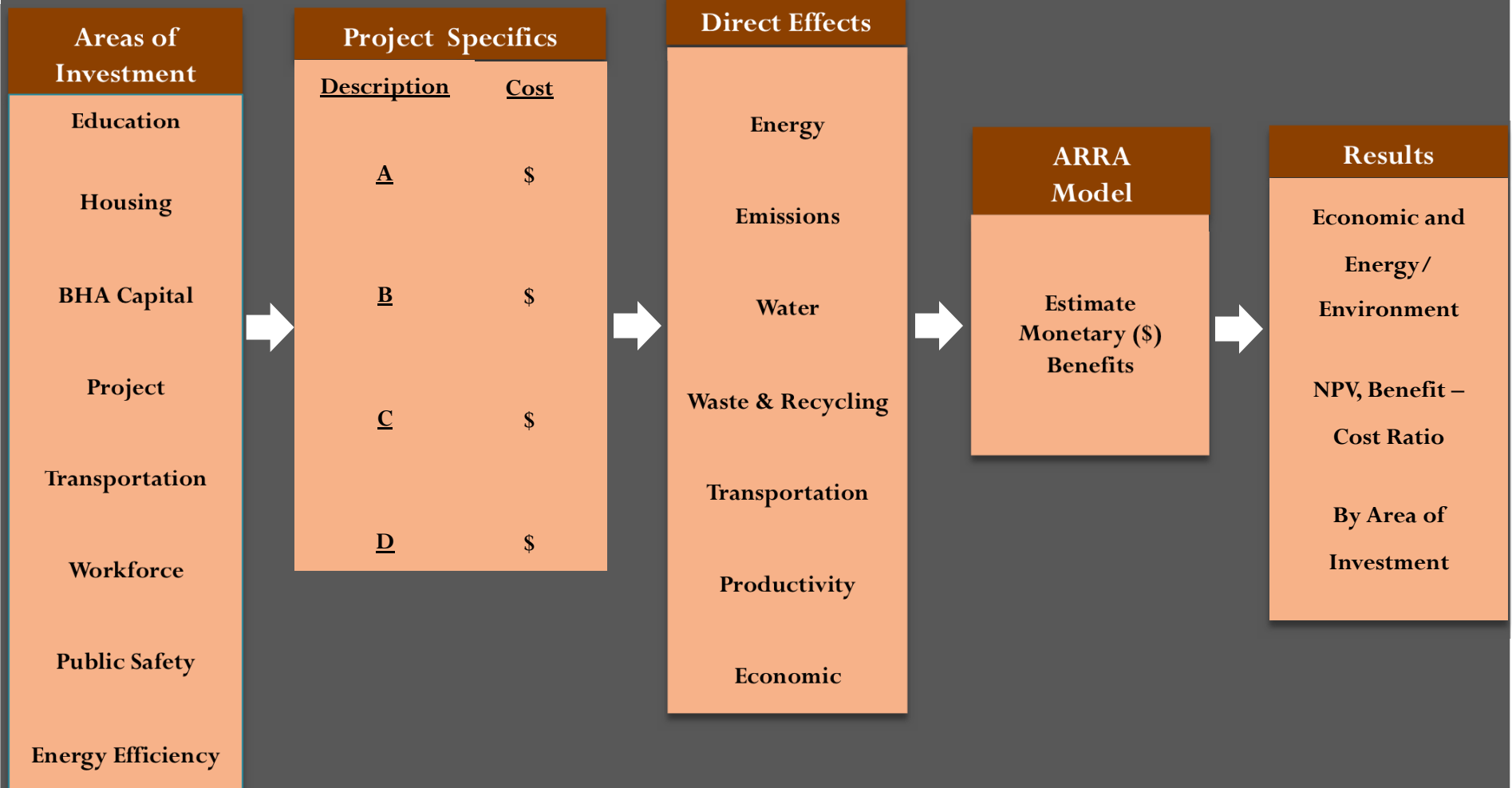
# The ARRA Analysis Tool

- A model framework to determine the impact of ARRA investments by assigning monetary values to all economic and environmental costs and benefits
  - An Excel-based, user friendly interface with a logical flow of inputs, calculations, and results with:
    - A comprehensive and flexible structure to account for the wide variety of investments
    - Analysis of project/program-level capability measuring the benefits at the individual or group investment level
    - Up-to-date benefit measures and parameters including *low*, *most likely*, and *high* values
    - Customized results to help communicate the full value of the investments

# Evaluating ARRA Projects



# ARRA Analysis Total Model Framework



# ARRA in Boston

	Projects	Investment
Boston Fire Department	1	\$1,384,000
Boston Housing Authority	17	\$70,106,821
Boston Police Department	4	\$17,530,000
Boston Public Health Commission	1	\$602,290
Boston Public Schools	5	\$86,108,401
Boston Redevelopment Authority	2	\$27,620,000
Boston Transportation Department	5	\$43,062,524
Boston Youth Opportunity	1	\$249,980
Department of Neighborhood Development	6	\$26,934,151
Elderly Commission	2	\$347,211
Emergency Preparedness	1	\$1,259,820
Energy and Environmental Block Grant	11	\$7,503,020
Jobs and Community Services	2	\$4,400,000
Management Information Systems	1	\$1,900,000
Administration and Finance	1	20,000,000
<b>TOTAL</b>	<b>60</b>	<b>\$309,008,218</b>

# Analysis of Products

- Measure outputs
- Larger economic impact
  - Jobs (direct, indirect, induced)
  - Contributions to the GRP
  - Tax generation
- Track value
  - Understand environmental impact/return on investment
  - Prepare for the next set of funding opportunities
- Create official Report from the BRA and HDR
  - Economic impact analysis
  - Sustainability benefits and estimate SROI
- Stages of Analysis
  - Current known portfolio
  - New projects
  - Future competitive grants

# Overall Boston ARRA Analysis

	Cost	Economic	Energy/ Environmental	Total	B/C Ratio
BFD					
BHA					
BPD					
BPHC					
BPS					
BRA					
BTD					
BYO					
DND					
EC					
EP					
EEBG					
JCS					
MIS					

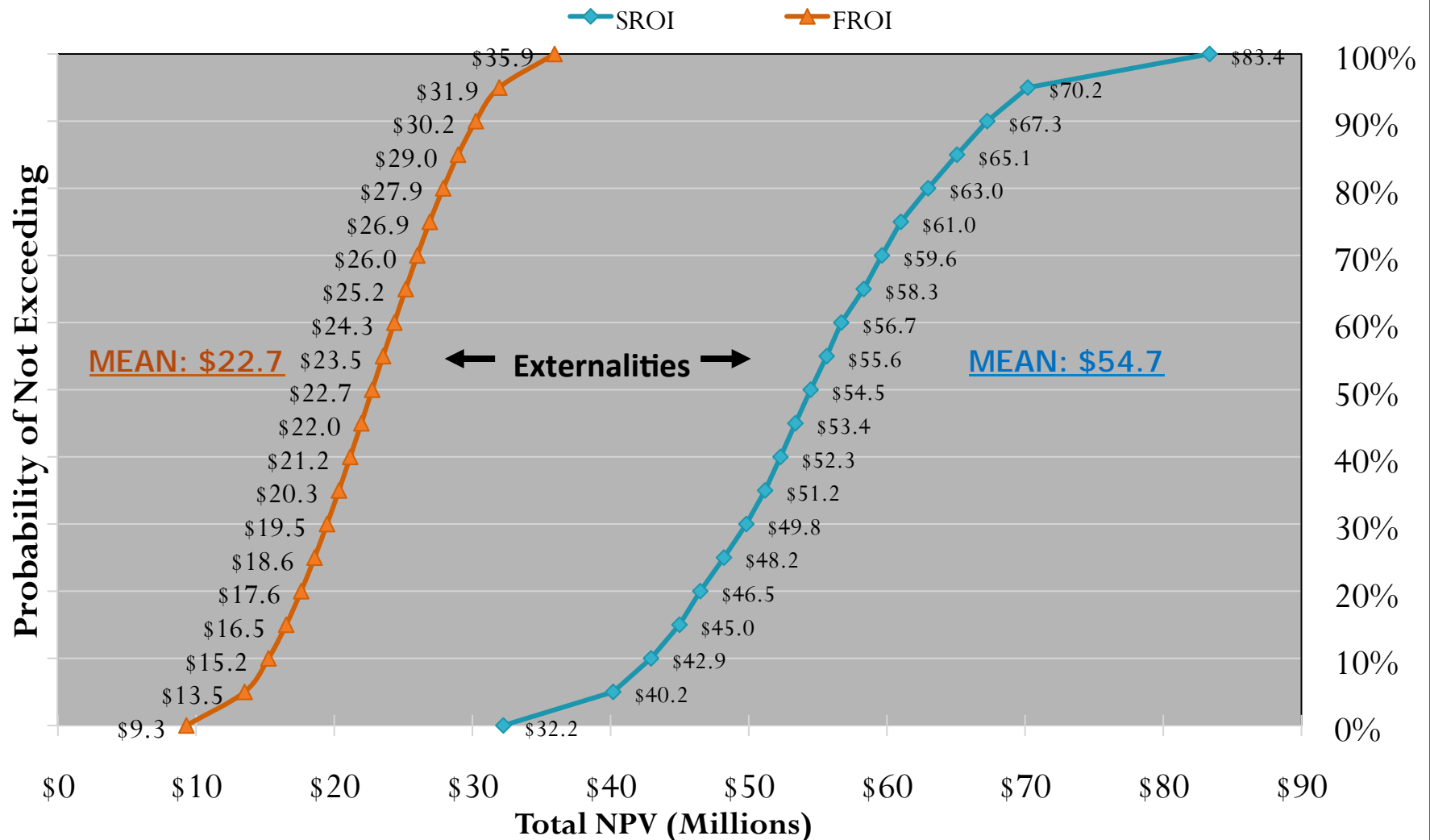
*Departmental  
Impacts*

# Sustainable and Financial Return on Investment: Environmental and Energy

SROI	Expected	Notes
<b>Annual Value of Benefits</b>	\$8,602,641	The total value of the benefits in the fifth year
<i>Utility Savings</i>	\$5,261,994	Direct
<i>Total Green House Gas Savings</i>	\$706,012	Externality
<i>Total Criteria Air Contaminant Savings</i>	\$3,340,647	Externality
<b>Net Present Value</b>	\$54,904,949	PV Benefits - PV All Costs
<b>Return on Investment</b>	8%	Arithmetic Average Rate of Return on Capital Investment
<b>Discounted Payback Period</b>	6	Time in years till positive discounted cash flow
<b>Internal Rate of Return (%)</b>	30%	Discount rate which would make NPV = 0
<b>Benefit to Cost Ratio</b>	3.1	PV Benefits / PV Costs

FROI	Expected	Notes
<b>Annual Value of Benefits</b>	\$5,261,994	The total value of the benefits in the fifth year
<b>Net Present Value</b>	\$22,756,943	PV Benefits - PV All Costs
<b>Return on Investment</b>	2%	Arithmetic Average Rate of Return on Capital Investment
<b>Discounted Payback Period</b>	8	Time in years till positive discounted cash flow
<b>Internal Rate of Return (%)</b>	13%	Discount rate which would make NPV = 0
<b>Benefit to Cost Ratio</b>	1.8	PV Benefits / PV Costs

# Risk Analysis of Environmental and Energy: Net Present Value (NPV)



# Return on Investment: Boston Transportation Department – Dorchester Avenue

<b>SROI</b>	<b>Expected</b>	<b>Notes</b>
<b>Annual Value of Benefits</b>	\$19,962,371	The total value of the benefits in the fifth year
<i>Utility Savings</i>	\$1,855	Direct
<i>Total Green House Gas Savings</i>	\$275,550	Externality
<i>Total Criteria Air Contaminant Savings</i>	\$507,712	Externality
<i>Travel Time Savings</i>	\$19,424,809	Congestion Relief
<i>Accident Reduction Savings</i>	\$27,996	Congestion Relief
<b>Net Present Value</b>	\$166,623,311	PV Benefits - PV All Costs
<b>Return on Investment</b>	28%	Arithmetic Average Rate of Return on Capital Investment
<b>Discounted Payback Period</b>	6	Time in years till positive discounted cash flow
<b>Internal Rate of Return (%)</b>	40%	Discount rate which would make NPV = 0
<b>Benefit to Cost Ratio</b>	9.3	PV Benefits / PV Costs