

MIAMI-DADE COUNTY SUSTAINABILITY

PLANNING FOR CHANGE
MANAGING FOR RESILIENCE

DEVESH NIRMUL
OFFICE OF SUSTAINABILITY
MIAMI-DADE COUNTY

LEADERSHIP ✦ COLLABORATION ✦ INNOVATION

CHARTING SUSTAINABILITY MILESTONES

- Coordinating the Transition
- Principles of Successful Change
- Where are we / Where are we going
- Integrating policies, plans and initiatives
- Strategic and Leveraged Implementation (\$s, partnerships and branding)

VISION: SUSTAINABILITY _____ ?

- Miami-Dade County will be a livable and integrated urban and rural community;
- where our coastal and natural areas are in pristine condition and enjoyed by all, visitors and residents alike;
- where our buildings that we live and work in and infrastructure that provides us with our daily needs will be designed to enhance and restore, not damage the natural environment;
- where companies that will drive the sustainable economy will establish themselves; where young professionals will find a progressive environment in which they can settle and thrive;
- where there will be an abundance of secure “green collar” jobs that will support a healthy and prosperous community;
- where decisions are made today that will only benefit not harm future generations; where innovation in government, the private sector and civil society is the norm, not the exception and where we will all work together across our diverse and rich communities to make a sustainable Miami-Dade County a reality.

Financial Perspective

Improve productivity / align capital & operating budgets

Reorient revenues / investment to sustainability

Find new revenues in sustainable services

Increase Performance Across Integrated-bottom line (3 Es)

Customer Perspective

Improve Operating Quality & Efficiency

Efficient, Productive & Effective Government

Green procurement, operations & infrastructure

Enable community sustainability

Provide valued services & expertise for sustainable living

Introduce Incentives for sustainable community development e.g. green building incentives

Engage with community on sustainable practices e.g. education / focus groups

Increase innovation + expand sustainable service delivery

Introduce innovative sustainability-oriented services

Introduce / pilot sustainable services and partnerships

Integrate government service delivery along sustainability principles e.g. sustain transition team

Process Perspective

Learning and Cultural Perspective

Create a Sustainability-oriented Culture of Government

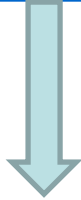
Employees empowered to implement sustainable practices, policies and operations e.g. LEED AP, social marketing

Cultivate leadership for sustainable service delivery throughout organization

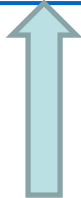
Enable and cultivate continuous learning and sharing of knowledge across organization

MANAGING CHANGE

ENABLING STRATEGY



OPERATIONS, FACILITIES & INITIATIVES



ENSURING INTEGRATED
BOTTOM-LINE
PERFORMANCE

*FACILITATE
ORGANIZATION-WIDE
CHANGE*

*FILLING THE SUSTAINABILITY
VOID (GREEN UPGRADE)*

*SUSTAINABLE DESIGN AND
EVALUATION OF POLICIES
& PROGRAMS*

PROGRESS = FACILITATION + REWORKED / NEW POLICIES & PROGRAMS

MDC GREEN TEAMS



MINDSET/BEHAVIOR IS KEY

- SEVENTH GENERATION PRINCIPLE: Iroquois Chiefs ensure that their decision-making is guided by consideration of the welfare and well-being of the seventh generation to come
- PRECAUTIONARY PRINCIPLE: "When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically."

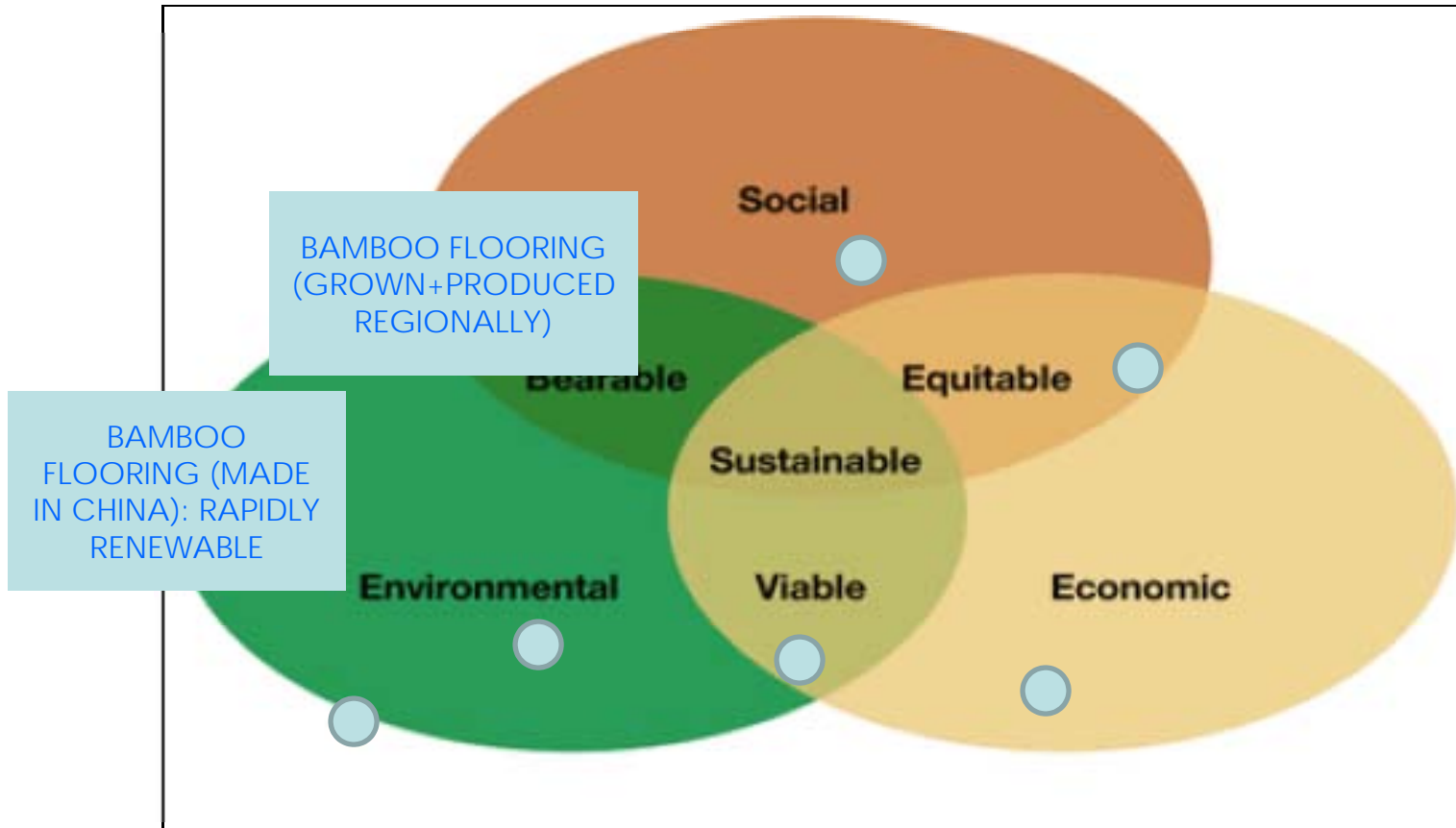
7 SUSTAINABILITY BLUNDERS

1. Information flows upwards, decisions flow downwards
2. Operating in silos
3. No clear vision of sustainability
4. Confusion over cause and effect
5. Lack of information
6. Insufficient mechanisms for learning
7. Failure to institutionalize sustainability
 - Doppelt (2003), *Leading Change Towards Sustainability*

FIRST YEAR PRIORITIES

- Building sustainability into 5 year strategic plan and departmental business plans
- Climate change
 - Mitigation: fuel + energy consumption
 - Adaptation: reducing vulnerability to climate impacts: sea-level rise, rainfall variability, ↑ temp and related impacts
- Green building
- Resource-efficiency
- Implementation of best practices

ASSESSING WHERE WE ARE



Slide adapted from ICLEI
sustainability planning toolkit

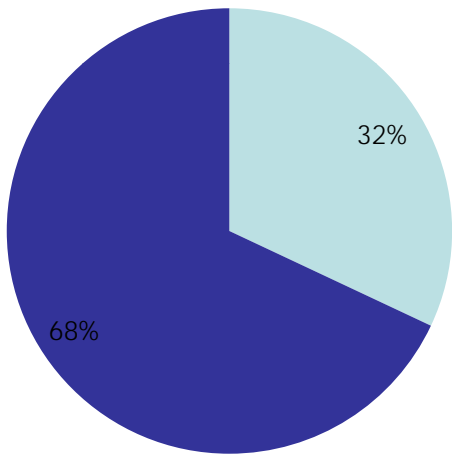
LINKAGES: CONCEPT TO PRACTICE

SANTA MONICA SUSTAINABILITY GOAL / INDICATOR MATRIX

	Resource Conservation	Environmental and Public Health	Transportation	Economic Development	Open Space and Land Use	Housing	Community Education and Civic Participation	Human Dignity
Resource Conservation Indicators								
Solid waste generation	■			■				
Water use	■	■		■			■	
Energy use	■	■	■	■		■		
Renewable energy use	■	■		■			■	
Greenhouse gas emissions	■	■	■	■	■	■		
Ecological Footprint for Santa Monica	■	■	■	■	■	■		
Indicator of sustainable procurement	■	■		■				
“Green” construction	■	■	■			■		

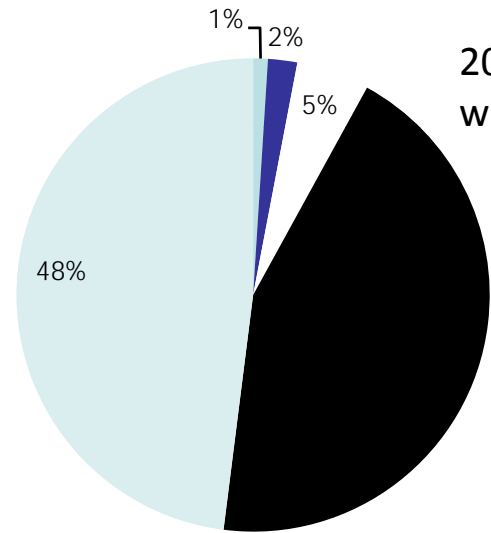


GHG FOOTPRINT



2007 MDC Government Allocation

- Fuel
- Electricity



2005 Community-wide Allocation

- Residential
- Commercial
- Industrial
- Transportation
- Electricity Use

ENERGY STAR BUILDING BENCHMARKING



Electric Meter			
Start Date	End Date	Energy Use (kWh)	Cost (US \$)
5/1/2008	5/31/2008	1,000,000.00	\$100,000.00
4/1/2008	4/30/2008	1,000,000.00	\$100,000.00
3/1/2008	3/31/2008	1,020,000.00	\$102,000.00
2/1/2008	2/29/2008	1,000,000.00	\$100,000.00
1/1/2008	1/31/2008	900,000.00	\$90,000.00
12/1/2007	12/31/2007	779,000.00	\$77,900.00
10/31/2007	11/30/2007	858,000.00	\$85,800.00
10/1/2007	10/31/2007	975,000.00	\$97,500.00
9/1/2007	9/30/2007	975,000.00	\$97,500.00
8/1/2007	8/31/2007	1,000,000.00	\$100,000.00
7/1/2007	7/31/2007	950,000.00	\$95,000.00
6/1/2007	6/30/2007	900,000.00	\$90,000.00

Gas Meter			
Start Date	End Date	Energy Use (Therms)	Cost (US \$)
5/1/2008	5/31/2008	1,000,000.00	\$100,000.00
4/1/2008	4/30/2008	1,000,000.00	\$100,000.00
3/1/2008	3/31/2008	1,020,000.00	\$102,000.00
2/1/2008	2/29/2008	1,000,000.00	\$100,000.00
1/1/2008	1/31/2008	900,000.00	\$90,000.00
12/1/2007	12/31/2007	779,000.00	\$77,900.00
10/31/2007	11/30/2007	858,000.00	\$85,800.00
10/1/2007	10/31/2007	975,000.00	\$97,500.00
9/1/2007	9/30/2007	975,000.00	\$97,500.00
8/1/2007	8/31/2007	1,000,000.00	\$100,000.00
7/1/2007	7/31/2007	950,000.00	\$95,000.00
6/1/2007	6/30/2007	900,000.00	\$90,000.00

MIAMI URBAN AREA MOST VULNERABLE TO CLIMATE CHANGE IMPACTS: ECONOMIC ASSETS

-- OECD (2008)

SAMPLE SHOWING DOWNTOWN AREA SEA LEVEL RISE = 4 FEET



Legend

TIN

Edge type

— Hard Edge

Elevation

□ GREATER THAN 10

□ 8 - 10

□ 6 - 8

□ 5 - 6

□ 4 - 5

■ WATER

TARGETS / INITIATIVES

- Climate Change Advisory Task Force
- Chicago Climate Exchange: Direct Fuel-based Emissions reductions
 - 2007-2010 compliance period: 1.5% annual reduction relative to 2000 baseline
- Cool Counties Declaration (2008)
 - 80% reduction in GHG region-wide emissions by 2050
 - 10% every 5 years, or 2% a year
- Sustainable Buildings Ordinance: LEED-NC for New Construction
- Increased water efficiency standards
- Alternative Energy Team: Solar, Lighting + Bio-fuels assessment
- Renewable Energy Working Group: Financing and Installation
- Community-wide energy efficiency programs
- Departmental Initiatives

MDC SERVICE DELIVERY EXAMPLE: HOUSING FINANCE AUTHORITY



HOMESTEAD TRANSITION HOUSING

- ECONOMY: Job Training for local value-added industry, Income
- ENVIRONMENT: Environmentally benign Nursery that also provides green benefits to structure: stormwater, heat island, carbon sequestration, etc.
- SOCIAL: Homeless → long-term viable integration into society

INTEGRATED

PLANS

- County Strategic Plan
- Comprehensive Development Master Plan (CDMP)
- Sustainability Plan
- Departmental Master Plans

INTEGRATION: plaNYC

NYC gov

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plaNYC

- HOME
- BACKGROUND
- THE PLAN
 - LAND
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 - CLIMATE CHANGE
- EMISSIONS INVENTORY
- STORMWATER PLAN
- GREENYC
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PLANYC REPORT

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The Challenge

By 2030, our City will be getting bigger.

INVENTORY OF NEW YORK CITY'S GREENHOUSE GAS EMISSIONS

OUR PLAN FOR A GREENER, GREATER NEW YORK

MAKE A DIFFERENCE

SMALL STEPS, BIG STRIDES.

Piloting plaNYC Sustainability Plan

- 5 milestones
- Cross-departmental implementation
- External Advisory Board





5

CULTURE

4

STRATEGIC CASE
INTEGRATION

3

GREEN
CERTIFICATION

2

GREEN TEAMS

1

CEO PLAN +
DECLARATION

RESILIENT
INFRASTRUCTURE +
EFFICIENT OPERATIONS

5

WASTE-FOOD

4

ADAPTATION
PLANNING

3

IMPROVE
EFFICIENCY

2

MEASURE
VULNERABILITY

1

MEASURE
EFFICIENCY



5

REVENUE / PERF
ALIGNMENT

4

INTRODUCE
INCENTIVES

3

REMOVE
DISINCENTIVES

2

PILOT BEST
PRACTICES

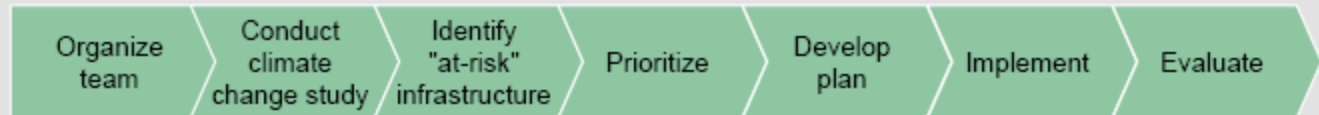
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COMMUNITY
BEST PRACTICES



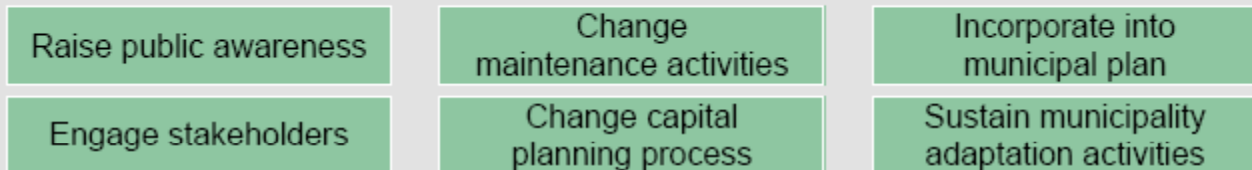
ADAPTATION PLANNING: BEST PRACTICES

Define Work Steps



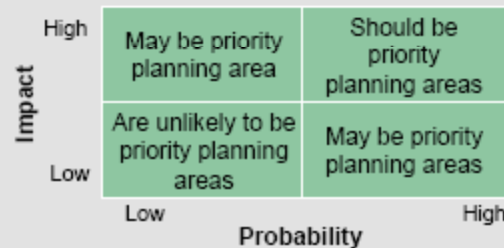
Determine Objectives

- Although objectives vary, many themes are pervasive



Prioritize Risk and Action

- Municipalities generally used 2x2 matrices along with select qualitative criteria



- Ability to implement
- Historical, cultural and tourism significance
- Wildlife and wilderness preservation
- Social (health, livelihood, displacement)

Source: Boston Consulting Group Analysis for New York City (2008)

↓ INFRASTRUCTURE + OPERATIONS VULNERABILITY

Maintenance/operations activities

- Educate stores and restaurants of the increased risk of food poisoning in the face of rising temperature
- Undertake a public communications campaign on risks of fire during droughts and heat waves
- Use pervious pavement when maintaining road surfaces
- Develop operational plans to minimize system failures in instances where flooding could not be eliminated
- Review and revise maintenance regimes for transport systems to take into account rising temperatures, e.g., ensure that seasonal pre-stressing of tracks is undertaken
- Review maintenance regimes for drains and establish whether more frequent clearing of drains is required

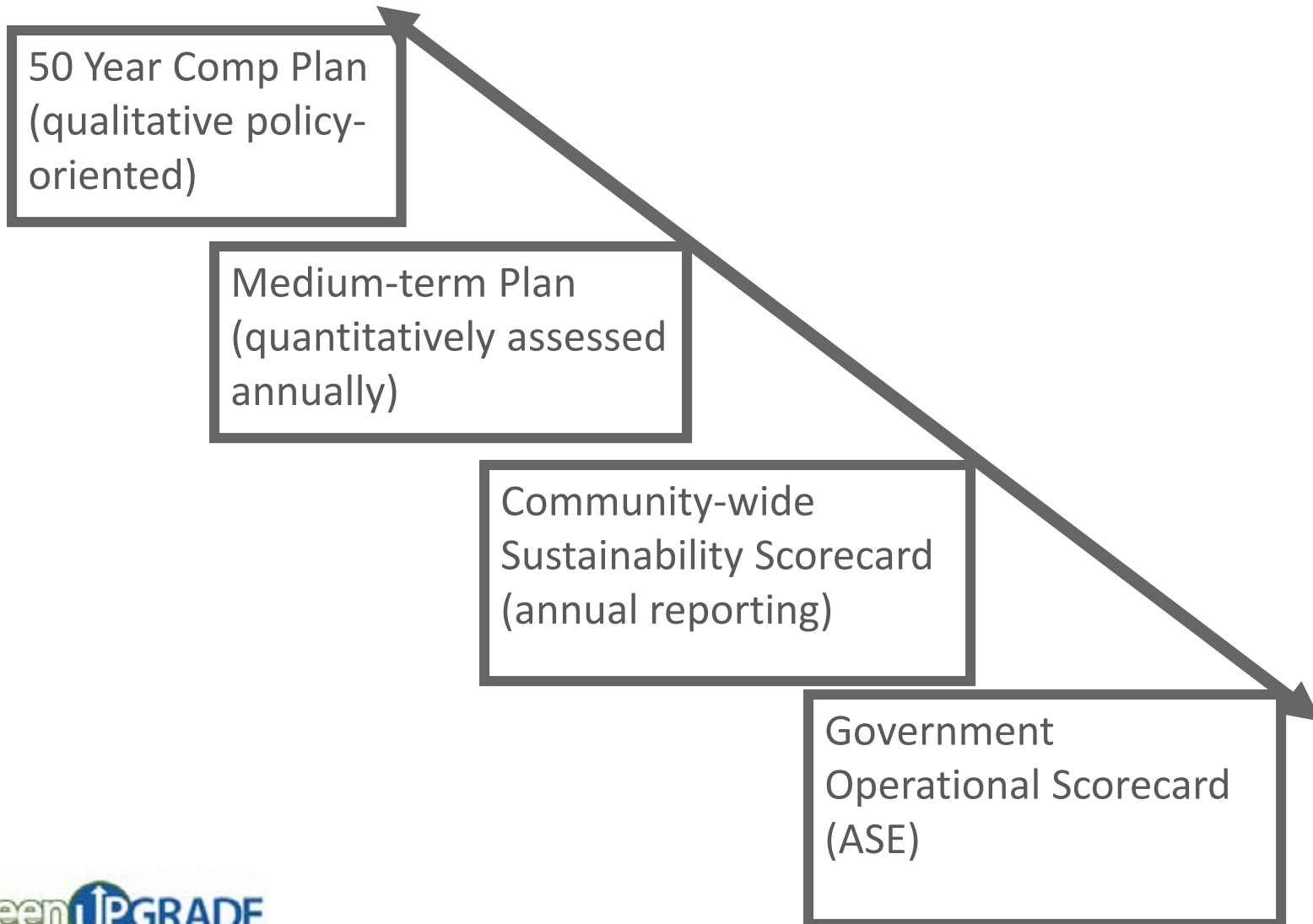
Capital planning

- Install electronic displays outside subway stations, showing temperatures on platforms
- Move valuable assets / equipment out of basements
- Mandate that all new buildings of a certain scale have green roofs
- Build new electric substations and plants away from flood plains
- Replace or rehab bridges in order to improve floodwaters conveyance and to avoid scour during high flows

Source: Boston Consulting Group Analysis for New York City (2008)



50 YEARS OUT & BACK TO TODAY



INTEGRATED "PLANAGEMENT"

LONG-TERM POLICY	MEDIUM-TERM PLAN (10 yrs out)	ANNUAL COMMUNITY SCORECARD	OPERATIONAL INDICATORS
Improve the ability of government and community to design + build green	75% of design and construction professionals have experience w/green projects	# of new contractors trained in green building # of architects, engineers and contractors w/experience on green projects	# of design staff trained in green building
Incentivize green building	50% of square footage certified green / energy efficient	New square footage of built environment certified green	% of permit revenues associated with certified green projects

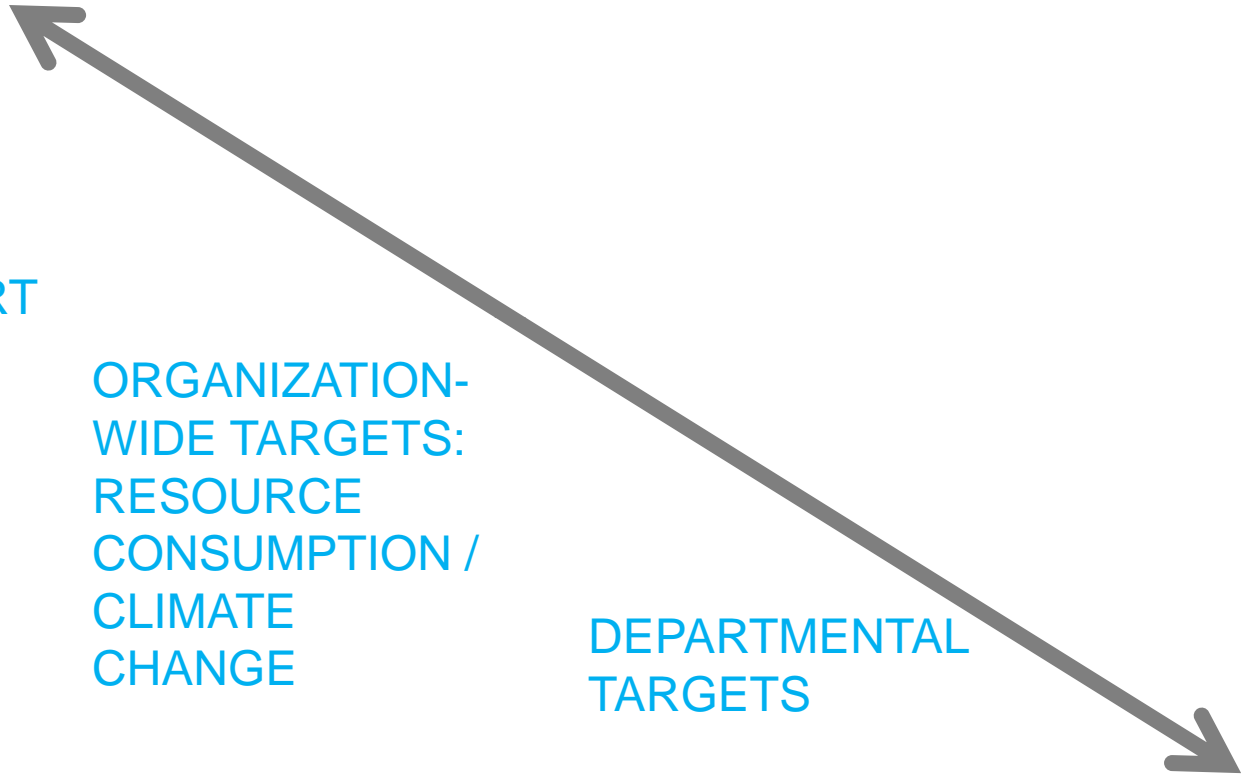
IMPLEMENTATION

RESOURCE
EFFICIENCY
BASELINES
AND SUPPORT

ORGANIZATION-
WIDE TARGETS:
RESOURCE
CONSUMPTION /
CLIMATE
CHANGE

DEPARTMENTAL
TARGETS

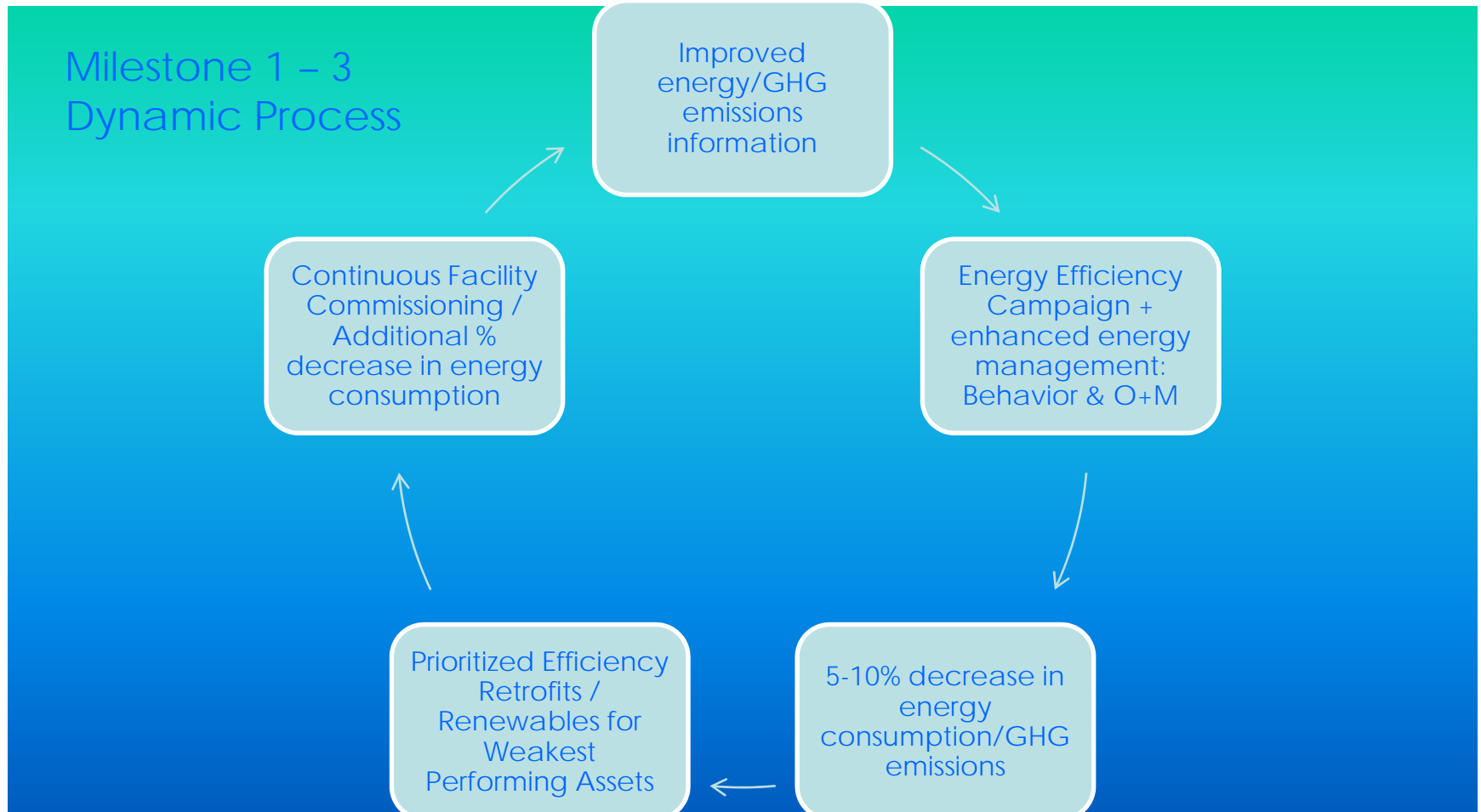
IMPLEMENTATION
TOOLS:
SUSTAINABLE
BUILDINGS, CCX,
ETC.



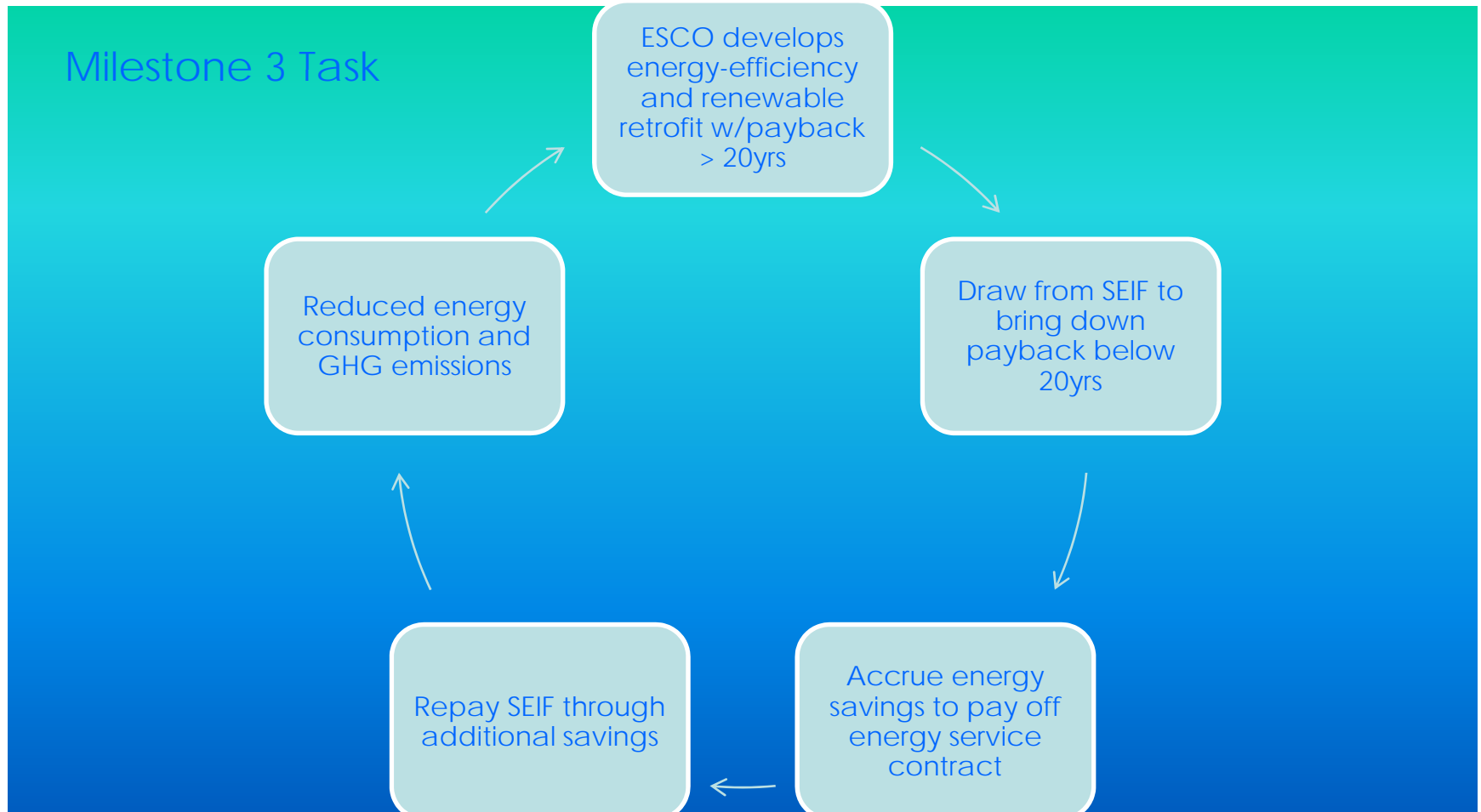
STRATEGIC USE OF STIMULUS

- Energy Efficiency Conservation Block Grants (EECBG): 4 Milestones
 - 1) Improved Energy Measurement and Monitoring
 - 2) Realization of Energy Savings from Behavior and O+M Changes
 - 3) Enable Continuous Energy Efficiency and Increased Use of Renewable Energy
 - 4) Enable Community-wide Energy-efficiency and GHG Emissions Reductions

IMPROVED ENERGY MANAGEMENT



SUSTAINABLE ENERGY INVESTMENT FUND (SEIF)



COMMUNITY ENERGY ALLIANCE

CAMBRIDGE Energy Alliance
Saving Money & the Planet

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We are proud to announce the appointment of Josh Hassel as President & CEO of CEA.
[CLICK HERE](#) to learn more.

A special message from Mayor Simmons and City Manager Healy. [CLICK HERE](#).

Join the Cambridge Energy Alliance

The Cambridge Energy Alliance is a city-sponsored nonprofit group created to save you money, while reducing Cambridge's carbon footprint and creating jobs. CEA is seeking individuals, businesses, houses of worship, educational institutions and others throughout the city who want to achieve unprecedented levels of energy efficiency and expand clean energy sources. The innovative CEA program offers practical solutions that will lead to far-reaching results.

The Cambridge Energy Alliance needs you! To learn more about how the CEA can help you, become a participating member by signing up. You will be contacted by a CEA representative. Together we can make a difference!

Option 1: [A home or business in Cambridge](#)

Option 2: [A clean energy service or product](#)

Option 3: [An interest in knowing more about the Cambridge Energy Alliance](#)

Please note: if you've previously signed up you do not need to repeat this process.

Noteworthy

[Register for information on home energy audits.](#) CEA has begun scheduling residential audits, which are free for most homeowners.

[CEA featured on NOW on PBS March 28](#)
Watch CEA on NOW, the PBS Emmy Award winning weekly newsmagazine.

© Cambridge Energy Alliance 2008



CEA'S BUSINESS MODEL

- “In the coming years, CEA will help thousands of Cambridge residential and business customers to identify and arrange financing for all cost-effective efficiency and renewable measures. The Cambridge Energy Alliance expects any project financing to be repaid by participants from the energy savings realized through efficiency upgrades. As part of this cost-saving effort, CEA will work with a number of other organizations to secure all available incentives to maximize the benefits received by CEA participants.”

<http://www.cambridgeenergyalliance.org/about.htm>

ICLEI STAR COMMUNITY INDEX

Examples of Local Government Issues & Challenges



Built Environment	Community Health
Energy Efficiency and Renewable Energy	Arts, Culture and Heritage
Green Buildings, Neighborhoods and Infrastructure	Community Engagement
Land Use and Building Codes	Livability and Affordability
Solid Waste and Recycling	Economic Development of Green Technologies
Transportation	Local Commerce and Fair Trade
Urban Planning and Design	Public Health and Safety
Water Quality, Conservation and Wastewater Management	Social Services, Poverty and Homelessness
Natural Environment	Citizen Well-Being
Air Quality	Access to Health Care
Climate Protection	Healthy Living
Ecosystem Services	Income Equity and Green Collar Jobs
Environmental Management Systems	Local Food Security
Urban Forests, Urban Ecology and Habitat	Quality Public Education
Watershed Protection	Race and Social Equity

The Rating System

The STAR Community Index will be developed as a national voluntary, consensus-based framework. To ensure the integrity of the system, the development process will include: 1) openness, balance, consensus and due process; 2) credits established with standardized methodology for measurement; and, 3) certification conducted through independent, third-party verification.



BRANDING THE PARADIGM SHIFT



- ❑ 7 steps to a green Upgrade of your home
- ❑ Upgrade to a greener business and certify through the green business certification program
- ❑ Upgrade to green and move your building plans up to the front of the line



get your green on and move on up!

MDC OFFICE OF SUSTAINABILITY

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