MARTA'S CLIMATE CHANGE ADAPTION PILOT PROGRAM

Presented by

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METROPOLITAN ATLANTA RAPID TRANSIT AUTHORITY (MARTA)

- Started bus and rail combined service in 1979
- 9th largest transit system in the U.S.
- 500,000 passengers daily (bus and rail)
- 338 rail cars, 48 miles of service via four lines, Gold, Red, Blue and Green
- 120 miles of track
- 530 buses, 92 routes
- 175 Mobility (paratransit) vehicles

MARTA SUSTAINABILITY POLICY

Board approved Policy on October 27, 2008

- Sustainability Objectives:
  - Establish MARTA's environmental baseline
  - Reduce MARTA's environmental footprint
  - Promote use of environmental practices
  - Increase volume of recycled materials
  - Increase savings and ROI through greening strategies

APTA SUSTAINABILITY COMMITMENT

MARTA became a founding signatory of the 2009 pilot phase of APTA Sustainability commitment. This established the groundwork for MARTA to commit to a set of actions on specific sustainability items within a year.

RELATED MARTA INITIATIVES

- 2008/09 conducted a comprehensive assessment of **safety critical** systems
- In 2010, MARTA awarded an **FTA grant to update our Enterprise Asset Management (EAM) System** to upgrade our system to include a capital planning module and prioritization criteria that addresses **risk, sustainability** and **environmental** issues. Over 53,000 assets in system.
- Currently completing a system wide **condition assessment**
- Currently in Phase II of III of **Project Delivery/Project Controls** (PD/PC) re-engineering project
- Recently received FTA training on **ISO 14001** (Environmental Management Systems) and currently pursuing certification.

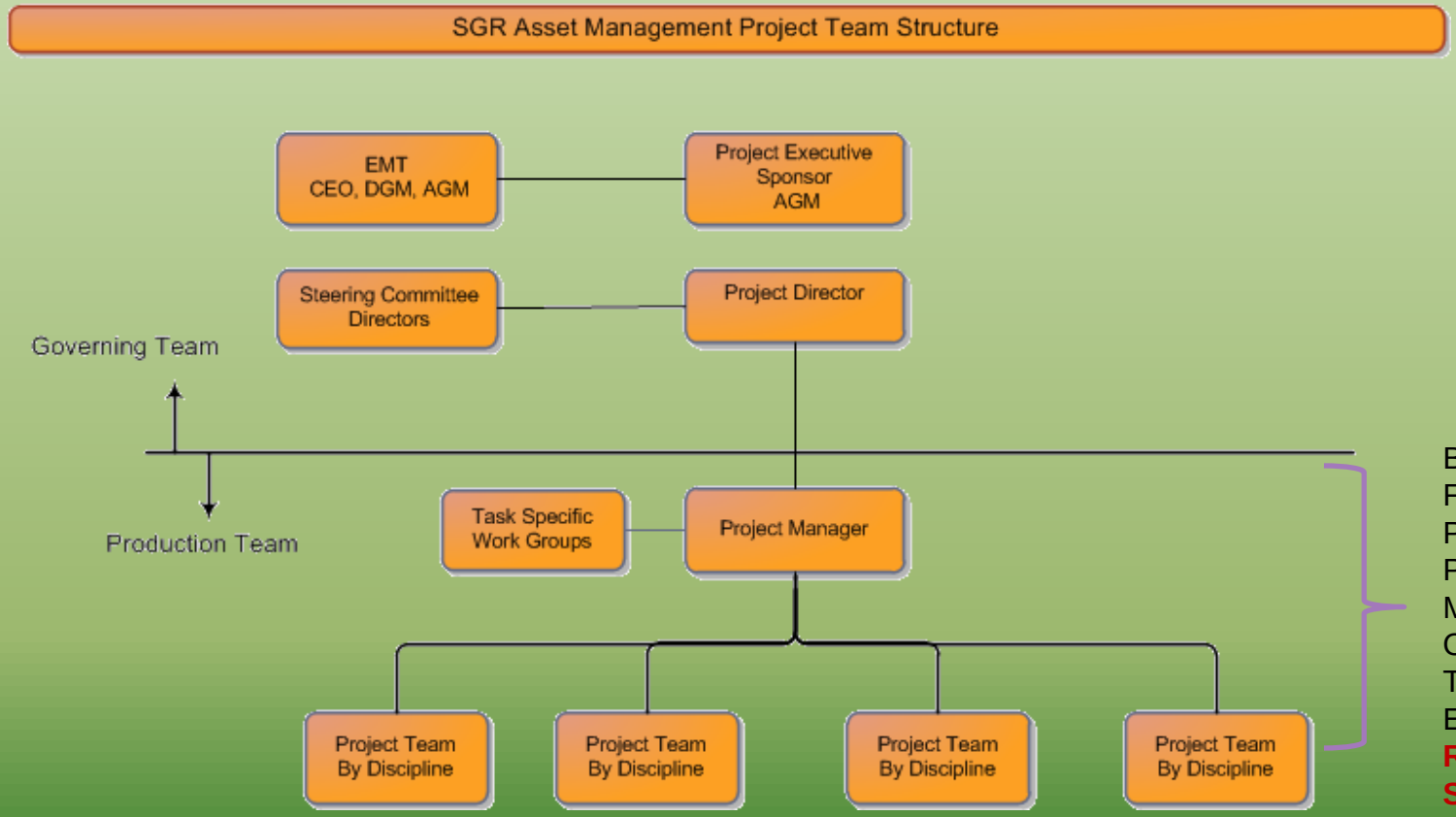
RELATED INITIATIVES

Photovoltaic installations at Laredo bus facility (1MW)

Lighting Upgrade Initiative – converting legacy lighting systems to LED technology

Environmental Management System ISO14001 Certification

MARTA *EXISTING* PROJECT TEAM STRUCTURE



Budget
Finance
Procurement
Police
Maintenance
Operations
Technology
Engineering
Risk Management
Safety/Environmental

MARTA's Asset Management/ State of Good Repair Methodology

Three-pronged approach

1 Condition Assessment Process

Identify Assets → Deploy FTA/ SGR Priority and Condition Codes → Refine Calculation for Replacing Assets → Determine Asset Sampling Strategy → Develop Asset Sampling Plan → Conduct Asset Sampling Using Internal and External Staff → Conduct SGR Analysis

Climate Change & Environmental Considerations

Based on?
- Estimated Useful life
- Estimated Replacement Date
- Priority
- Condition
- All of the above

In addition to maintenance and repair information, collect data on:
- In service date
- Estimated Useful Life
- Original Cost
- Priority
- Condition

- Facilities
- Infrastructure
- Revenue Vehicles
- Non-Revenue Vehicles
- Fare Collection
- Communications
- Technology

2 Asset Analysis Tools

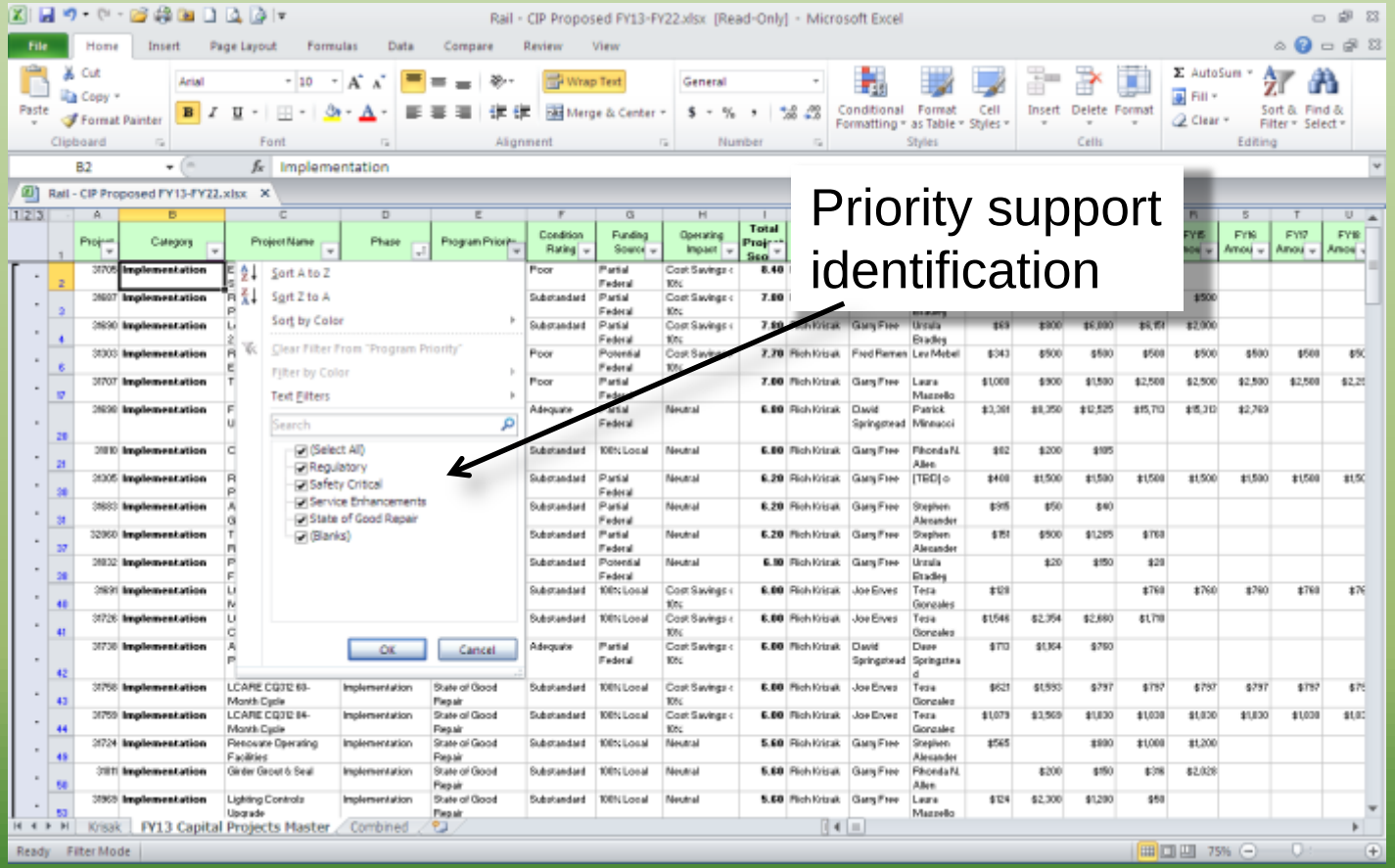
Assess Current Software/ Hardware Capabilities → Evaluate Tools Currently in Place → Seek Integration Opportunities → Procure/Install Computer Software/ Hardware as necessary → Revise Current or Develop New Asset and Project Reports

Probability, Risk, Cost Effectiveness and Performance need to be considered.

3 Asset Management Decision-making

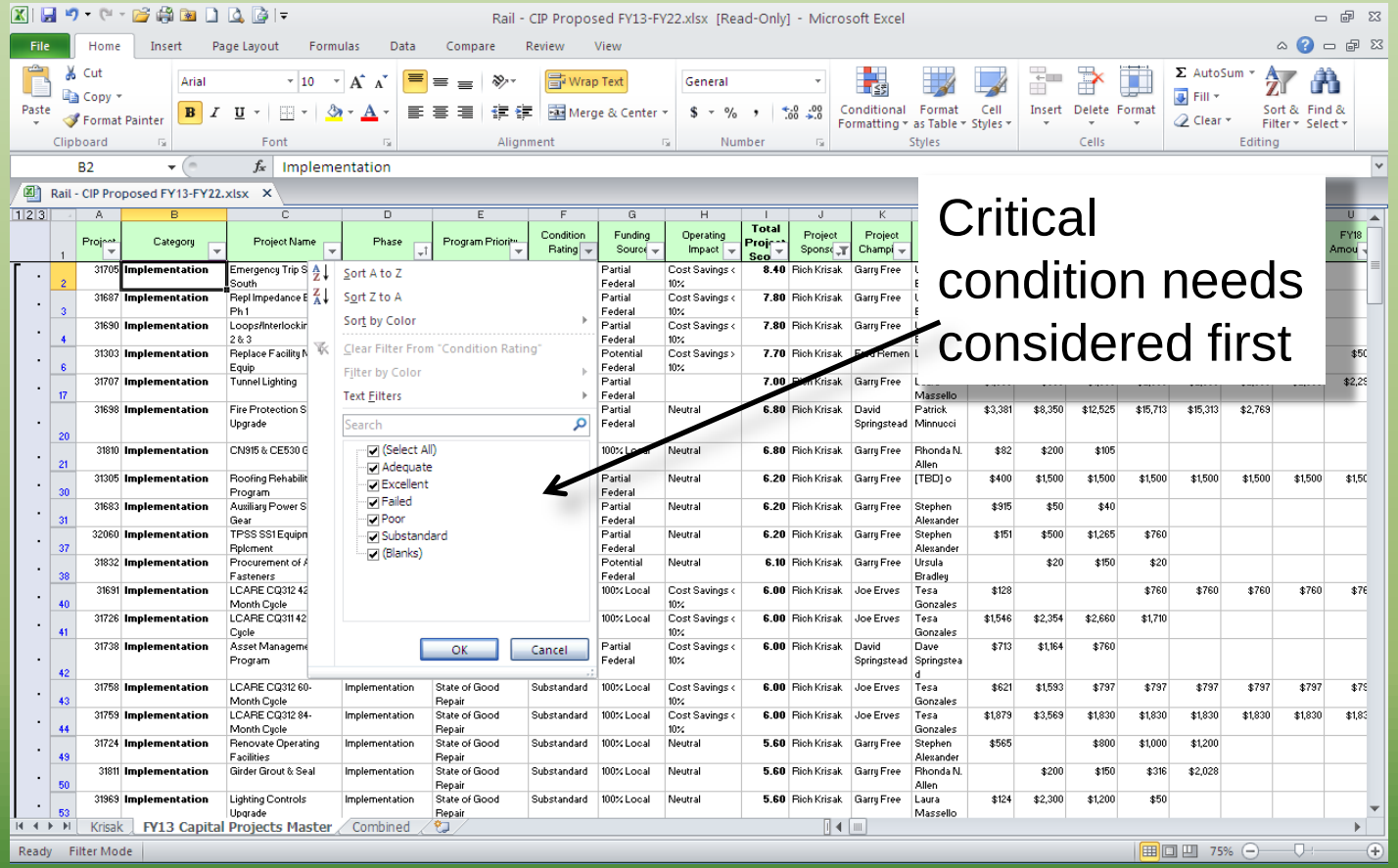
- Progress from a project to a program: must fund it, monitor and sustain the program
- Develop and refine asset management policies, procedures and strategy, SGR Team; who, what, how long?
- Provide input to AMP and CIP

CAPITAL PROJECTS PRIORITY: DETERMINATION OF AGENCY PRIORITY



Priority support identification

CAPITAL PROJECTS CONDITION OPTIONS: MEETING CRITICAL NEEDS FIRST



Critical condition needs considered first

TRANSIT CLIMATE CHANGE ADAPTATION PILOT

MARTA is the focus of a case study that looks at climate change stresses that occur in the Atlanta region and how these stresses could affect MARTA's operations.

The assessment will focus on how MARTA's enterprise asset management system could be used to monitor such changes and help in identifying response strategies.

OBJECTIVES

- better understand the state of practice with respect to climate adaptation and public transportation assets
- identify lessons that can be learned and applied to other transit systems
- build a relationship between our operating transit system and climate adaptation experts to leverage knowledge and <u>improve planning</u> and <u>investment decisions.</u>

TASK LIST

Task 1: Identify current and future climate hazards relevant to public transit agency assets and operations

Task 2: Characterize the risk of climate change on agency infrastructure and operations

Task 3: Identify key elements of MARTA's asset management program that are conducive to climate change-related information

Task 4: Develop initial adaptation strategies

Task 5: Link strategies to agency organizational structures and activities

Task 6: Develop dissemination strategies and final report

DISSEMINATION STRATEGY

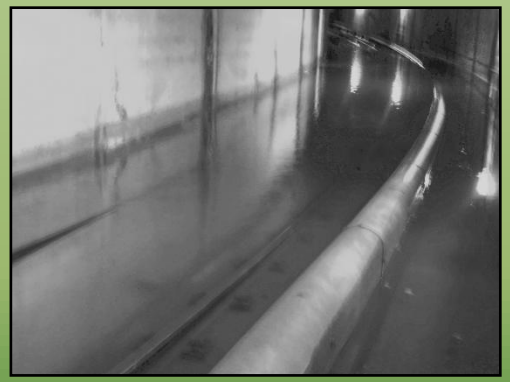
- Focus system-wide on vulnerable assets within transit systems that could be facing increasing precipitation, heat and wind.
- Easy to use reference for accessing information on the different strategies that are or could be used to respond to climate-induced stresses
- A final report designed to provide clear sections and modules relating to different categories of climate stresses and adaptation strategies.

CLIMATE ADAPTION ASSESSMENT TIMELINE

Tasks	Action Step	Responsibility	Support and Communication	Timeline (tentative)*	Deliverables
Task 1: Identify current and future climate hazards relevant to public transit agency assets and operations	Identify historical weather-related hazards	Georgia Tech	MARTA	4/1/2012	
	Identify future climate change hazards	Georgia Tech	MARTA	4/15/2012	
	Prepare technical memorandum	Georgia Tech		5/1/2012	#1
	Quarterly report	Georgia Tech		4/1/2012	QR #1
Task 2: Characterize the risk of climate change on agency infrastructure and operations	Identify risk application methodology	Georgia Tech and PB	MARTA	6/1/2012	
	Identify vulnerable assets and operations	Georgia Tech	MARTA	7/1/2012	#2
Task 3: Identify key elements of MARTA's asset management program that are conducive to climate change-related information	Characterize MARTA's asset management system	Georgia Tech and MARTA	PB	8/1/2012	
	Identify asset management components in MARTA's system that could include climate change information and a strategy for doing so	Georgia Tech and MARTA	PB	9/1/2012	#3
	Quarterly report	Georgia Tech		8/1/2012	QR #2
Task 4: Develop initial adaptation strategies	Identify possible adaptation strategies for vulnerable assets and operations	Georgia Tech and MARTA	PB	11/1/2012	#4

CLIMATE ADAPTION ASSESSMENT TIMELINE

Tasks	Action Step	Responsibility	Support and Communication	Timeline (tentative)*	Deliverables	Tasks
Task 5: Link strategies to agency organizational structures and activities	Identify key organizational units in MARTA potentially affected by climate-related changes	Georgia Tech and MARTA	PB	12/1/2012		
	Identify strategies for each unit	Georgia Tech, MARTA and PB		1/1/2013	#5	
	Quarterly report	Georgia Tech		1/1/2013	QR #3	
Task 6: Develop dissemination strategies and final report	Identify dissemination strategies	PB	Georgia Tech	2/1/2013		
	Prepare draft final report	Georgia Tech	MARTA and PB	3/1/2013	#6	
	Prepare webinar materials (if desired)	Georgia Tech	MARTA and PB	4/1/2013		
	Prepare final report	Georgia Tech		4/1/2013	#7	

2008: TORNADO HITS DOWNTOWN ATLANTA AND DESTROYS EXTERIOR WALL AT MARTA'S KING MEMORIAL STATION

2009: MAJOR RAIN EVENT FLOODS DOWNTOWN ATLANTA