



New York City Transit



Integrating Pollution Prevention through Environmental Management Systems

Greening the Government: A
Sustainability Conference for
Government Officials

*Ajay Singh, Chief
Sustainability and Environmental Management*

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Capital Program Management

New York City Transit's Department of Capital Program Management (CPM)



➤ Rebuild and improve the NYC Transit system by planning, designing, and building excellent Capital Projects.

➤ Registered ISO 14001 Environmental Management Systems, March 1999

➤ Part of USEPA
9 Municipalities Program

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SIX PILLARS OF CPM'S MISSION



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Why Implement EMS ?



- Regulations (City, State, Federal)
- Complements Environmental Review Process (EA/EIS)
- Our responsibility as a Public Agency
- Increase Productivity
- Decrease liabilities and litigation
- Leadership, Excellence

"To create a legacy for future generations by constructing long lasting, energy efficient, environmentally sustainable buildings, facilities and projects."



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New York State Governor Pataki's Executive Order 111:



"Green and Clean State Buildings and Vehicles"

- Directs State Agencies to be more energy efficient and environmentally aware
- Increase power use from renewable energy sources to 20% by 2010
- Procurement of Clean Fuel light-duty Vehicles 50% by 2005, 100% by 2010

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EMS Initiatives at NYC Transit



- Design for Environment (DfE)
- Construction for Environment (CfE)
- Energy Efficiency & Conservation Committee (EE&C), MTA-wide

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Design for Environment (DfE)



- CPM Sustainable Design Guidelines® established for ALL Capital Improvement Projects
- Major Projects include:
 - Stillwell Ave Terminal Station
 - Roosevelt Ave Inter-modal Station Rehabilitation
 - Corona Maintenance Facility
 - Central Maintenance Facility II
 - Lower Manhattan Transportation Improvement Projects

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CPM Sustainable Design/ DfE Guidelines®



- Energy Efficiency
- Enhanced Indoor Environmental Quality (IEQ)
- Conserving Materials and Resources
- Operations & Maintenance
- Water Conservation and Site Management
- Construction Site Management (CfE)



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Stillwell Ave Terminal Station



• Photovoltaic Canopy 150KW

• Natural Ventilation

• Natural Lighting

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Roosevelt Ave inter-modal Station Rehabilitation

• Photovoltaic Canopy 60KW

• Natural Lighting



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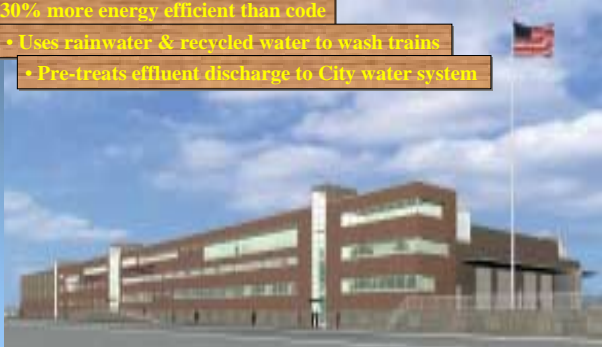
Corona Maintenance Shop

• Photovoltaic Panels 200KW

• 30% more energy efficient than code

• Uses rainwater & recycled water to wash trains

• Pre-treats effluent discharge to City water system



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Central Maintenance Facility & Grand Avenue Bus Depot

• Photovoltaic Panels roof mounted 100KW

• Uses rainwater & recycled water to wash Buses

• Paint booths equipped with VOC Abatement Systems



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Construction for Environment (CfE)



Minimize Impact to

- Air Quality
- Noise and Vibration
- Access & Circulation
- Cultural Resources
- Business/Economic Resources

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Construction for Environment (CfE)



Site Management

- Reduce impact to Air Quality
 - Ultra-low sulfur diesel fuel in off-road construction equipment
 - Retrofit technologies such as Particulate Filter / Diesel Oxidation Catalyst
 - Limit idling time

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Roosevelt Ave Diesel Exhaust Emissions Pollution Reduction



Technical Specifications

- Ultra Low Sulfur Diesel Fuel #1 Red (15ppm)
- Test Protocol ISO 8178C1
- Engine tested – Deutz Diesel
- Make: CEP Dieselytic
- Model: 7SX-P (compressor) & 14SX-F (backhoes) Diesel Exhaust Gas Purifier
- Manufacturer: Catalytic Exhaust Products Ltd., Canada
- Equipment:
 - Compressor, I.R. 1300, rated at 350HP
 - Backhoes, CAT M 315, rated at 114 HP
- Installation Date: February 2003
- Fuel Quantity used to date:
 - February 2003: 144 gal
 - March 2003: 1,172 gal

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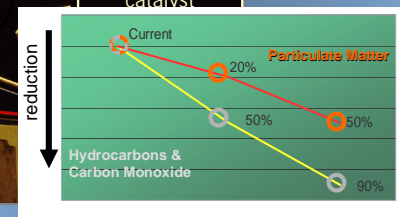
Air Quality



Improving Air Quality – reducing diesel exhaust pollution



Diesel oxidation catalyst



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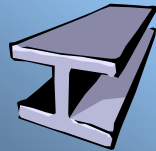


Construction for Environment (CfE)



Site Management

- “De-Construct” instead of Demolition
- Implement a Waste Management Plan
 - Segregate materials (ex: Concrete, steel, wood)
 - Recycle minimum of 50% by weight
- Already done at Roosevelt Ave, Queens and Stillwell Ave, Brooklyn



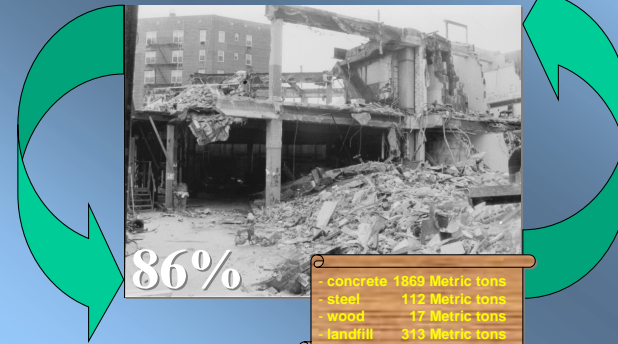
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Roosevelt Ave Waste Management Plan



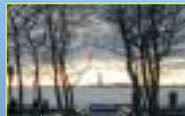
86% Deconstruction Waste Recycled



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Stillwell Ave Waste Management Plan



85% Deconstruction Waste Recycled



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Lower Manhattan Transportation Improvements



- Key to the Future of Downtown
 - South Ferry Terminal Station
 - Fulton Street Transit Center
- Projects include explicit Environmental Performance Commitments (EPC's) to minimize or avoid adverse impacts

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South Ferry Terminal Station



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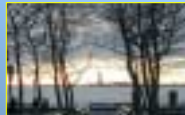
Fulton Street Transit Center



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Fulton Street Transit Center



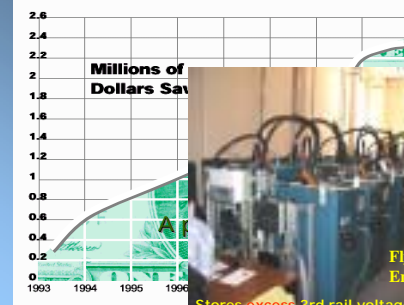
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Energy Efficiency & Conservation Committee (EE&C)



New York City Transit does Energy Conservation... in a Powerful Way



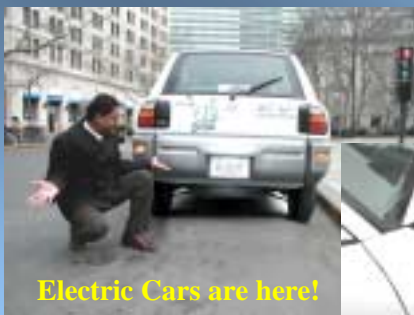
Stores excess 3rd rail voltage for later use

- Energy-Saver lighting controller
- Wind Turbines
- Flywheel Technology

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Eco-Procurement



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Reaching out to others...



- City of New Delhi sought ISO 14001 certification for a new \$6 billion urban railway system.
- Delhi Metro was able to achieve ISO 14001 certification in 10 months with help from CPM

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A look to the Future...



Goals

- Continue to find new ways to be Resource Efficient (energy, water, materials)
- Expand ISO 14001 EMS to other Transportation Agencies
- Continue to expand Eco-Procurement and partner with Suppliers, Universities and other Agencies
- Continual Improvement...



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Contact Information:



New York City Transit
Capital Program Management

Division of Sustainability and Environmental Management

Ajay Singh, Chief
(646)252-4398
Ajsingh@nycct.com

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