

# Urban Gold

From Municipal Solid Waste to Business and Jobs

# NYC's Solid Waste Management Dilemma

## Overview

- P 25,000 tons per day of waste,  $\frac{1}{2}$  collected by the Department of Sanitation,  $\frac{1}{2}$  by private carters
- P \$300 million a year cost to the City for export of residential waste - costs will escalate
- P Hundreds of thousands of truck trips on NYC highways annually owing to export of public and private Municipal Solid Waste

# Interim Plan

## Great News for Some of our Communities And A Terrific Platform on Which to Build

- P On July 31, 2002, Mayor Bloomberg, along with City Council Solid Waste Management Chairman Michael E. McMahon, announced a plan to utilize and upgrade the City's existing Marine Transfer Station system to include containerization and waste compaction at each site.
- P Hundreds of thousands of heavy truck transits every year will be eliminated, radically reducing traffic and air pollution, giving relief to Greenpoint/Williamsburg, the South Bronx, Red Hook, and some other neighborhoods, as well as our major arteries and crossings.
- P Provides the foundation for both completely eliminating truck transfer stations **and** allowing NYC to process its own waste - and to profit.

# How the Wastes Will be Handled

## A Whole System

- P The NYC Department of Sanitation collects or receives **all** waste - residential, commercial & institutional.
- P The waste will be presorted in a manner to be determined.
- P DOS trucks (and/or private trucks) carry the waste to Marine Transfer Stations (MTS) in each of the five boroughs.
- P The waste is barged to a Materials Recovery Facility (MRF) or other appropriate facility.
- P The MRF separates the dry recyclable waste into various streams which are then conveyed to manufacturers.
- P Non-recyclable materials are received at the appropriate facility for repair, demanufacturing, composting, or thermal degradation.

# Two Waste Streams Into One

NYC DOS Picks Up or Receives **All** of NYC's Waste

- P **Considerable revenue** to the City for commercial and institutional collection, and/or tipping fees at the MTS's
- P Reduced costs for our businesses
- P Enormous reduction in traffic exporting the waste
- P Elimination of noxious transfer stations concentrated in a few neighborhoods

# The New York City Recycling Authority

A Public-Private Partnership

P After DOS has the waste containerized and on board the barges, the NYC Recycling Authority takes over.

P NYCRA will design, coordinate, and run the show:

- conduct the studies
- get the regulatory approvals
- build and operate the MRF and other facilities
- work with the Mayor, DOS, EDC, and other agencies
- attract industries to the ecoplex, and serve their needs
- perform community relations
- coordinate with industries and agencies to develop new products and markets

# Revenue Streams and Bonding

Self-Financing for NYCRA and Budget Relief for the City

- P DOS pays NYCRA to receive the wastes
- P Manufacturers pay NYCRA for their feedstocks
- P NYCRA collects interest on loans to manufacturers
- P Manufacturers pay for their leases at NYCRA-owned property in the ecoplex

# The Materials Recovery Facility

## The Digestive System

- P The MRF should be designed to handle dry recyclables: paper, glass, metal, plastic, textiles, wood, and other material - 40%, optimally, of NYC's waste stream.
- P The waste will be separated into various components by a series of steps, some mechanical and automated, some by MRF personnel.
- P The facility will be carefully engineered so that there will be no residual smell outside and to provide proper venting and other safety measures to protect workers.
- P The separated materials will be made available at the facility for further processing within the ecoplex or for transport.
- P Such a facility would easily pay for itself in just a few years.

# The Ecoplex

## An eco-industrial park

- P Manufacturing plants receive much of the MRF's materials - the Visy Paper Company on Staten Island should be the model for a successful venture.
- P These manufacturers have a ready-made and endless stream of resources for their use. Their costs for materials are significantly lower than if they were using virgin materials or their feedstock was being transported a long distance.
- P They are at the heart of one of the largest markets in the world.
- P Added incentives for their locating here will include lower energy costs; world-class rail, trucking, and shipping facilities immediately at hand; tax incentives and willing consumers in the City and State of New York, and local authorities like the PA and the MTA.

# Additional Facilities

## Fully Processing **All** the Waste

P Some material - as much as 40% - will be suitable for processing by **pyrolysis** or **gasification**. End products can be used for recycling or energy production.

Neither process creates air pollution.

- Pyrolysis - the thermal degradation of waste in the absence of air to produce char, oil, and gas.
- Gasification - the breakdown of hydrocarbons into a synthetic gas by carefully controlling the amount of oxygen present.

# Additional Facilities - 2

## Fully Processing **All** the Waste

- P Some waste, such as household appliances and electronic equipment, can be “demanufactured”- broken down into component parts for recycling or reuse.
- P Much of NYC’s waste - as much as 20% - is organic material which can be composted.
- P The unusable fraction of the waste can be easily exported for appropriate disposal.

# Creating Jobs

## New Employment Opportunities for Thousands

- P Construction jobs for the transfer facilities, the MRF, and the ecoplex and other processing facilities
- P Manufacturing jobs at the ecoplex; jobs at the other plants
- P Jobs in transportation

# Markets

## The Key to Success

- P The City, State, and Federal governments, along with local authorities (Port Authority, MTA, etc), will be willing consumers.
- P Local businesses will buy products from the ecoplex, given the right package of incentives and marketing from NYCRA.
- P NYCRA will work with local businesses and the manufacturers to create new uses for the recycled material.

# Local Economic Development

## What's In It for Communities?

- P Jobs!
- P New housing development for workers
- P Business services to the transfer facilities, the MRF, the ecoplex and the other processing plants
- P Retail sales to the workers

# Siting

## Alternatives Exist

- P Site all the major solid waste management facilities in one central location
- P Locate the facilities in various spots throughout the five boroughs
- P Brownfield sites - a vastly underutilized resource in New York City - are perfect for these sorts of facilities

# Central Location - NW Staten Island

## One-Stop Shopping

- P Easier to transfer materials
- P Howland Hook - an existing container port looking to expand
- P Arlington Yards - a huge railyard, ideal for these purposes
- P GATX - out-of-service oil terminal perfect for industrial use
- P Marine transfer facilities already exist at Fresh Kills
- P Visy Paper in operation (and thriving)
- P No residential neighborhoods in vicinity

# Decentralized Operation

## Spreading the Wealth

- P Enables various communities to enjoy the benefits of eco-industrial development
- P Eases some siting concerns
- P All facilities can still be served by waterborne transportation of materials
- P Appropriate sites exist in the boroughs

# Transportation

## All Systems Go

- P The marine transfer system for the wastes is already essentially in place, but upgrading to provide for containerization of waste must occur, as the Interim Plan mandates.
- P The harbor is a perfect conduit for waste, recyclables, and other materials.
- P Although trucking should be minimized, major arteries exist throughout - whether the operation is centralized or decentralized.
- P Rail exists at a number of locations - phasing in of a Cross-Harbor rail-barging operation and, eventually, a Cross-Harbor tunnel will enhance operations.

# Energy and the Environment

## Conservation and Natural Resource Protection

- P Synthetic gas can be produced by the pyrolysis and/or gasification plants. Hydrogen, for instance, can be produced for fuel cells for mobile and stationary uses.
- P The facilities will be designed for optimal energy conservation.
- P The waste transfer operations, the MRF, and the other facilities will operate under negative air pressure - no smells.
- P Facilities on Staten Island will have the benefit of natural gas for energy production, available from Fresh Kills.
- P In all cases, particular attention will be given to protecting sensitive local freshwater and tidal wetlands.