



Halifax Harbour Solutions Project

March 25, 2008





Harbour Solutions Project

3 Key Components of Harbour Solutions Project:

- Sewage Collection System
- Wastewater Treatment Facilities
- Biosolids (sludge) management



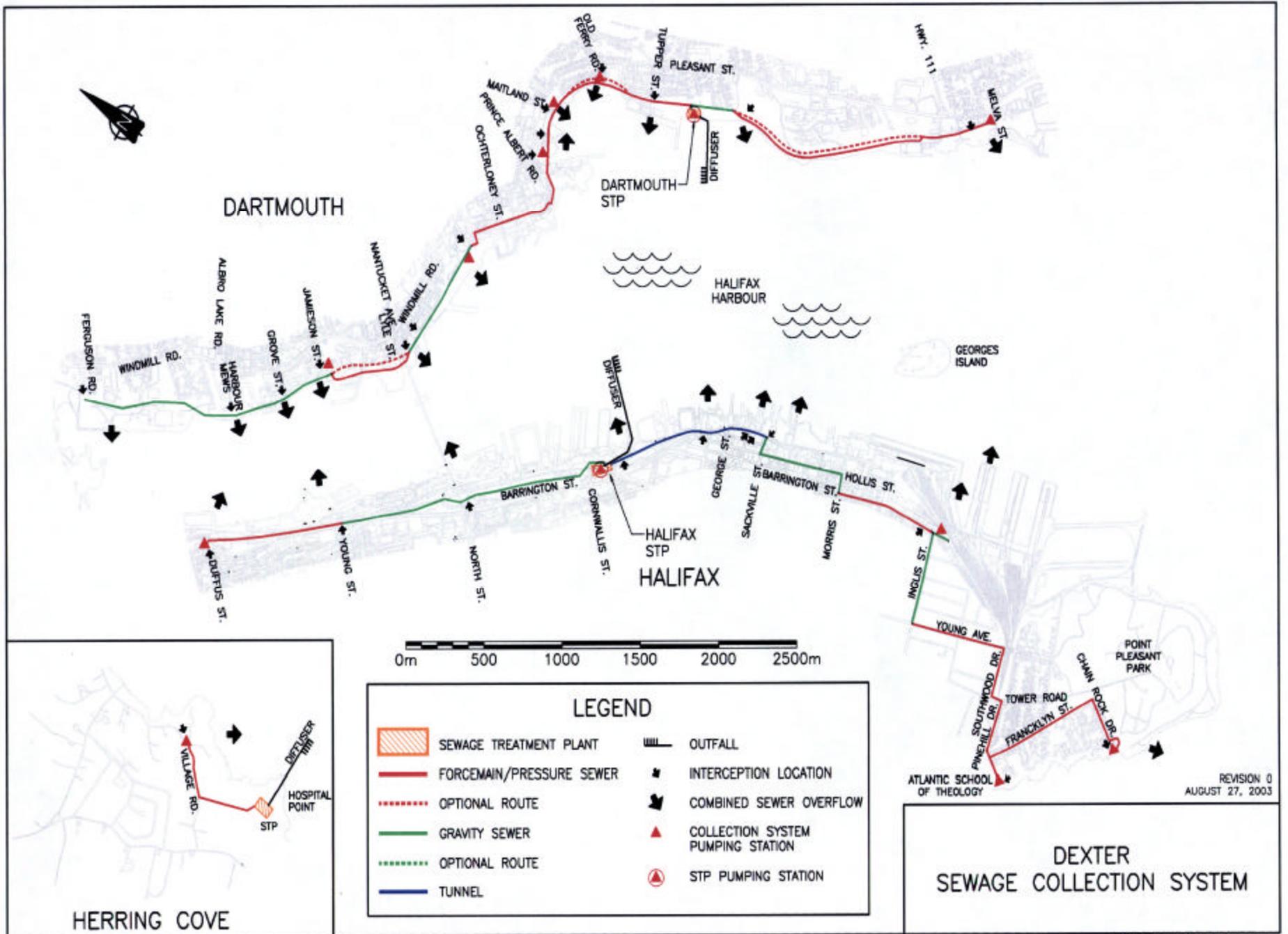
Harbour Solutions Project - Facts

- ❖ Harbour Solutions Project Budget - \$333 million
- ❖ 5 years of construction
- ❖ 5000 person-years employment
- ❖ 16.3 kilometres of pipe
- ❖ 1060-metre underground tunnel bored using TBM (tunnel boring machine)
- ❖ 42,750CM of concrete



Sewage Collection System

- Dexter Const. to design & build, HRM owns & operates
- Collects sewage and carries to WWTF's
 - Covers complete design and construction of roads, piping, tunnel, CSOs, outfalls, diffusers and pumping stations
 - ❖ Groundbreaking November 12, 2003
 - Construction essentially complete in Halifax & Dartmouth. Underway in Herring Cove



DARTMOUTH

DARTMOUTH STP

HALIFAX HARBOUR

GEORGES ISLAND

HALIFAX STP
HALIFAX



LEGEND

- | | |
|--|--|
|  SEWAGE TREATMENT PLANT |  OUTFALL |
|  FORCEMAIN/PRESSURE SEWER |  INTERCEPTION LOCATION |
|  OPTIONAL ROUTE |  COMBINED SEWER OVERFLOW |
|  GRAVITY SEWER |  COLLECTION SYSTEM PUMPING STATION |
|  OPTIONAL ROUTE |  STP PUMPING STATION |
|  TUNNEL | |

HERRING COVE

DEXTER
SEWAGE COLLECTION SYSTEM

REVISION 0
AUGUST 27, 2003

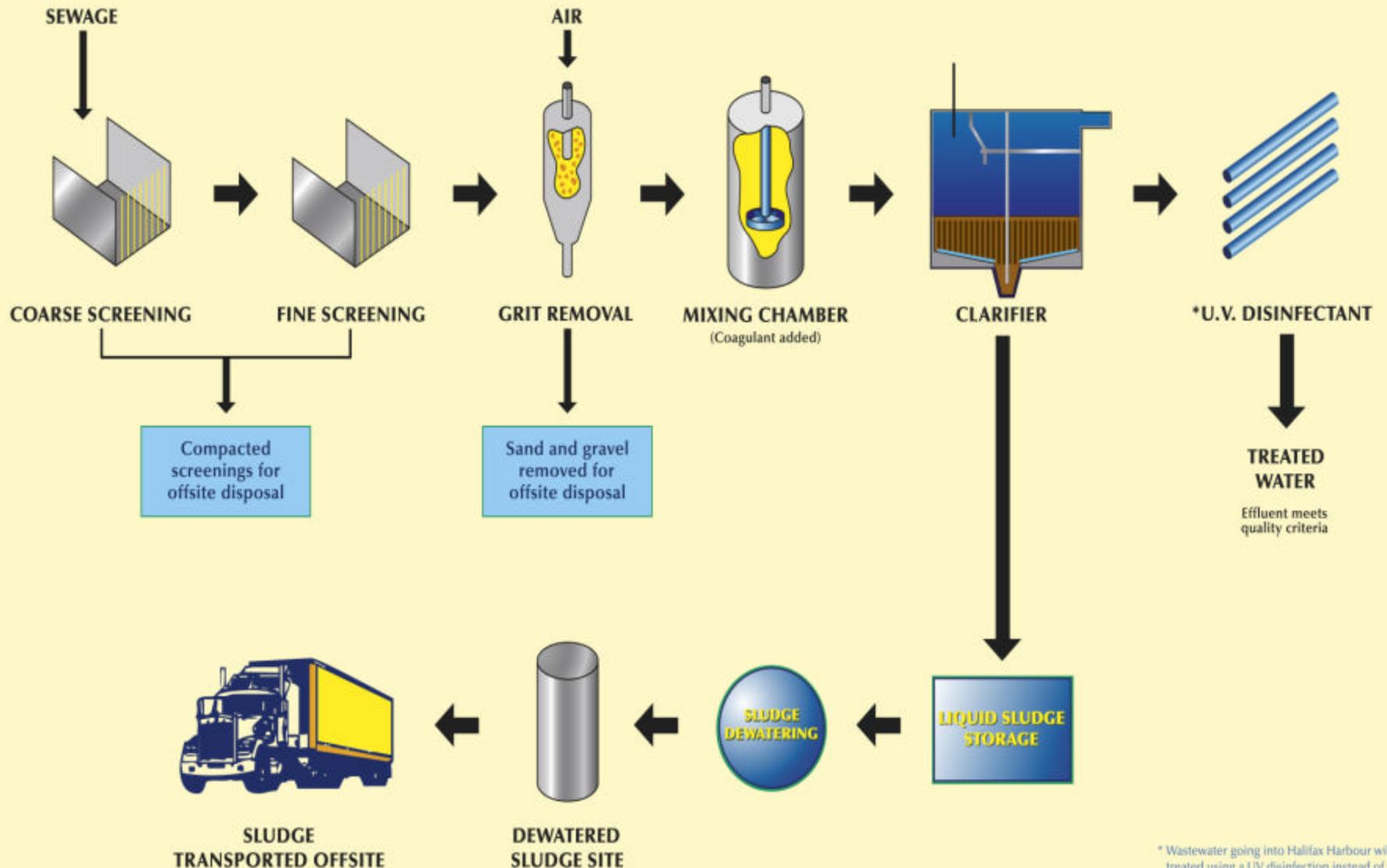


Treatment Facility Design & Construction

3 wastewater treatment facility sites

- Downtown Halifax at Cornwallis and Barrington St.
- Dartmouth, south end of the Coast Guard lands
- Hospital Point in Herring Cove
- Advanced Primary Treatment Facilities designed to blend in visually, no noise or odour, under negative pressure, UV disinfection

SEWAGE TREATMENT PROCESS



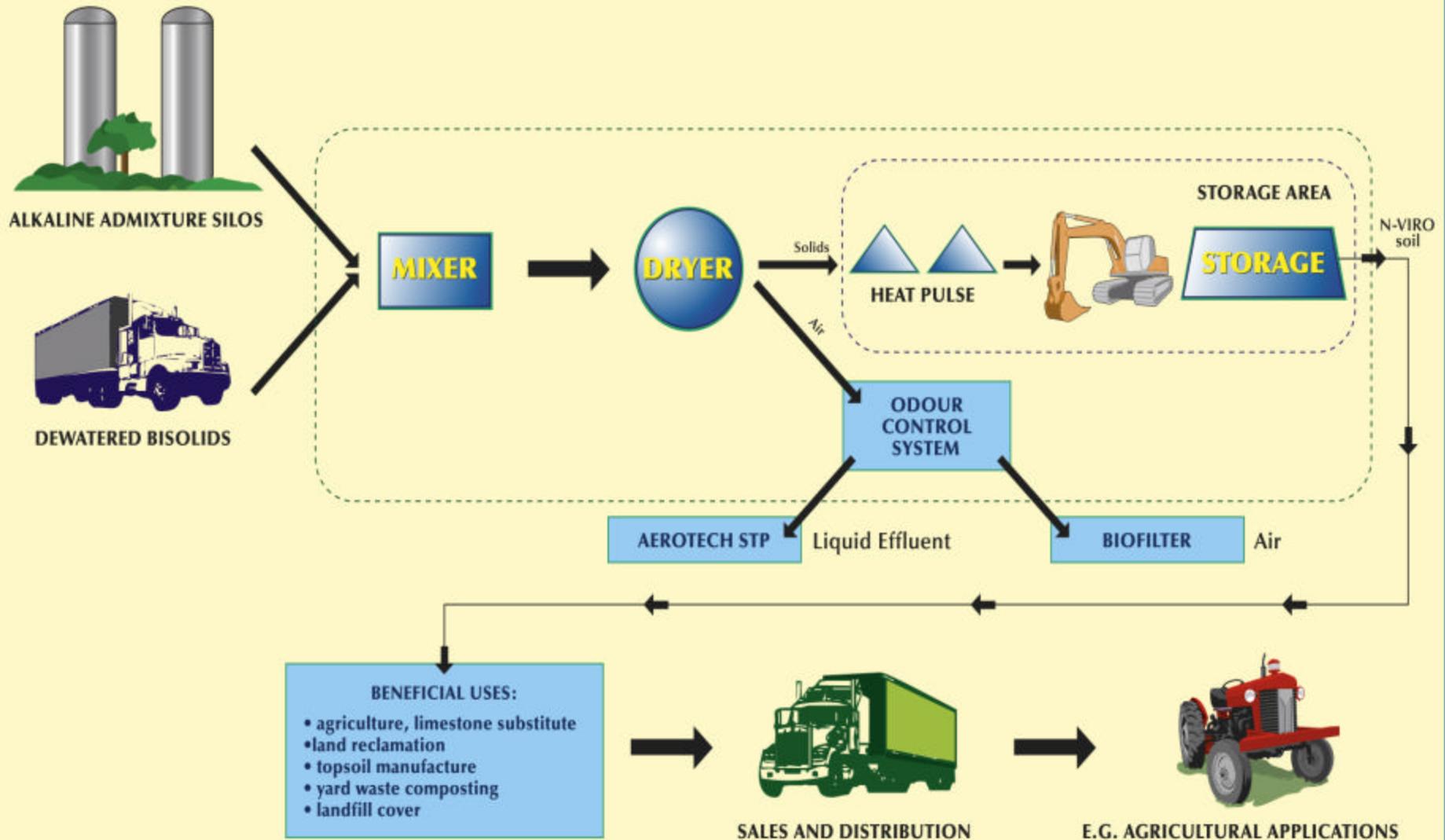
* Wastewater going into Halifax Harbour will be treated using a UV disinfection instead of the more traditional chlorination process



Biosolids Management

- By product of the wastewater treatment process
- Dewatered sludge removed from settling tanks and transported to sludge processing facility
- Operational November 2007

BIO-SOLID PROCESSING PLANT



Biosolids- Beneficial Use!



Meets:- USEPA Class A
- AGCAN/CFIA
Fertilizer Act

❖ Used for land reclamation, top-soil manufacturing, yard waste composting, agriculture



Biosolids Truck Halifax WWTF-Nov. 2007



Groundbreaking November 2003



Tunnel-Downtown Halifax-April 2005



Tower Rd. Pipe Bridge December 2004



Barrington St. Piping - November 2006



Pipe Installation- Sackville St. Jan. 2005



Trencher in Dartmouth - Summer 2005



32,000KG Manhole-June 2005



Halifax Outfall Pipe Sailing –December 2004



Dartmouth Outfall Pipe Sailing –April 2006



AST Pumping Station-November 2006



Pier A Pumping Station-November 2006



Balmoral Pumping Station-November 2006



**Circa 1813 shipwreck discovered –
Dartmouth shoreline, October 2005**



Halifax WWTF Fall 2007

An aerial architectural rendering of a building complex. The main building is a long, rectangular structure with a brick facade and a series of vertical concrete pillars along its length. It is situated on a large green lawn. To the right of the building is a paved parking lot with several cars parked. The surrounding area includes a road, trees, and a body of water on the right side. The rendering is presented in a top-down perspective.

Dartmouth- architectural rendering

Operational Spring/Summer 2008

Herring Cove-architectural rendering



Operational Fall 2008



Halifax WWTF Site-October 2004



Halifax WWTf Site -November 2006



Halifax WWTW Site – August 2007



Halifax WWTF Opening – February 11, 2008



Dartmouth WWTF Site -October 2005



Dartmouth WWTf Site-November 2006



Dartmouth WWTF Site-August 2007



Herring Cove WWTF Site-June 2006



Herring Cove WWTF Site-November 2006



Herring Cove WWTF Site-August 2007



Long Term Goals of the HSP

- ✓ Greatly improved water quality in the Harbour
- ✓ Increased property values
- ✓ Increased tourism revenues
- ✓ Renewed shellfish harvesting
- ✓ Improved marine ecosystem health
- ✓ Avoided health costs due to water-related illnesses
- ✓ Increased recreational opportunities
- ✓ Overall enhanced quality of life for HRM



Halifax Waterfront Before WWTF Treatment



Halifax Waterfront After WWTF Treatment



Harbour Solutions Project - Water Sampling In Halifax Harbour



Pollution Prevention Program

- Wastewater Discharge By-law
- Working with businesses to identify harmful waste materials and limit their use or disposal
- Support efforts of Federal Government to stop dumping of ship wastewater in the harbour
- Pesticide By-law
- Extensive public education/stewardship program underway



Pollution Prevention Program – Water Testing



SDF



How Can You & Your Family Help?

- Reduce or eliminate the use of hazardous products at home
- Don't pour leftover cleaning products, paints, solvents and pesticides down the drain at home. Take them to the Household Hazardous Waste Depot, 50 Chain Lake Dr.
- Encourage responsible disposal practices at home, your place of business, & composting and recycling
- Support HRM's environmental programs
- Conserve water



How Can You Stay Informed?

- Naturally Green Newsletter
- HRM Website (www.halifax.ca/harboursol)
- E-mail (contactHRM@halifax.ca)
- HRM Call Centre (490-4000)
- Harbour Solutions Project Office (490-4756)
- News Releases
- Public Meetings

Your Harbour ...IN SUMMER 2008

With the Harbour Solutions Project, comes greatly improved water quality in your harbour. But wastewater treatment facilities are designed to treat human waste only. We are all responsible for protecting the water quality in our lakes, streams and harbour. By not dumping hazardous products, leftover medicines, paints, fats, oils & grease etc. down our sinks, toilets and storm drains, we can all do our part for the environment. Whether at home or work, proper disposal is the answer.

Are you doing your part?



- Halifax Harbour Solutions Project**
Wastewater Treatment (WWTF) Facilities
- 1 Dartmouth WWTF
 - 2 Halifax WWTF
 - 3 Herring Cove WWTF
 - 4 Mill Cove WWTF
 - 5 Eastern Passage WWTF
- *HRM currently operates 11 other WWTFs



Please don't pollute. Remember, Only Rain in the Storm Drain

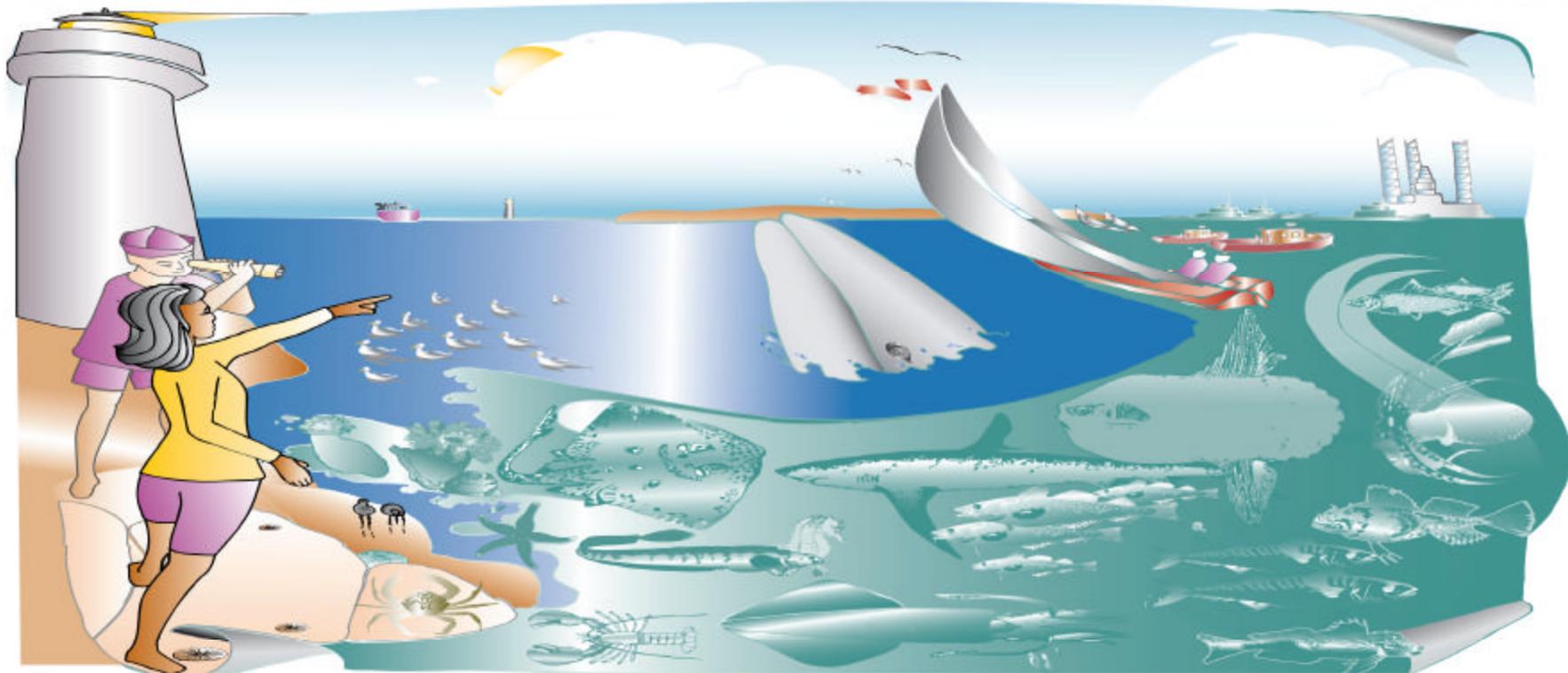
The Outer Harbour

WHO'S WHO IN THE HARBOUR

Halifax Harbour is known internationally as the finest, deepest ice-free salt water harbour in the world. But while our harbour is a valuable economic and recreational resource for HRM residents, to others it is home. The Harbour supports a surprisingly wide variety of

sea life that remains unseen and unknown to most HRM residents. For sea creatures, quality of life means quality of water.

Cast your eye below and see if you can unlock your harbour's treasure . . .



I spy...

The animals in the picture are listed below. Can you identify them?

- Herring
- Paper Nautilus
- Ocean Sunfish
- Sculpin
- Atlantic Mackerel
- Northern Searobin
- Squid
- Atlantic Cod
- Whale
- Lobster

- Seahorse
- Green Crab
- Starfish
- Snakeblenny
- Sea Anemone
- Sea Cucumber
- Skate
- Shark
- Sandollar
- Shorebirds

Questions?



Fire Away!