

Massport Efforts to Reduce Drayage Truck Emissions



PRESENTATION OVERVIEW

- Intro to the Port of Boston
- Intro to the Massachusetts Port Authority
- Massport's container operations and green initiatives
- Massport efforts to reduce drayage truck emissions



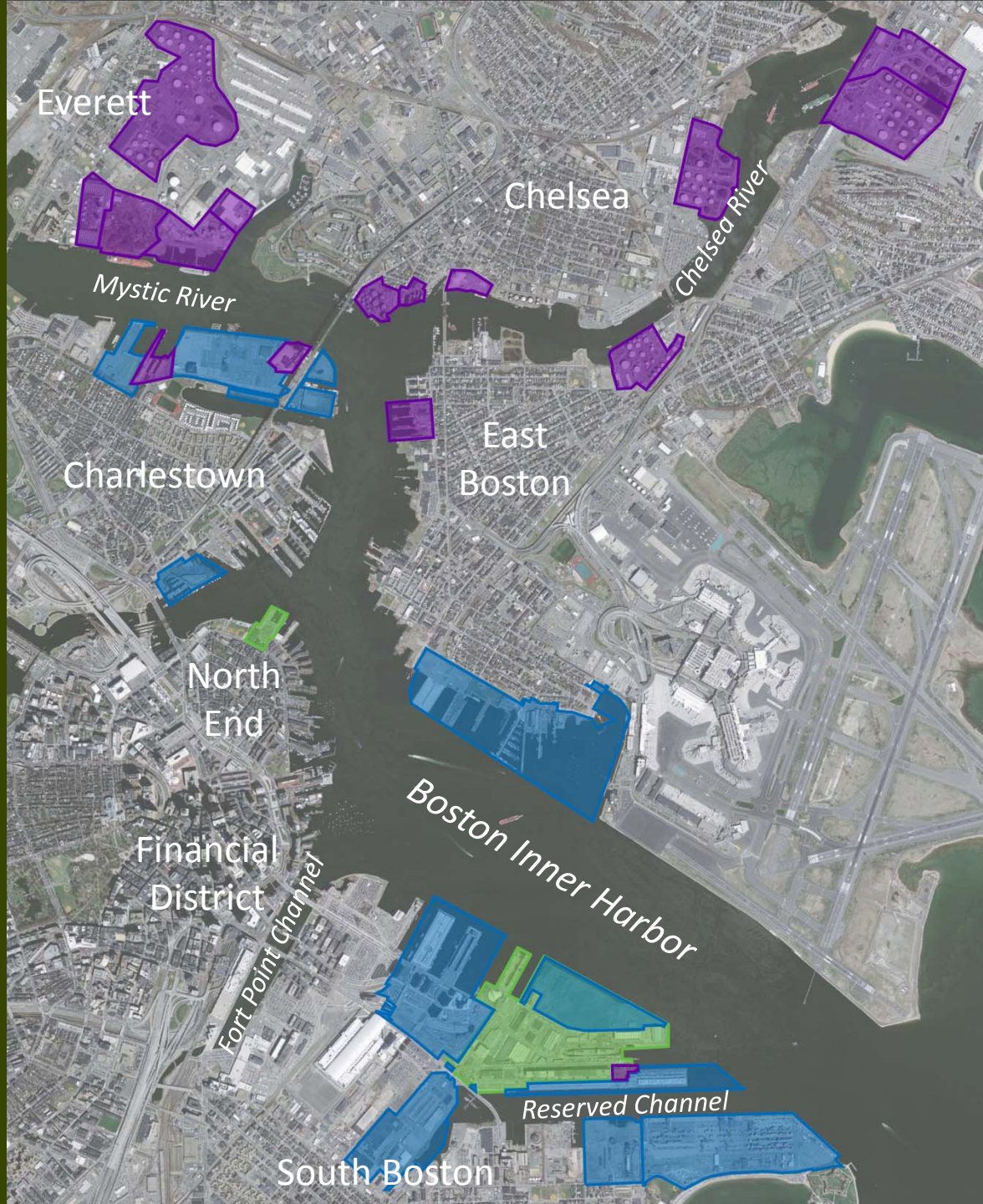
INTRO TO THE PORT OF BOSTON

- Oldest continuously active major port in western hemisphere
- New England's only full service port
- Economic Engine
 - \$2.4 billion annual economic impact
 - 34,000 jobs
 - Makes local business more competitive
 - Keeps prices on goods more affordable for consumers
- Better for the environment
- Key cargos (14M tons/year):
 - petroleum products
 - road salt
 - scrap metal
 - cement
 - Containerized cargo:
 - seafood
 - footwear and clothing
 - furniture



Northeast Drayage Workshop

October 13, 2010



KEY PORT OF BOSTON FACILITIES

-  Massport Property
-  Other Public (USCG & BRA)
-  Private Port Facilities

MASSPORT OVERVIEW

- State Authority est. by legislature to develop and operate key airport and port infrastructure
- Self-financing
- Primary port facilities:
 - Conley Container Terminal
 - related cargo warehouses
 - Black Falcon Cruise Terminal
 - Boston Fish Pier
 - other seafood processing and distribution facilities
 - Boston Autoport
 - bulk terminals



CONLEY CONTAINER TERMINAL

- Largest container terminal in New England
- 101-acre facility with two 45' deep berths
- Owned and operated by Massport
- Approx. 200,000 TEUs and 1.5 million tons per year throughput
- Weekly services to Europe and Far East



CONLEY GREEN INITIATIVES

- Conley Terminal EMS and ISO 14001 Certification
- ULSD conversion for yard equipment
- Equipment retrofits
- “Green” equipment replacement program
- Recycling of specialized waste
- Buffer zones
- Truck idling reduction
- Designated/dedicated truck routes
- Evaluating clean truck program options

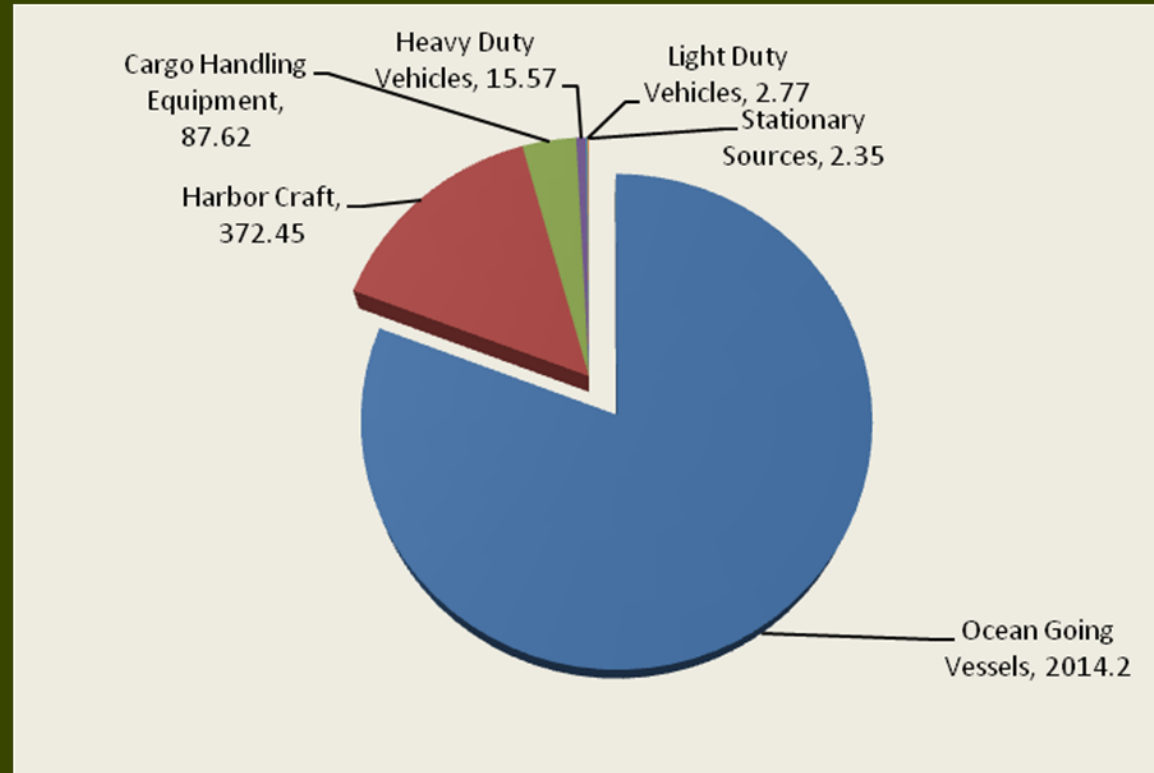


CLEAN TRUCK EFFORTS

- Conducted emission inventory that includes port drayage trucks
- Characterized existing Conley Terminal drayage truck fleet
- Surveyed existing U.S. port clean truck programs
- Evaluated technologies



Initial Port Emission Inventory Findings



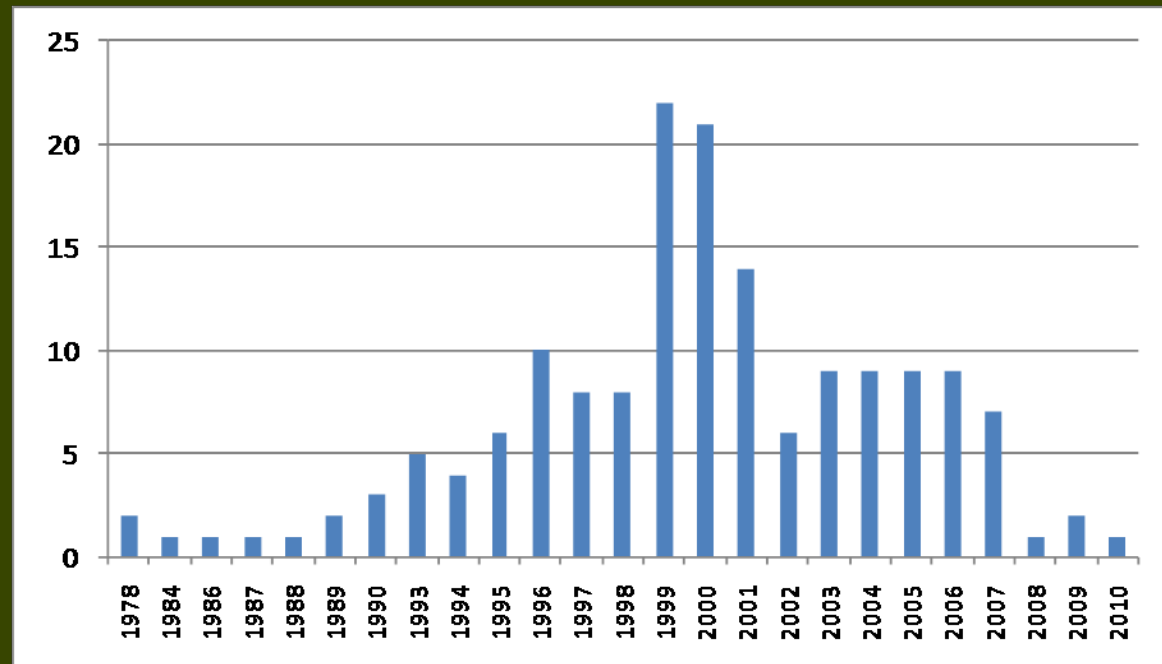
Conley Truck Fleet Characterization

- Survey conducted over two days at Conley Terminal
- Administered to truckers at exit by four summer interns over two days
- Designed to characterize age of fleet, frequency of visits to terminal, origin and destination of trips
- Trucking community and port operators involved in planning process



Truck Fleet Characterization Results

- 436 total truck visits recorded
- 162 unique trucks
- average model year 1999



Conley Truck Fleet Age Distribution (Model Year)

Existing Port Clean Truck Programs

- Researched existing North American clean truck programs via internet and interviews
- 5 mandatory (LA, LB, Vancouver BC, Seattle, NY/NJ,)
- 4 voluntary (Oakland, Tacoma, Houston and Virginia)
- TEUs ranged from 1.5M to 7.5M per year
- Cost to ports and truckers varied significantly



Lessons Learned

- Need to characterize truck fleet early in process
- Consult early with truck owners/operators and other stakeholders, and incorporate input to extent possible.
- Keep program simple, and have quick turnaround for the funds to make it easy for the truckers.
- Seek input in advance from Federal Maritime Comm.
- Research retrofits and technology in the program design stages, and assess whether retrofitting or truck replacement better helps meet the ports goals



Technology Survey

Idle Reduction Technologies (range \$1,800 to \$8,000)

- Electrified Parking Spaces (EPS)
- Auxiliary Power Units and Generator Sets (APU/GS)
- Fuel Operated Heaters (FOH)
- Battery Air Conditioning Systems (BAC)
- Thermal Storage Systems (TSS)
- Verified Low Rolling Resistance Tires



Technology Survey

Exhaust Retrofits (range: \$3,500 to \$20,000):

- Level 1 (diesel oxidation catalyst)
- Level 2 (diesel flow-through filter/closed crank vent system)
- Level 3 (diesel particulate filter)

Alternative Vehicles (range: \$40,000 to \$200,000+):

- 2007 Model Year Diesel Trucks
- LNG/CNG Vehicles
- Hybrid Vehicles
- Electric Trucks



Key Challenges

- Port trucks are very small percentage of regional truck fleet
- High cost to develop and implement clean truck program
- Cost to truckers
- Lack of authority over truck owners/operators
- Competitive disadvantage
- Legal considerations



Next Steps

- Update emission inventory with truck fleet and origin/destination data
- Meet with truckers to identify truck rotation plans, willingness to participate in program, opinions re: retrofit options and other input
- Identify framework, details and implementation strategy for voluntary clean truck program at Conley Terminal
- Assess funding opportunities and submit grant applications

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QUESTIONS?