



Fleet Experience & Market Potential

Dana-Farber Yawkey Center for Cancer
Care

Diesel Emission Reduction Program

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Walsh Brothers, Incorporated

Project Overview

- Clinical Research and Treatment Facility in Longwood Medical Area
- 7 Stories Underground, 15 Above
- Dense Neighborhood





The Beginning

- Greater Boston Breathes Better Retrofit Seminar
- Introduced to Process
- Learned to Implement a Program
- Case Studies:
 - Big Dig
 - CT DOT
 - MA DOT





Program Goals

- Require Advanced Pollution Controls
 - Diesel Emissions are a known contributor to serious health problems.
- Improved Air Quality for Patients and Neighborhood
- Improved Air Quality for Construction Personnel
- Neighborhood Relations / Good PR
- Market Transformation



Contract Language

- Reductions:
 - 42% VOC
 - 31% CO
 - 20% PM
- Cleaner Fuels
 - Exclusive use of ULSD

Contract Language

- Strict No-Idling & Turn-Off Policy
- Electric Powered Equipment
- Nuisance Odor Control
 - Away From Sensitive Receptors





Program Funding

- All Program Costs by DFCCI
 - Will end up <1% of total construction cost.
- Excellent Subcontractor Opportunity
 - Participating in our program helps them get 'ahead of the curve.'
- Testament to DFCCI's Mission
 - Reducing potential carcinogens.



Lasting Impact

- Far-Reaching Impact
- DFCI
 - Incorporation Into Master Plan
- Walsh Brothers, Inc.
 - New Subcontracts [where feasible]
- Spreading the Word
 - Pay it forward

Working With Subcontractors

- Program Relies Heavily on Subs
- Included in Contract
- Pre-Mobilization Planning
 - Equipment Lists
 - EPA Verification Numbers & Devices
 - Cut Sheets!
- Clearly Labeled Equipment





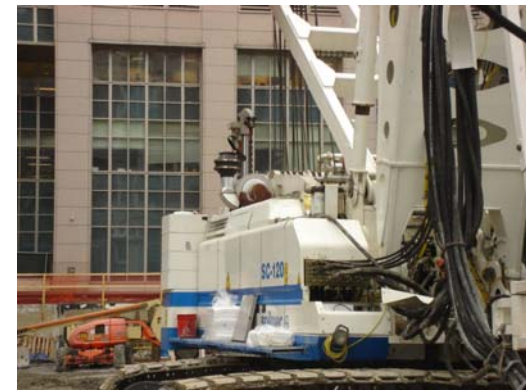
Retrofits to Date

o All DOC's and ULSD

Equipment	Make/Model	Equipment	Make/Model
Crane	Manitowoc 777	Excavator	Cat 345
Crane	Manitiwoc 10000	Excavator	Cat 321
Crane	Soilmec SC-120	Excavator	Cat 321
Crane	Tadano TR400E	Excavator	Cat 375
Excavator	CAT M108	Gradall	XL-5200
Loader	Case 821C	Crawler Carrier	ISI-IC-45
Pump	Gormann Rupp	Drill Rig	Casagrande C-8
Pump	Thompson	Drill Rig	Cadagrande C-8
Excavator	Komatsu PC700	Compressor	Sullair 185
Excavator	Komatsu PC600	Compressor	Sullair 900
Excavator	Cat 345		



Retrofits to Date





Retrofits to Date





Planned Retrofits

- 2-3 Excavators, Next Spring
- 3-5 Compressors, Ongoing
- Asking Future Subs to Push Envelope
 - Example: A concrete sub can retrofit their pumps, but how to lessen impact of 'dirty' trucks bringing concrete to site?



Impacts to Equipment

- NONE!
- Proper Sizing Ensures Proper Performance
- Subcontractor Fears:
 - Impact to Equipment Performance
 - Impact to Fuel Consumption
 - [Theoretically, reduced idling saves money from less fuel consumption!]



Hurdles for WBI

- Learning Curve
- A Lot of Faith in Subcontractors
 - They have a job to do and do not want to disrupt “normal working procedures.” We’re asking them to change the way their operations work, and need to make the process as painless as possible.



Hurdles for Subcontractors

- Changes to Equipment Planning
 - What happens when you plan for 2 weeks and equipment stays here for 6?
- Allowable Emissions vs Reduction %
- Equipment Swapping
 - Limits the subcontractor's ability to swap out equipment at will.



Positive Impacts

- Moral Obligation & Environmental Stewardship
- For DFCI:
 - Enhance their Mission
- For WBI
 - Leadership for Changing Marketplace
- For Subcontractors:
 - Benefiting from their Participation
 - Marketing Tool



Market Potential



The Off-Road Market

- Primary Market:
 - Subcontractors
 - Equipment Manufacturers
- Secondary Market:
 - Owners



Ready-Made Market

- Verification = ready-made market share
- EPA Verification Gaining Acceptance
- Example:
 - 1 Job = 20-30 pieces of equipment
 - 1 Company, say 2-3 jobs/year = 40-90 retrofits per company



Market Potential - Subs

- Genuine Desire to Lessen Environmental Impact
- Self-Perpetuating Cycle
 - Subs report increase in jobs that require
 - Subs get more jobs because of retrofits
 - More jobs = more equipment = more business for retrofit / fuel vendors



Market Potential - Subs

o Example:

- Sitework Subcontractor
- Fleet = 100 Pieces of Equipment
 - Age 15 years to New
 - $\frac{1}{4}$ of the Fleet is New [<5 years]
 - 10% of Fleet is Retrofitted
 - Nearly $\frac{3}{4}$ of the Fleet Needs Retrofits



Market Potential - Owners

- EPA Verification Process gives the owner a reliable 3rd party:
 - Validates Investment
 - EPA Helps “Marketing”
 - Although not a primary market, Owners keep your business going by funding the programs.



Trends?

- Subcontractor Wish-List:
 - More Cost Effective
 - Rental Retrofits?
 - No retrofits – come from the factory ‘clean’
- Emissions Requirements Are the Clear Trend



Questions

