



From Brown to Green

Leonard Farr Jr., RG, AMEC Earth & Environmental, Inc.



Some Examples of Greener Approaches



Deconstruction, Demolition, and Removal

- Reuse/recycle deconstruction and demolition materials
- Reuse materials on site whenever possible
- Consider future site use and reuse existing infrastructure
- Preserve/Reuse Historic Buildings
- Use clean diesel and low sulfur fuels in equipment and noise controls for power generation
- Retain native vegetation and soils, wherever possible
- Protect water resources from runoff and contamination

Cleanup, Remediation, and Waste Management

- Power machinery and equipment using clean fuels
- Use renewable energy sources, such as solar, wind, and methane to power remediation activities
- Improve energy efficiency of chosen remediation strategies
- Select remediation approaches, such as phytoremediation, that reduce resource use and impact on air, water, adjacent lands, and public health
- Employ remediation practices that can restore soil health and ecosystems and, in some cases, sequester carbon through soil amendments and vegetation

Design and Construction for Reuse

- Use Energy Star, LEED, and GreenScapes principles in both new and existing buildings
- Reduce environmental impact by reusing existing structures and recycling industrial materials
- Incorporate natural systems to manage stormwater, like green roofs, landscaped swales, and wetlands
- Incorporate Smart Growth principles that promote more balanced land uses, walkable neighborhoods, and open space
- Create ecological enhancements to promote biodiversity and provide wildlife habitat and recreation

Sustainable Use and Long Term Stewardship

- Reduce use of toxic materials in manufacturing, maintenance, and use of buildings and land
- Minimize waste generation, manage waste properly, and recycle materials used/generated
- Maintain engineering and institutional controls on site where waste is left in place
- Reduce water use by incorporating water efficient systems and use native vegetation to limit irrigation
- Maximize energy efficiency and increase use of renewable energy
- Take appropriate steps to prevent (recontamination)

Station Place: Site History



3

Station Place: Soil and Groundwater Impacts



4

Former Horse Barn Deconstruction



Portland Development Commission deconstructed the only remaining on-site structure. Approximately 85% of structure re-used or recycled.

- All concrete recycled
- Structural components and other wooden members re-used
- All windows and doors re-used



5

Dig and Haul Remedy Component



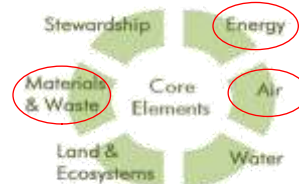
Approximately 2,300 tons of high level-impacted soil was excavated and transported off site for disposal.

- Estimated carbon footprint associated with this element of the remedy is 150 tons of CO₂



Approximately 18,000 tons of low level-impacted soil was excavated beneath streets per CoP policy, 13,000 of which was transported off site for disposal.

- Estimated carbon footprint associated with this element of the remedy is 850 tons of CO₂

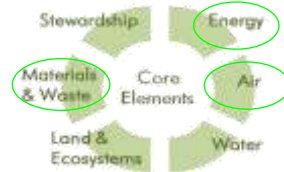


6

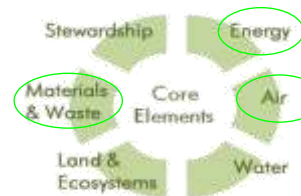
Capping Remedy Component



$$\text{RISK} = \text{TOXICITY} \times \text{EXPOSURE}$$



Vapor Intrusion Remedy Component



Anticipated LEED Gold Certification

- 40% of construction materials recycled
- 90% of construction waste recycled
- Abundant windows provide natural lighting



Home Depot Foundation Award for Excellence for Affordable Housing Built Responsibly

- All units for residents earning <80% AMI, 40% of units for residents earning <30% AMI
- Rain water harvested and used to flush toilets
- All paints and adhesives low VOC
- Energy efficient elevators consume 40% less than conventional elevators
- All water heaters and furnaces >90% efficient

