

USACE Floating Plant Environmental Improvements September 2009

The U.S. Army Corps of Engineers (USACE) operates a fleet of over 2500 vessels nationwide, ranging from small patrol boats to seagoing hopper dredges. USACE has been making vessel improvements in response to increasing environmental restriction and scrutiny in the maritime sector, the age of the USACE fleet, and the requirement of PL 95-269 that “federal fleet shall be maintained to technologically modern and efficient standards...”. Some improvements directly reduce environmental impacts, others intended for efficiency also produce environmental benefits. The projects below demonstrate the complexity, level of commitment, and benefits:

Dredge JADWIN Fiscal Year 2005 (Project Cost ~\$5.0M)

- Conversion from open props to propellers in Kort Nozzles.
- ~30% reduction in propulsion fuel consumption.

Dredge ESSAYONS Fiscal Year 2003-2010 (Project cost ~\$37M)

- Repowering with Tier 2 engines to meet California air quality standards.
 - Annual carbon footprint reduction of 4,500,000 lbs.
- ~15% reduction in fuel consumption and improved dredging efficiency.
- Improved power management of shipboard generation systems.

Dredge ESSAYONS Fiscal Year 2012-2013 (Estimated Cost ~\$5.5M)

- Bow Bulb Installation.
- ~10% reduction in propulsion fuel consumption.
 - Expected annual carbon footprint reduction of 2,550,000 lbs.

Dredge YAQUINA Fiscal Year 2008-2013 (Estimated cost ~\$28M)

- Repowering with Tier 2 engines to meet California air quality standards.
 - Expected annual carbon footprint reduction of 1,230,000 lbs.
- Expected reduction in fuel consumption comparable to ESSAYONS.
- Improved dredging efficiency – updated controls, winches, & pumps.

Dredge WHEELER Fiscal Year 2009-2015 (Estimated cost ~\$50M)

- Repowering with Tier 2 engines.
 - Expected annual carbon footprint reduction of 3,500,000 lbs.
- Expected reduction in fuel consumption comparable to ESSAYONS.
- Improved dredging efficiency – updated controls & monitoring.

Dredges POTTER & JADWIN Fiscal year 2010-2011 (Estimated Cost \$5.0M each).

- Dredge Pump Replacement for better efficiency, on shore discharge, and sharing of spares.
- Estimated 15% reduction in pumping fuel consumption.

Dredge McFARLAND Fiscal Year 2010-2014 (Estimated cost ~\$12M)

- Upgrades to improve electrical system reliability.
- Improved power management for electrical generation.
- Asbestos abatement.
- Improved dredging efficiency – updated controls & winches.

Portland Surveyboats Fiscal Year 2009-2010 (Estimated Cost \$5K each boat)

- Low Surface Energy Antifouling Application (Intersleek 900).
- ~5% increase in fuel economy.
- non-toxic/no biocide antifouling performance.

Total Investments FY2005-2015:	~\$147,500,000
Estimated Annual Fuel Reduction:	695,250 gallons #2 diesel
Estimated Annual Carbon Footprint Reduction:	13,905,000 lbs.