

# Summary of In-Use Evaluations of Two Heavy Duty Hybrid Applications

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## Motivation

- Petroleum Reduction
- GHG Emission Reduction
- Fuel and Emission Benefits
- Heavy Duty Applications

## Objective

- In-use evaluation
- Port tub boat and yard hostler



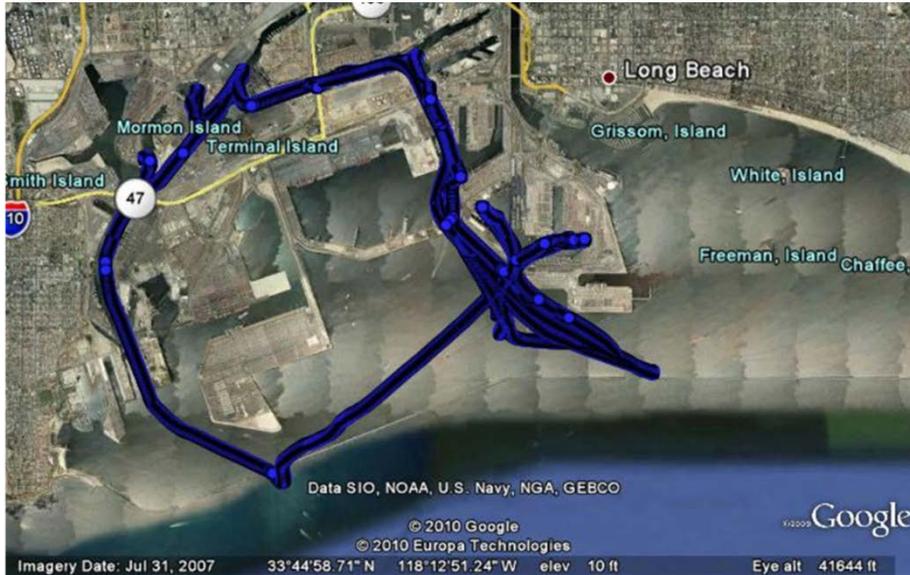
Tub boat



Yard hostler



# In-Use Heavy Duty Hybrid Evaluation (highlights)



## Tug boat

- 27% fuel savings
- 79% PM reduction
- Ship assist biggest savings

## Future Research



## Yard hostler

- Initially fuel penalty
- Optimized 10-15% benefit

