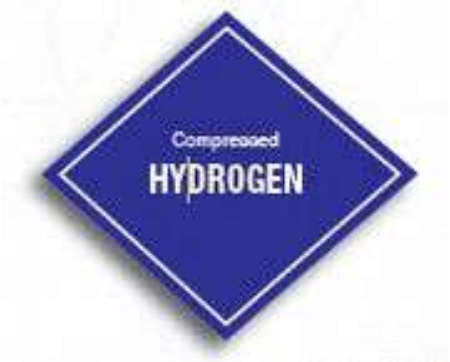


Clean Fuels Program Advisory Group Meeting

Stationary

Hydrogen Fueling Infrastructure

February 6, 2013

Larry Watkins
Technology Advancement Office

AQMD Support for H2 Infrastructure

•Original five cities	$1,916,000
•Five cities contract extension	$1,379,000
•Burbank O&M*	$ 200,000
•Torrance Pipeline	$ 489,051
•Fountain Valley	$ 750,000
•UCI support	$1,063,400
•CEC Awards to APCI	$1,000,000
•Diamond Bar station	$1,237,000
•TOTAL	$8,034,451

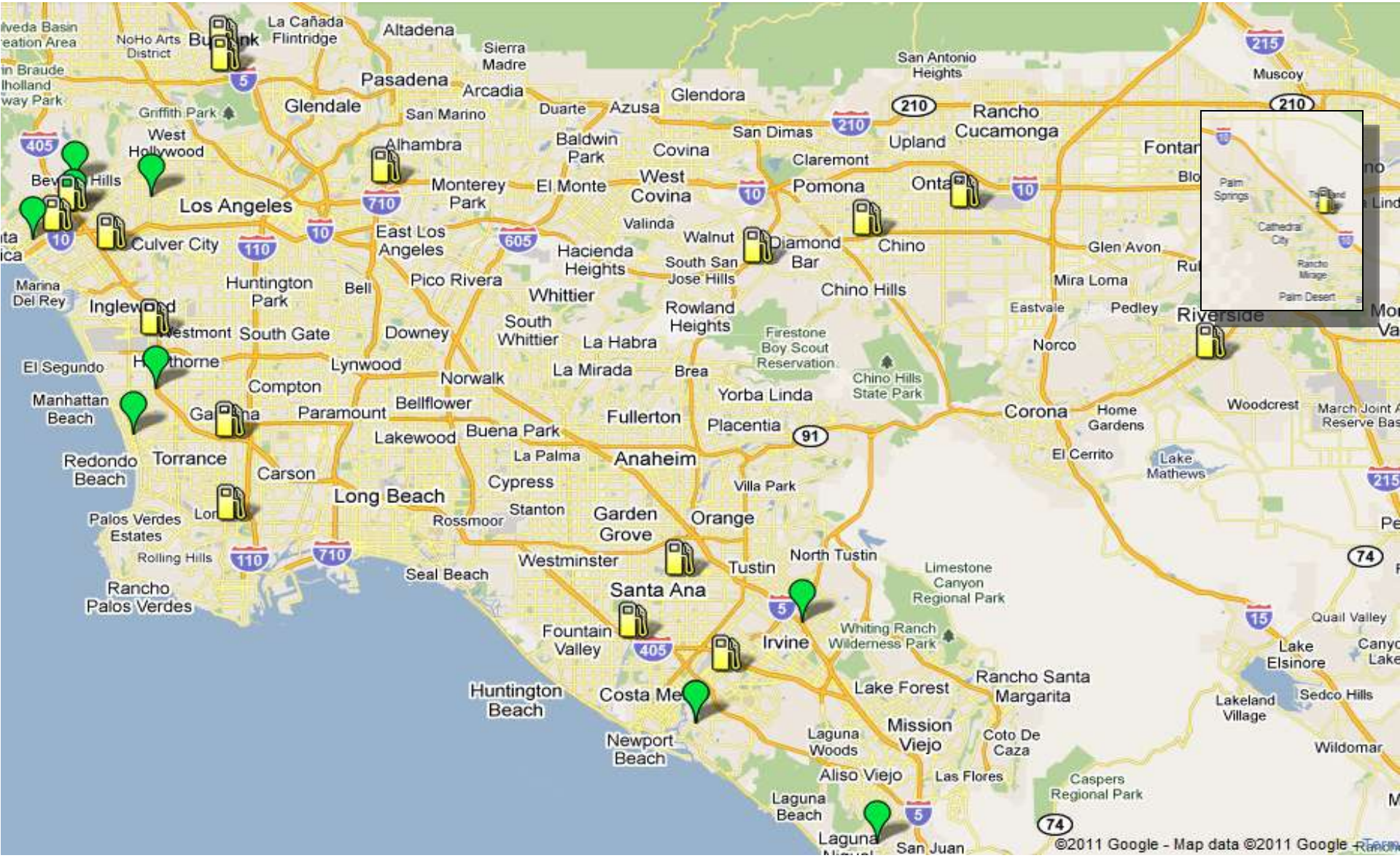
*(also $300k from CARB & $360k from DOE)

Stationary and Mobile Fuel Cells

- California Fuel Cell Partnership
- CA Stationary Fuel Cell Collaborative
- Bridge to transportation and renewable feedstock

Courtesy of FCE and APCI

Hydrogen Fueling Stations
Current and Planned



AQMD Hydrogen Station

- AQMD hydrogen fueling needs have increased with vehicle growth
- 24 kg/day current capacity
- 150 kg/day new station capacity
- 350 and 700 bar
- CEC AB 118 funding for APCI built Station at AQMD – 18 months

Other AQMD Funded Hydrogen Stations

- Burbank
  - $860k funding from ARB, NREL & AQMD
  - 350 & 700 Bar, 20kg/day, Protera Bus
- University of California, Los Angeles
  - Shell Culver City equipment, Burbank electrolyzer
- Mebtahi Is now open for business
- Linde, Laguna Nigel $250k in cost-share

Retail Stations Still Needed

Shell Newport Beach


Shell Hydrogen – Santa Monica

CalState LA

Mebtahi-Chevron, Harbor CIty

Courtesy of CARB

Hydrogen Vehicle and Infrastructure Summary

- Southern California is primary market
- Infrastructure and vehicles must be deployed together
- Early deployments highly dependent on government support (no business case)
- Infrastructure is critical for early success and further deployments
- Need to re-engage Federal government