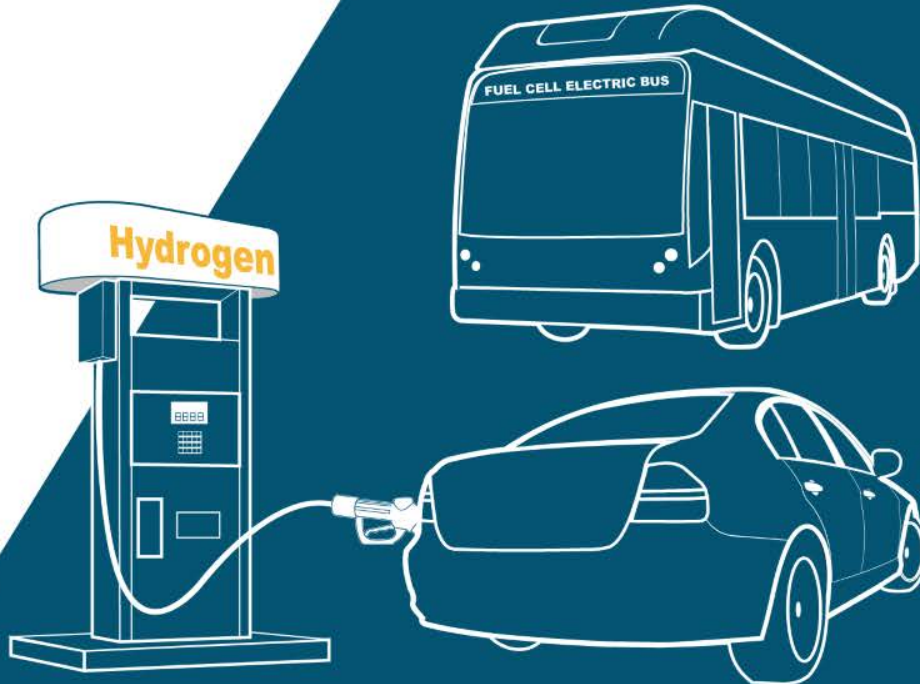


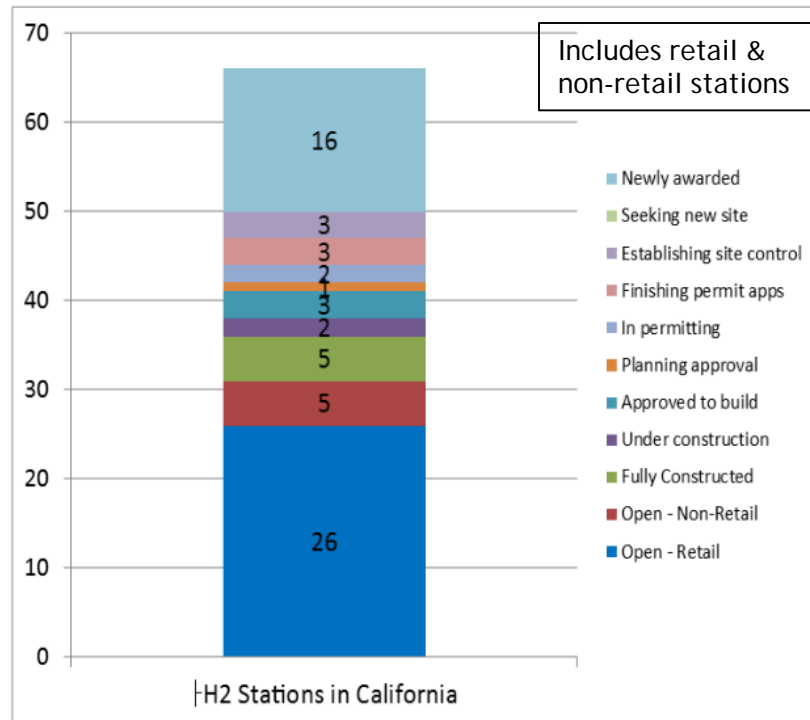
Retail Hydrogen Fueling Station Network Update

Joe Gagliano & Ben Xiong

3/22/2017

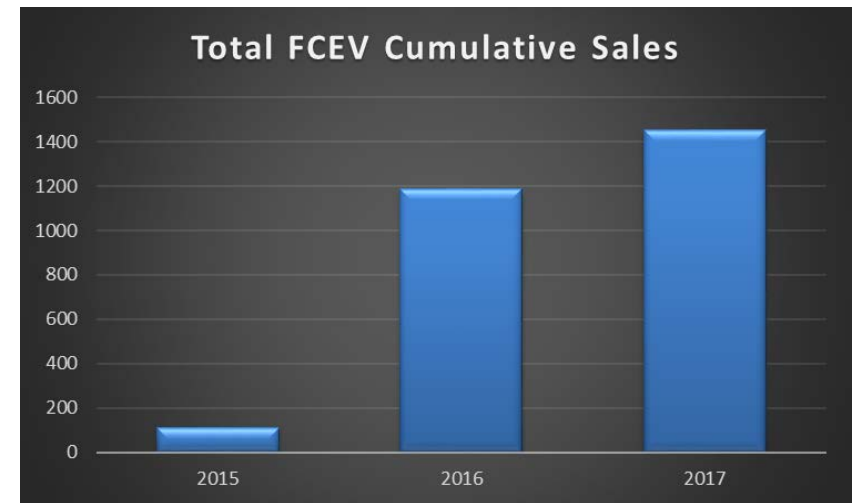


California H2 Station Network & FCEV Totals



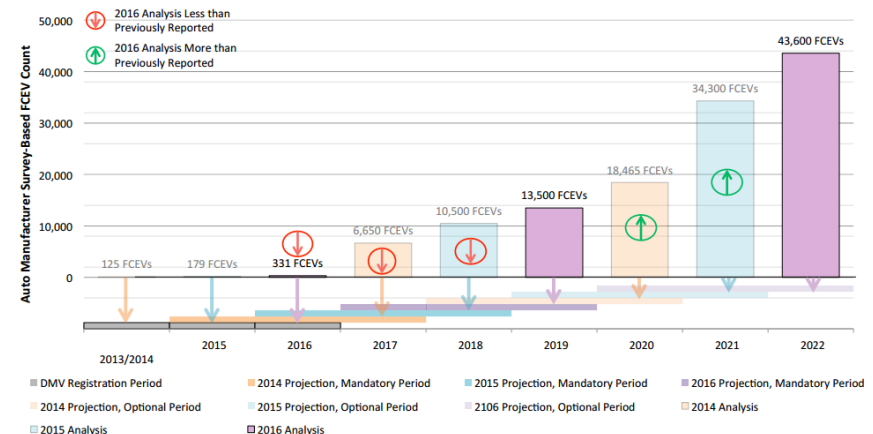
Retail Openings in 2016: 25 stations
 Forecast estimate 2017: up to ~38
 Forecast estimate 2018: ~49
 Forecast estimate 2019: ~65

Source: Go-Biz Smartsheet



Source: HybridCars.com

Figure ES3: Current and Projected On-Road FCEV Populations and Comparison to Previously Reported Projections



*ARB July 2016 AB 8 Report - OEM Surveys

Retail Station Openings 2017

- Recently Opened



- Forecast Next Stations

- South Pasadena
- Ontario
- Woodside
- San Ramon
- Fremont
- Thousand Oaks
- Lawndale
- Torrance

New Hydrogen Stations

- 16 stations proposed for awards
 - FirstElement Fuel (8)
 - Shell (7)
 - Air Liquide (1)
- Next steps: CEC business meeting approval & execution of grant agreement
- O&M awards in separate notice of proposed awards

- San Francisco (3)
- Berkeley
- Sherman Oaks
- Sunnyvale
- Walnut Creek
- Santa Monica
- Oakland
- Huntington Beach
- San Diego
- Sacramento (2)
- Campbell
- Irvine
- Santa Nella (1-5)

www.energy.ca.gov/contracts/GFO-15-605_NOPA.pdf

http://energy.ca.gov/contracts/GFO-15-605_NOPA_Revised.pdf

H2 Station Network

March 2017

Northern CA Hydrogen Stations

Retail: Open

Campbell - Winchester Blvd
Hayward
Mill Valley
San Jose
Saratoga
South San Francisco
Lake Tahoe-Truckee
West Sacramento

Other: Open

Emeryville - AC Transit
Oakland - AC Transit

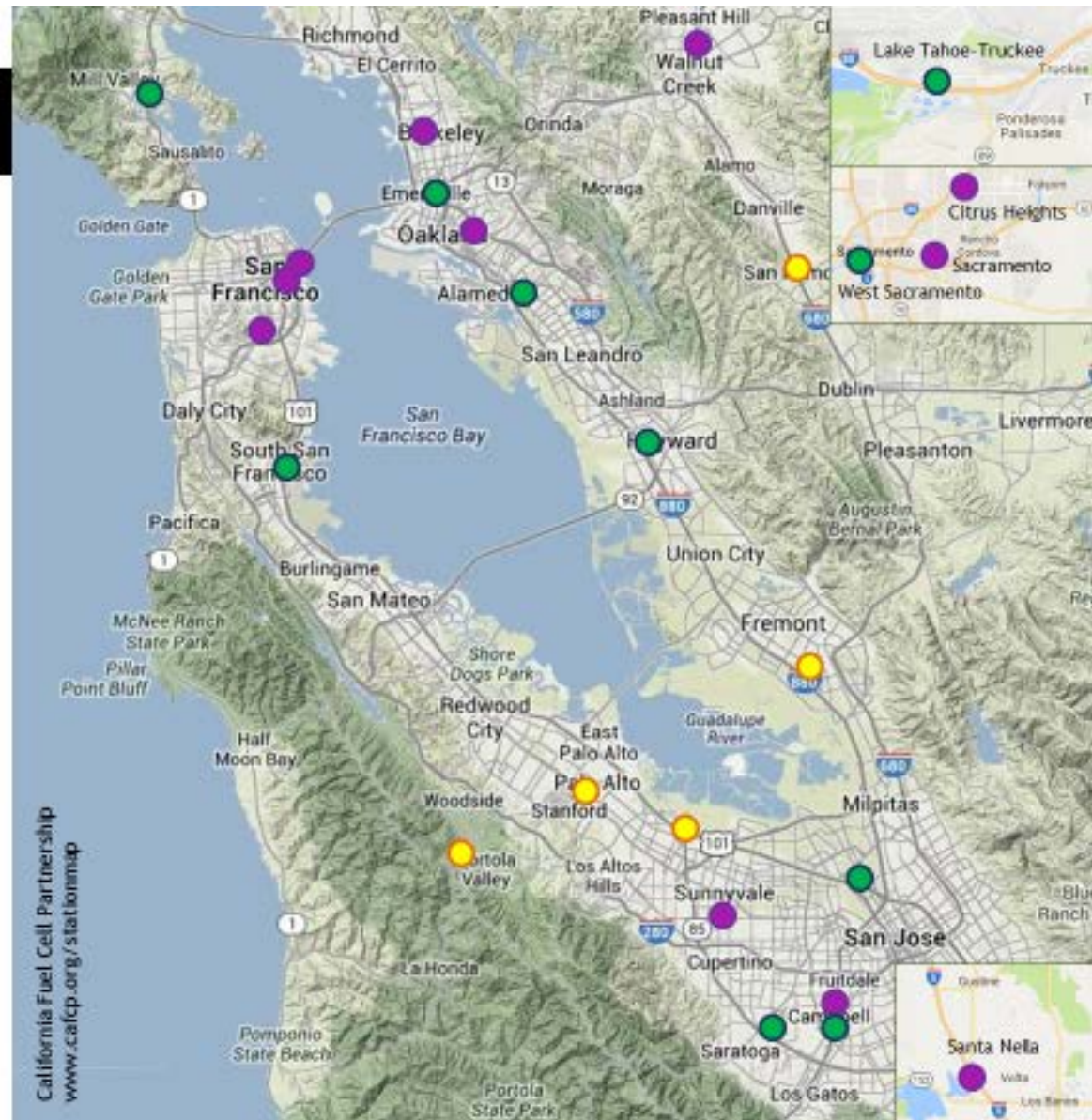
Retail: In Development

Fremont
Mountain View
Palo Alto
*Rohnert Park
San Ramon
Woodside

*Not shown on map

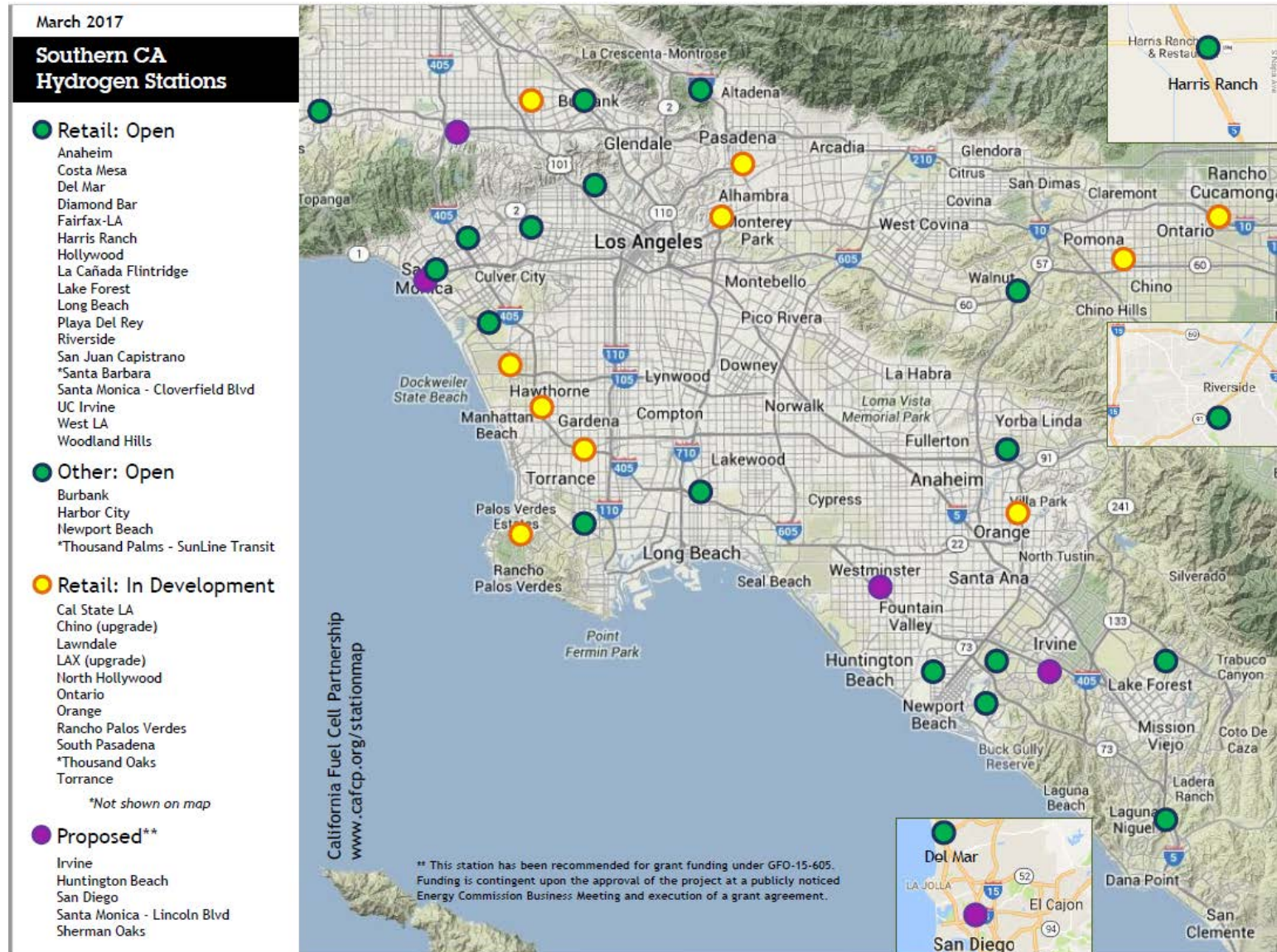
Proposed**

Berkeley
Campbell - East Hamilton Ave
Citrus Heights
Oakland - Grand Ave
Sacramento
San Francisco - Third St
San Francisco - Harrison St
San Francisco - Mission St
Santa Nella
Sunnyvale
Walnut Creek





H2 Station Network



ZEV States Outside California



ZEV States*

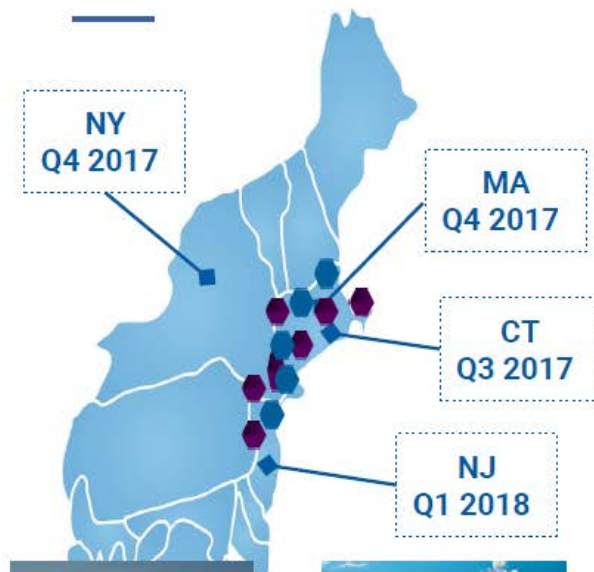
Connecticut	New York
Maine (non-MOU)	Rhode Island
Maryland	Oregon
Massachusetts	Vermont
New Jersey (non-MOU)	

*8 State MOU - 3.3M ZEVs by 2025



Northeast Retail H2 Stations

H2 Stations Covering the Northeast



Network of 12 Stations

Start-up over Q3-Q4 2017 and Q1 2018



Dedicated H₂ supply chain by



Project in collaboration with



New York

Bronx
Hempstead
Brooklyn
Site Location TBA



Connecticut

Hartford
Site Location TBA,



Massachusetts

Braintree
Mansfield



New Jersey

Lodi
Site Location TBA



Rhode Island

Site location TBA



CAFCP Station Map & SOSS

California FUEL CELL PARTNERSHIP
DRIVING FOR THE FUTURE

HOME CARS STATIONS BENEFITS BUSES & TRUCKS RESOURCES

Map Satellite

Search by Zip Code or Address GO

List Stations Filter By

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<http://cafc.org/stationmap>
m.cafc.org



In Closing

- Retail hydrogen fueling station network is starting to populate key markets
 - Initial network development in Northeast US underway
 - Work is also beginning on fuel cell trucks & fueling stations
- Over 1,400 fuel cell vehicles on California roadways
- Customer experience is a top priority
- Station reliability continues to increase
- Stakeholders refining the process to get retail stations open
- Members are in discussions to begin planning for 500+ retail stations



Questions or comments?



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CaFCP Members

Air Liquide
 Alameda-Contra Costa Transit District (*AC Transit*)
 Automotive Fuel Cell Cooperation
 BAE Systems
 Ballard Power Systems
 Bay Area Air Quality Management District
 California Air Resources Board
 California Department of Food and Agriculture
 California Energy Commission
 California State University - Los Angeles
 CALSTART
 The Center for Energy Efficiency and Renewable
 Technologies (*CEERT*)
 Center for Transportation and the Environment (*CTE*)
 Daimler
 Energy Independence Now
 FASTECH
 FirstElement Fuel, Inc.
 General Motors
 Honda
 Hydrogenics

Hydrogen-Xt, Inc.
 HyGen
 Hyundai
 ITM Power
 Institute of Transportation Studies, UC Davis
 KPA
 Linde North America, Inc.
 National Fuel Cell Research Center, UC Irvine
 National Renewable Energy Laboratory (*NREL*)
 Nel Hydrogen
 Nissan
 Office of Governor Edmund G. Brown Jr.
 Sandia National Laboratories
 South Coast Air Quality Management District
 Southern California Gas Company
 SunLine Transit Agency
 Toyota
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TRANSIT AGENCY

