

# FCEVs and Hydrogen *A California Road Map*

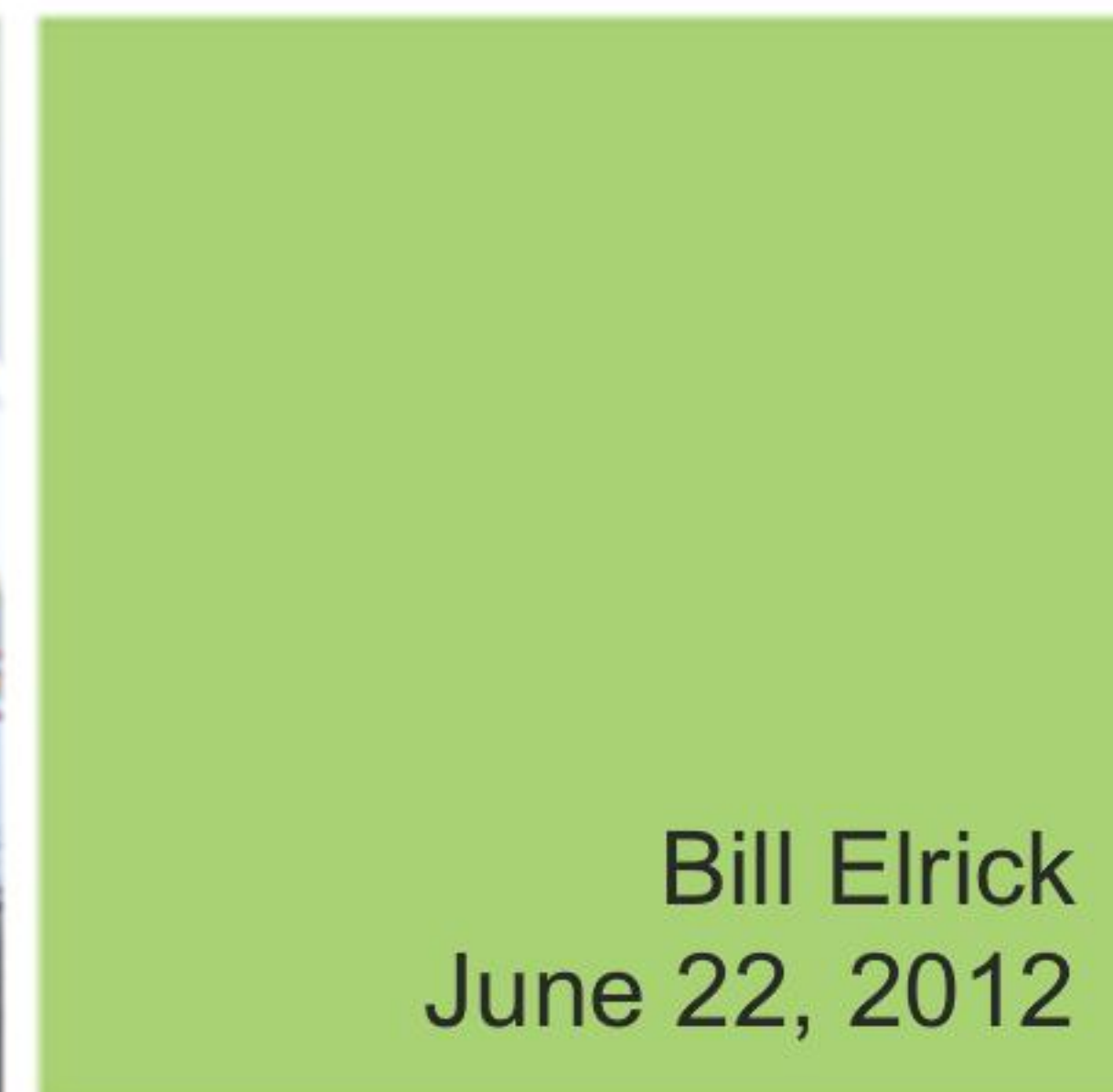
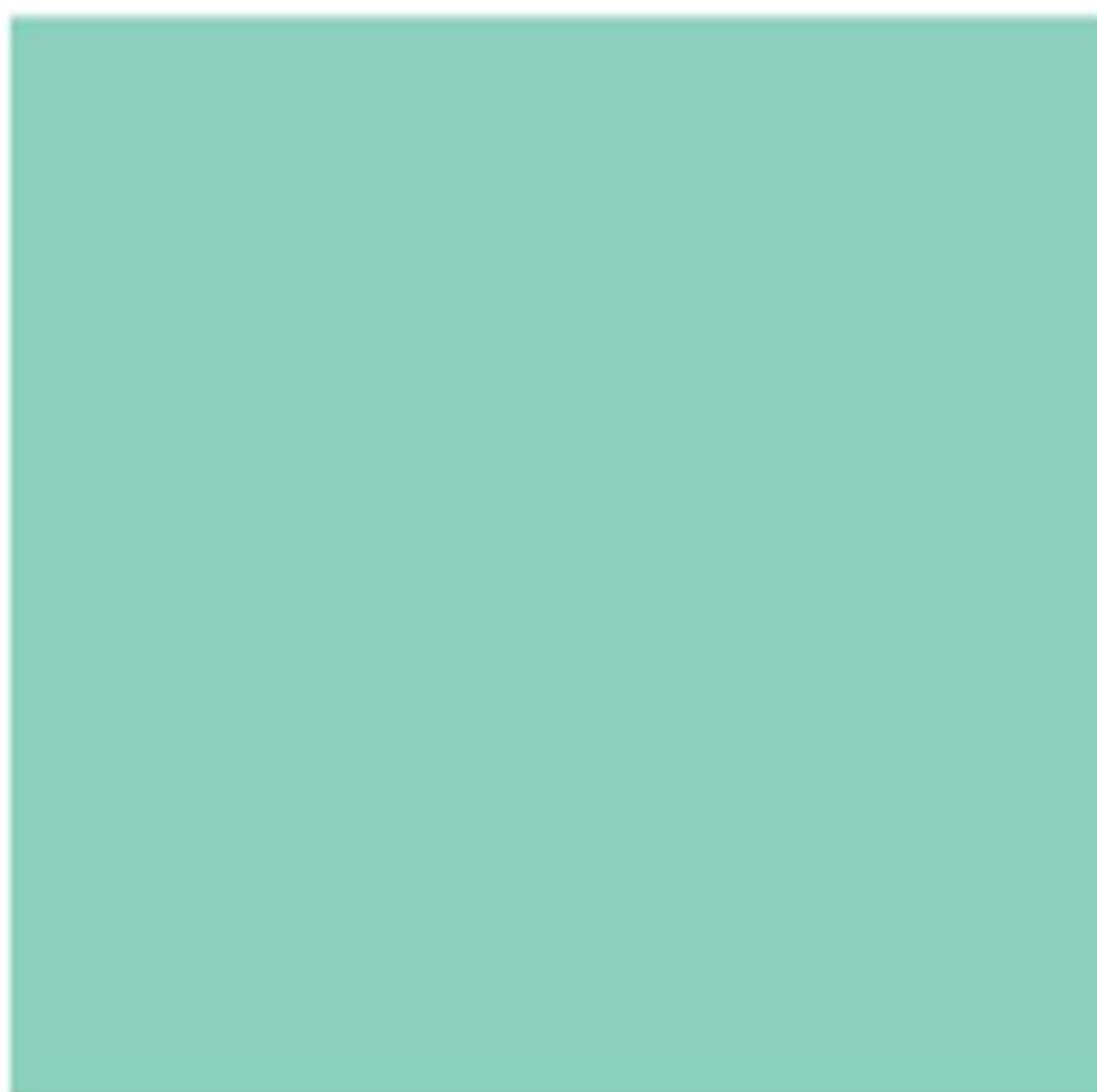
California Energy Commission

**DOCKETED**  
**12-HYD-01**

TN # 66132

JULY 02 2012

Preparing for market launch



Bill Elrick  
June 22, 2012



# Progress to date

- ▶ Over 200 FCEVs & FCBs now
- ▶ >4 million road miles
- ▶ 8 public H<sub>2</sub> stations
- ▶ 14 new or upgrade stations in development
- ▶ California is on track to have approximately 20 public hydrogen stations by end of 2013





# Projected FCEVs in CA

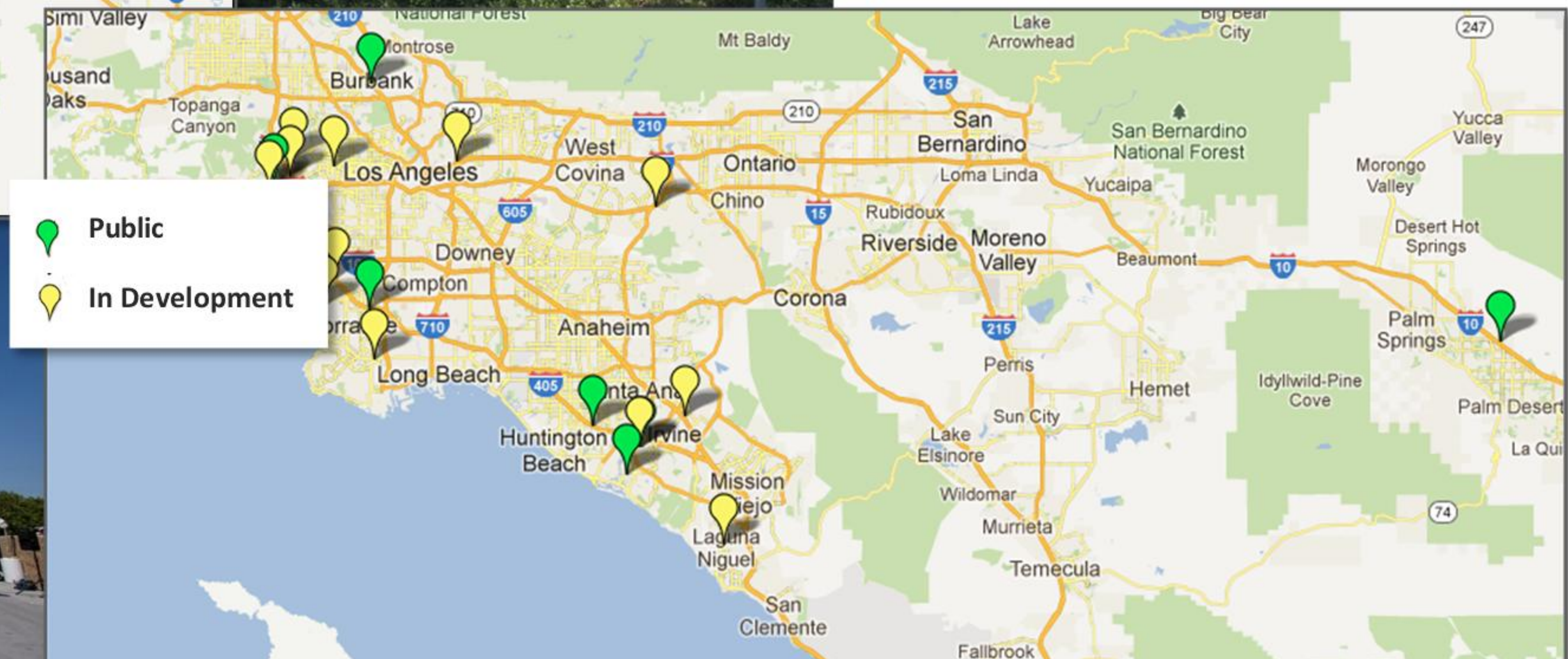
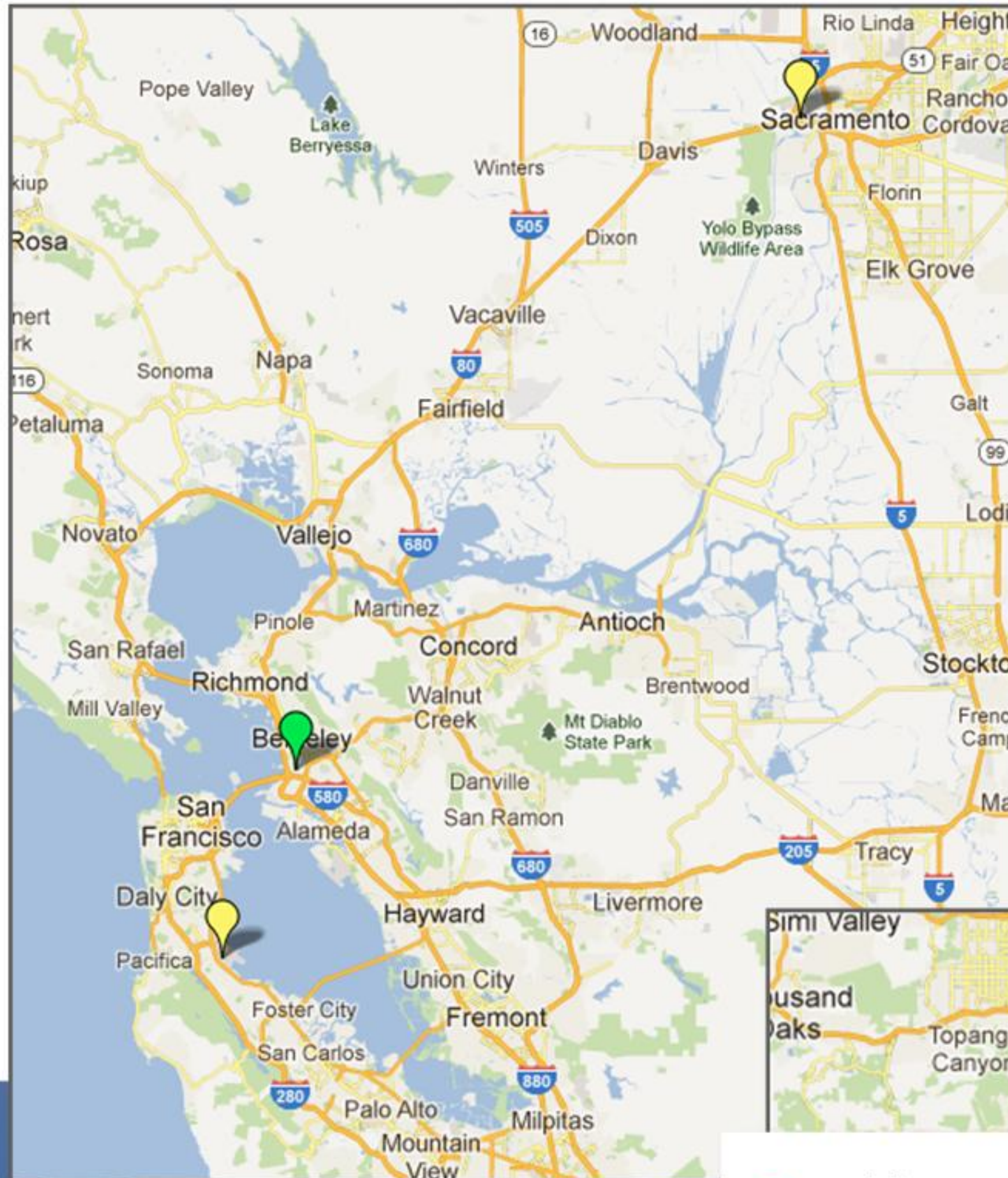


Survey Year	2012	2013	2014	2015 – 2017*
2010-2011	312	430	1,389	53,000

\*For competitive reasons, detailed volume assessments have not been provided during 2015-2017.



# Developing station clusters





# We've learned

- ▶ Stations must come before vehicles
- ▶ People want fuel near home, work and in weekend destinations
- ▶ Stations must be customer friendly
- ▶ Six minutes is the target maximum travel time
  - For early market clusters



# Access to stations

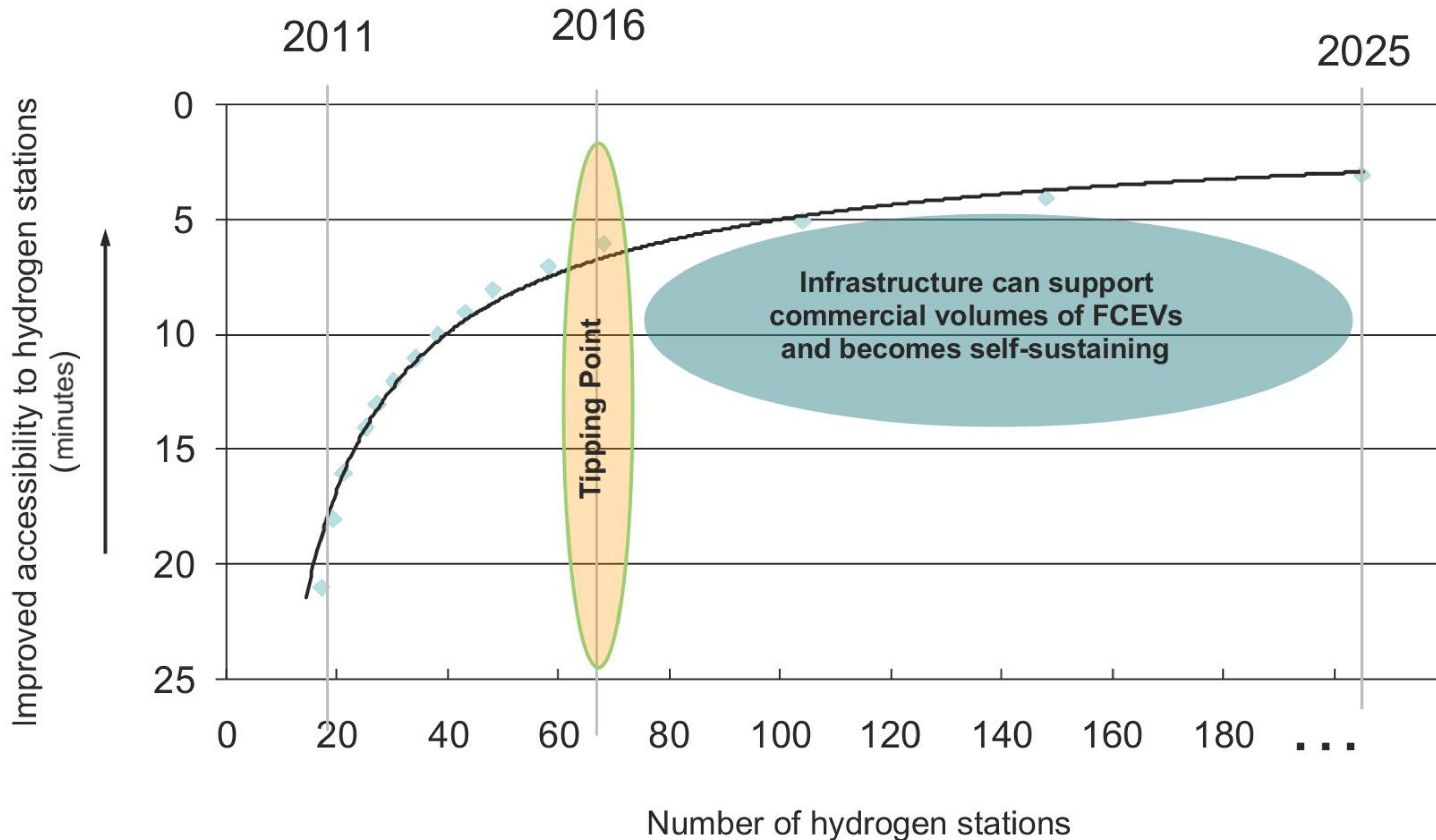


Chart courtesy of National Fuel Cell Research Center at UC Irvine



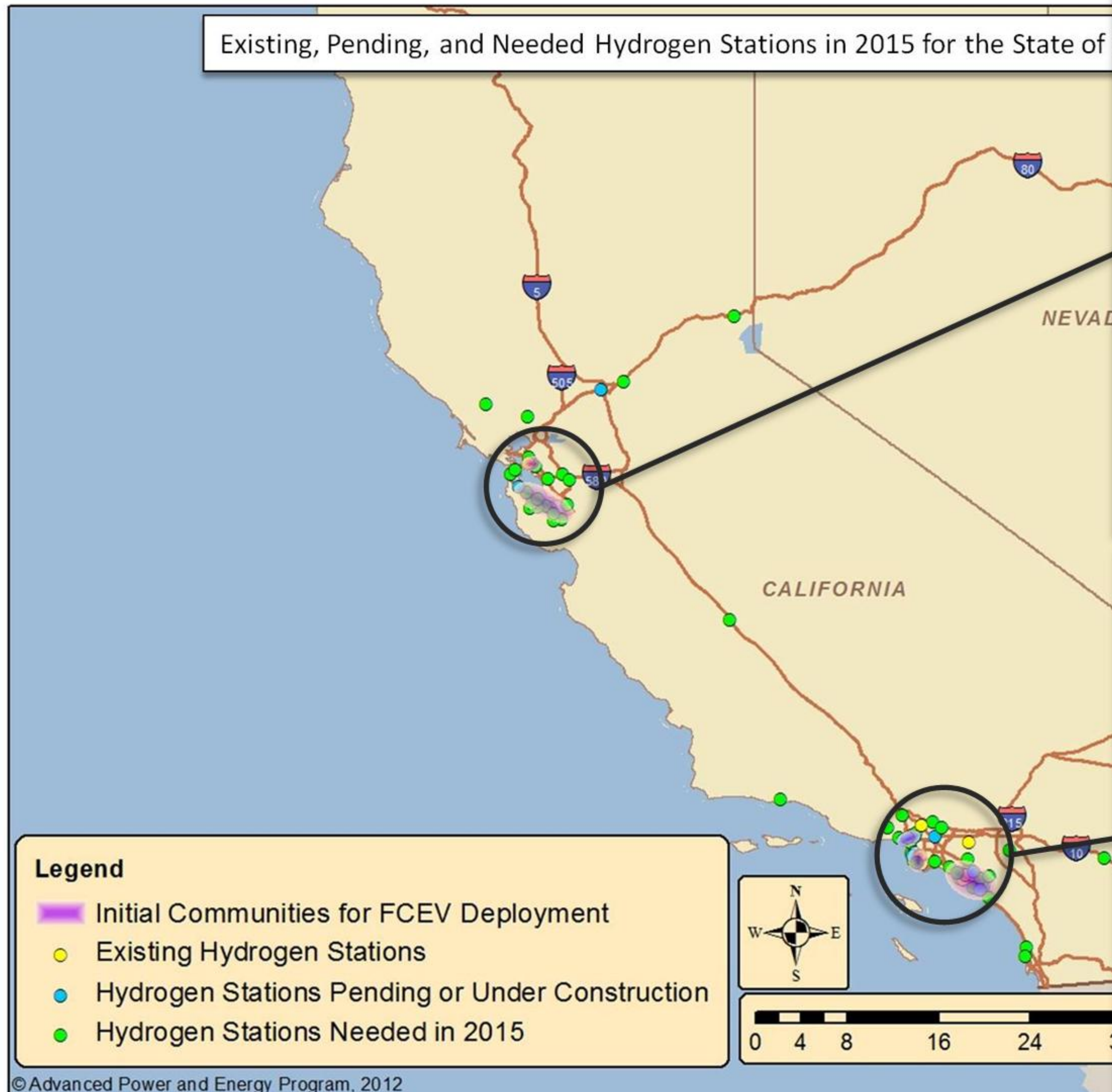
# What is the “right” number?

- ▶ Identified need for 68 stations by beginning 2016
  - Cluster markets, destinations and connectors
- ▶ 17 stations open or in development
  - Current AB118 funding (\$29.7M) to support additional 15-20 stations
- ▶ Additional stations needed to reach 68
  - Additional support needed

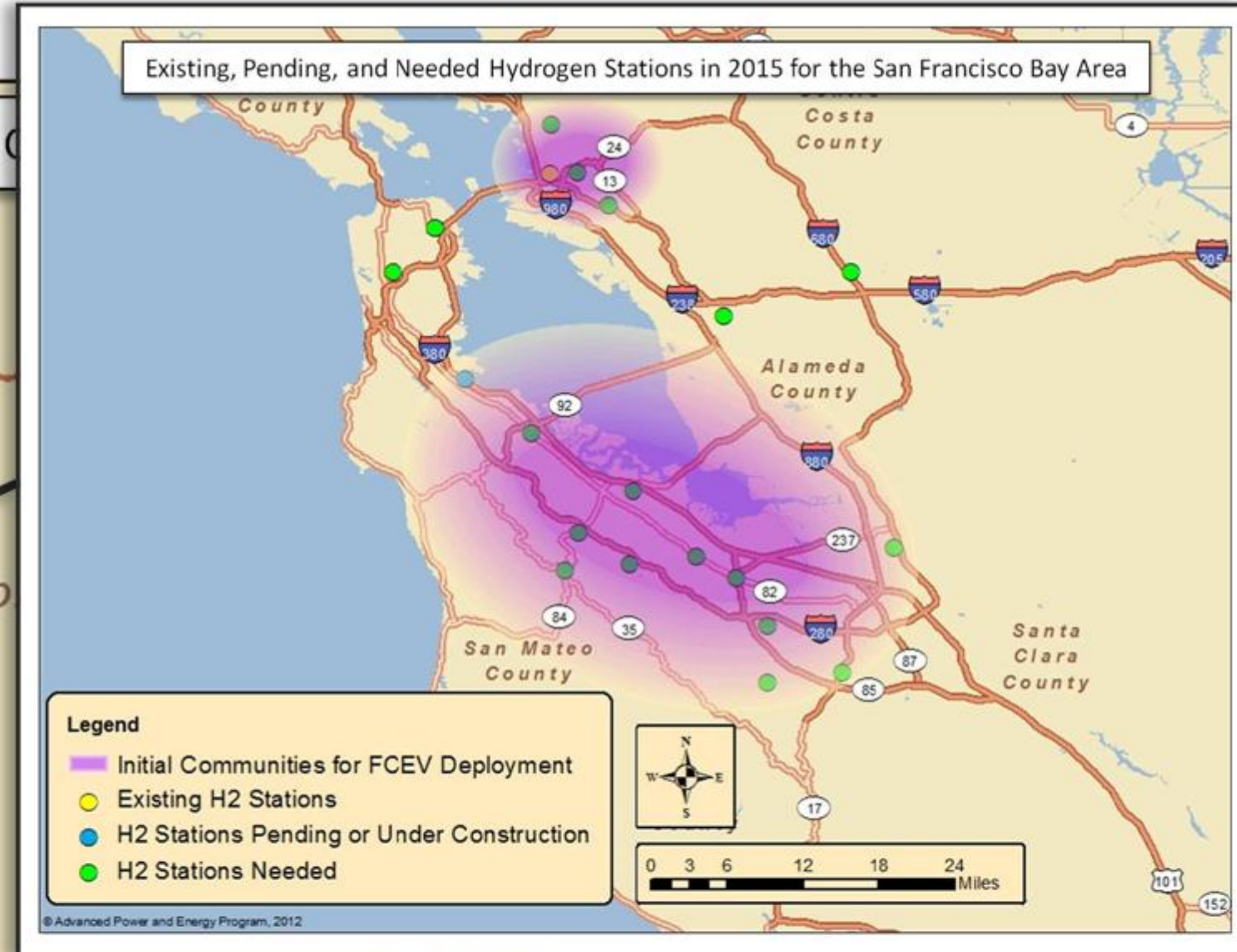


# The initial network

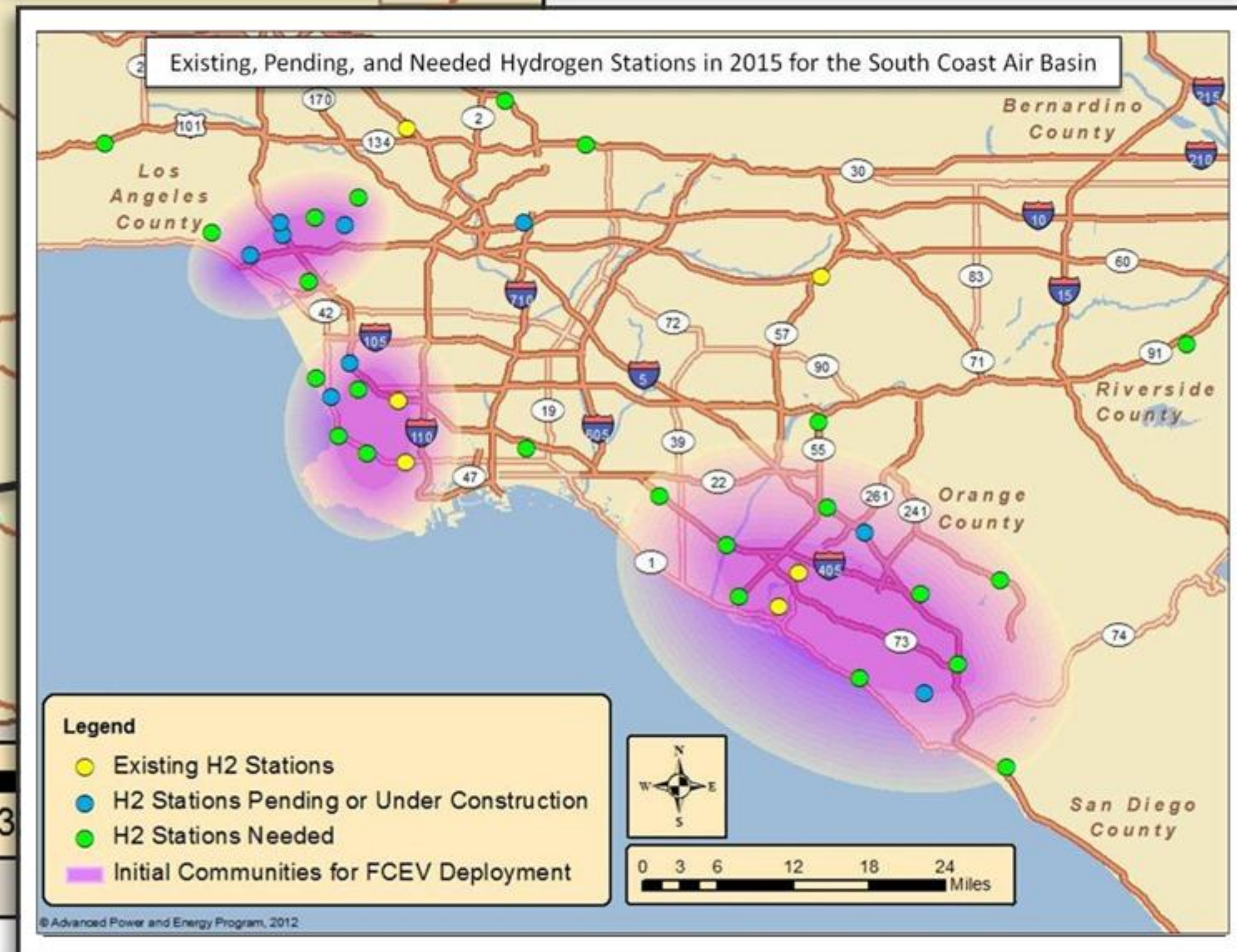
Existing, Pending, and Needed Hydrogen Stations in 2015 for the State of California



Existing, Pending, and Needed Hydrogen Stations in 2015 for the San Francisco Bay Area



Existing, Pending, and Needed Hydrogen Stations in 2015 for the South Coast Air Basin





# Funding analysis

- ▶ Ensure we can build out the 68 station network
- ▶ Keep all stations operating as FCEV volume grows
- ▶ \$65M additional funding needed
  - “Capital buy-down” & “cash flow” models
  - O&M costs for both existing and new stations



# The *California Road Map* provides...



## ▶ Coverage

- Fueling opportunities

## ▶ Confidence

- Automakers build volume
- Customers purchase FCVs

## ▶ Commercial

- To launch market and build capacity





California Fuel Cell Partnership  
[www.cafc.org](http://www.cafc.org)