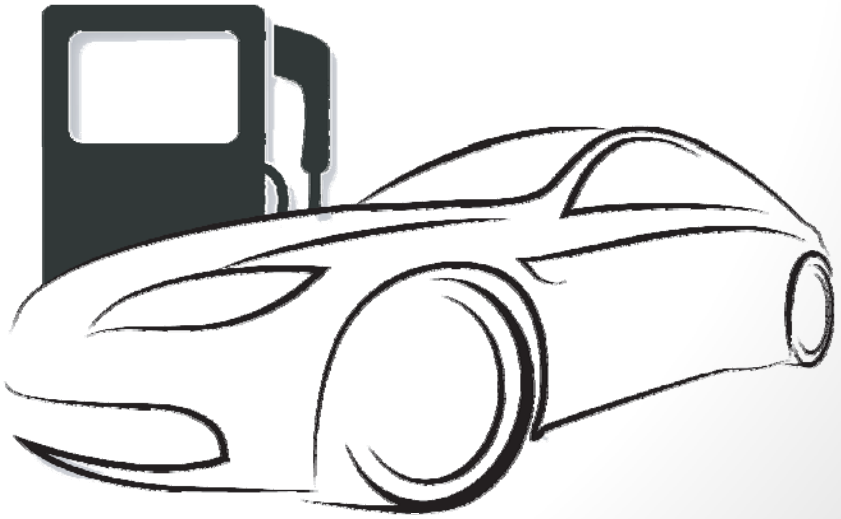
Electric Vehicle Tourism

October 22, 2014



The Panel

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ARIZONA OFFICE OF TOURISM

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ARIZONA OFFICE OF TOURISM

What is an Electric Vehicle?

Hybrid Electric Vehicles: powered by an internal combustion engine (ICE) or other propulsion source; has a battery that is charged through regenerative braking and by the ICE. HEVs are not plugged in to charge.

Plug-In Hybrid: powered by an ICE that uses energy stored in a battery. The vehicle can be plugged into an electricity source to charge the battery.

Electric Vehicle: powered by electricity that powers a motor. The vehicle is plugged into an electricity source and can also be referred to as a battery electric vehicle (BEV).

Source: Alternative Fuels Data Center

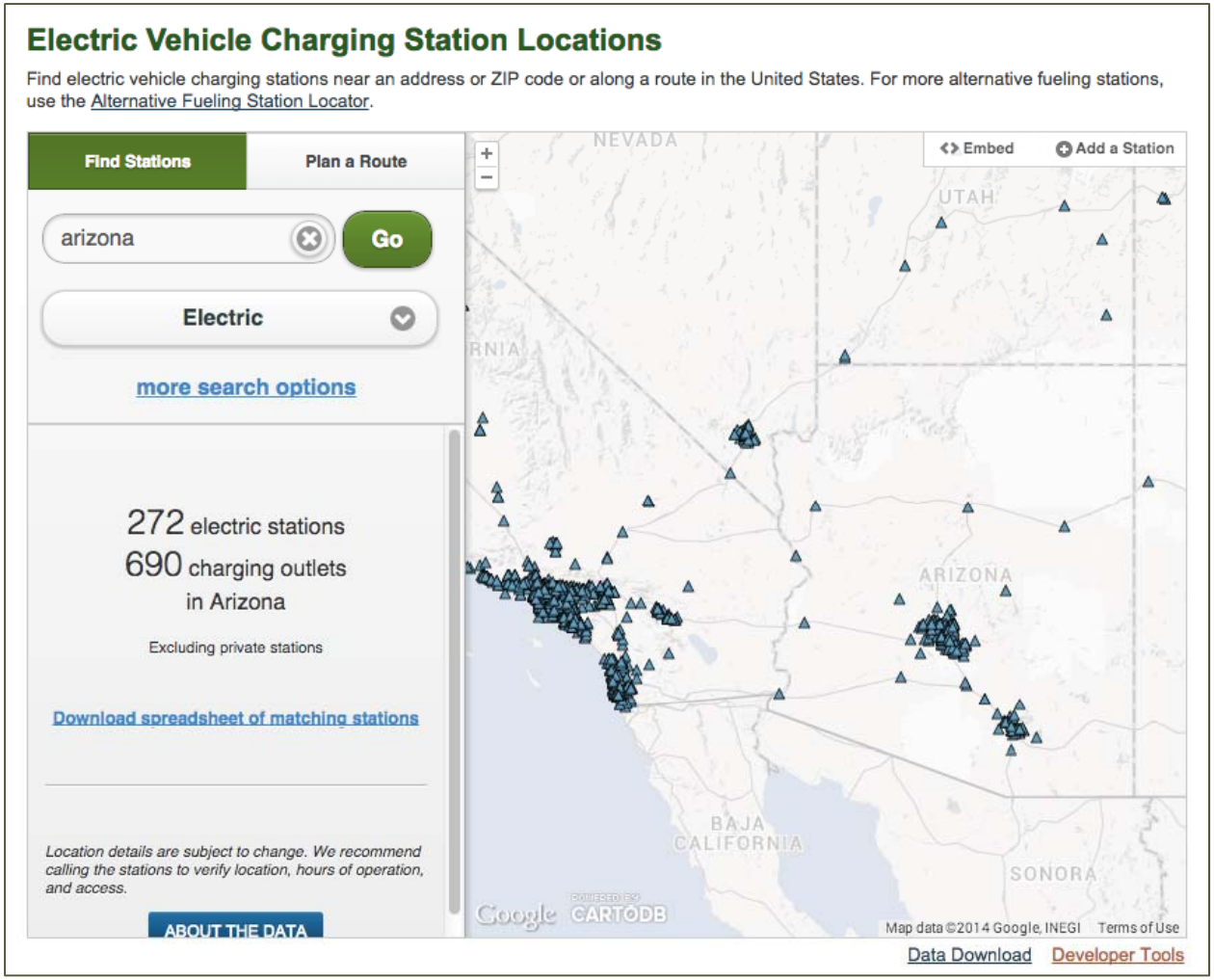
Charging Infrastructure

- Blink, RV parks, Tesla Superchargers, hotels, dealerships, shopping malls, etc. This is key to alleviate range anxiety.

Quartzsite Supercharger

Tempe Marketplace

Charging Infrastructure



Source: Alternative Fuels Data Center, October 18, 2014

Charging Infrastructure

Plugs 101

Charge Level	Plug	Voltage	Current	Power	Can power…	Charge EV
Level 1	Wall outlet	120 V	8-12 amps	1.0-1.4 kW	Toaster	8-24 hours
Level 2	J1772	240 V	15-100 amps	3.6-19.2 kW	Clothes dryer	4-8 hours
Level 3 (DC Fast Charger)	See next slide	480-600 V	80-120 amps	20-72 kW	5-10 Central a/c units	30 minutes

Source: Clean Cities Coalition

Charging Infrastructure

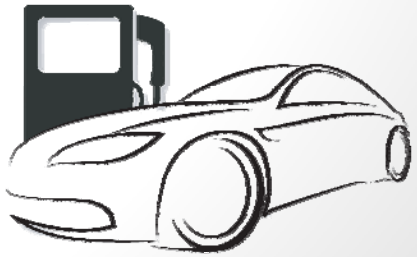
DCFC Plugs

Level 3 (DCFC)	EVs with plug
CHAdeMO	Kia Soul EV, Mitsubishi i-MiEV, Nissan LEAF, Tesla Model S (with adaptor tbd)
Combo (CCS)	BMW i3, Chevy Spark, VW Golf
Tesla Supercharger	Model S

Where is this EV?

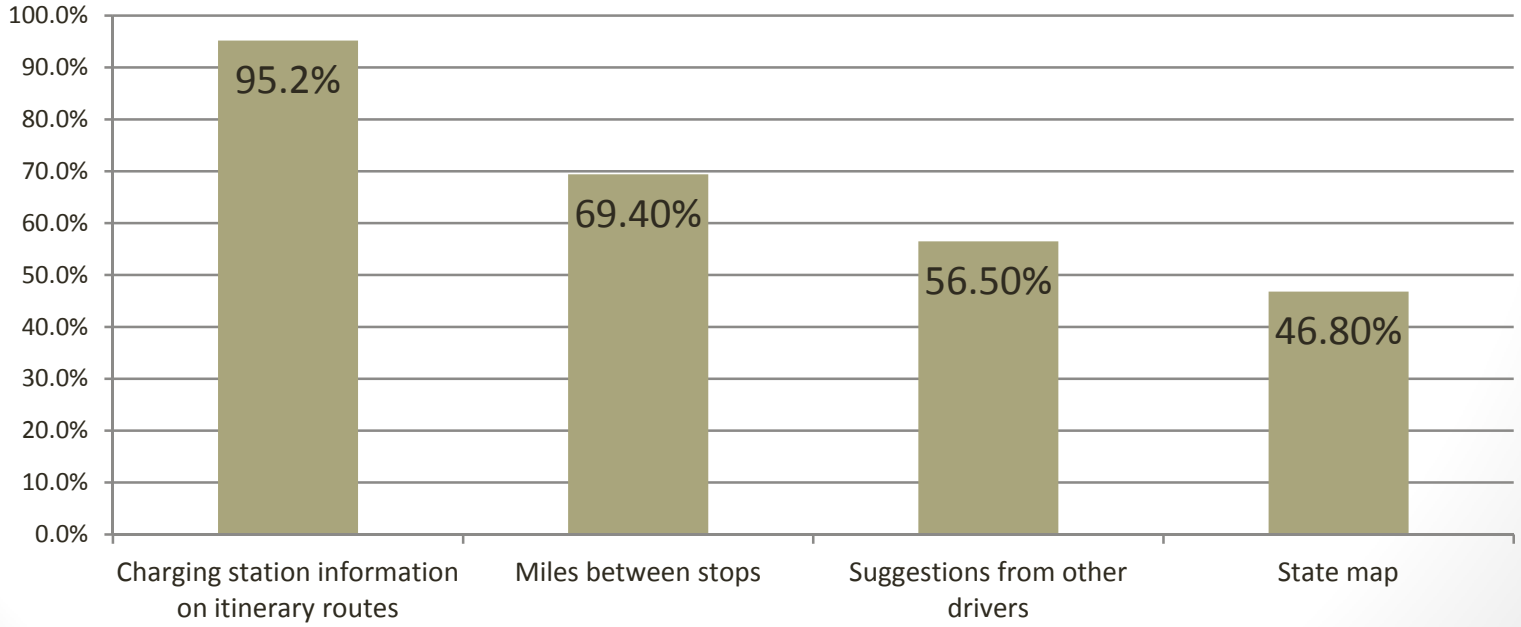
Photo Courtesy of Anthony Helmstetter

Electric Vehicle Tourism at the Arizona Office of Tourism



Survey: a guide for the guide

- Suggestions from respondents:
  - Hotels, attractions, camping spots with EV charging spots.
  - Actual pictures of charging stations, services near charging stations.
  - Time to charge vs distance tables.
  - Changes in elevation -- that can have a huge impact on range.

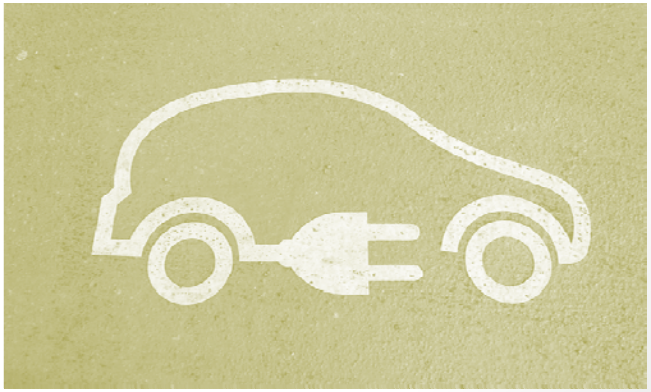


EV Tourism @ AOT

Leading the charge:

Arizona Official State Electric Vehicle Visitor's Guide

- Electric Vehicle consumer page launched in May
  - 3 itineraries
  - 2,000+ pageviews



Arizona Official State Electric Vehicle Visitor's Guide

Arizona Mileage Map

Arizona Mileage Chart

Regional Temperature Chart

City Elevation Chart

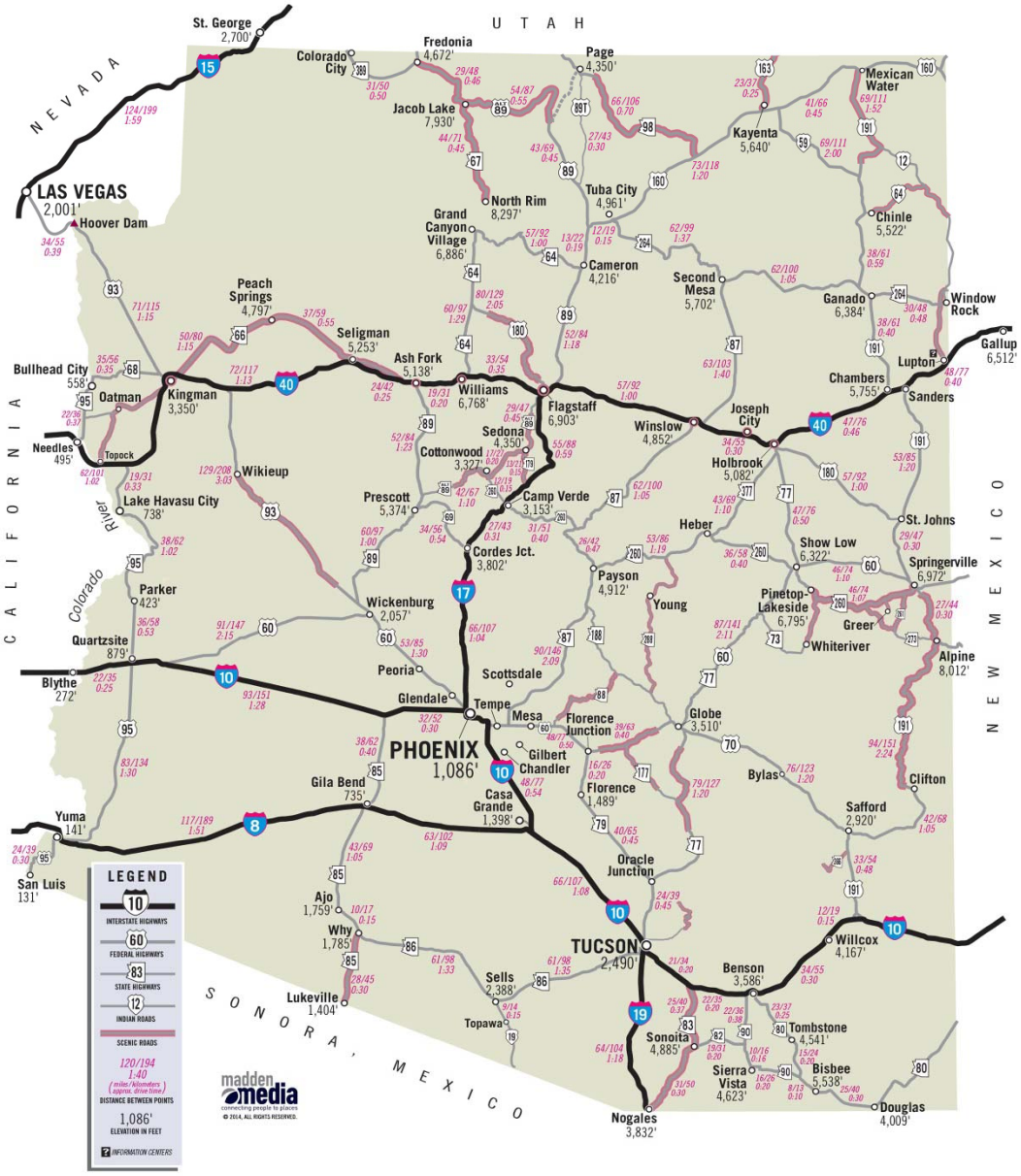
Hotels by Charge Type

Itinerary - Southern California to Northern and Central Arizona

ARIZONA
GRAND CANYON STATE

www.arizonaguide.com

ARIZONA MILEAGE MAP



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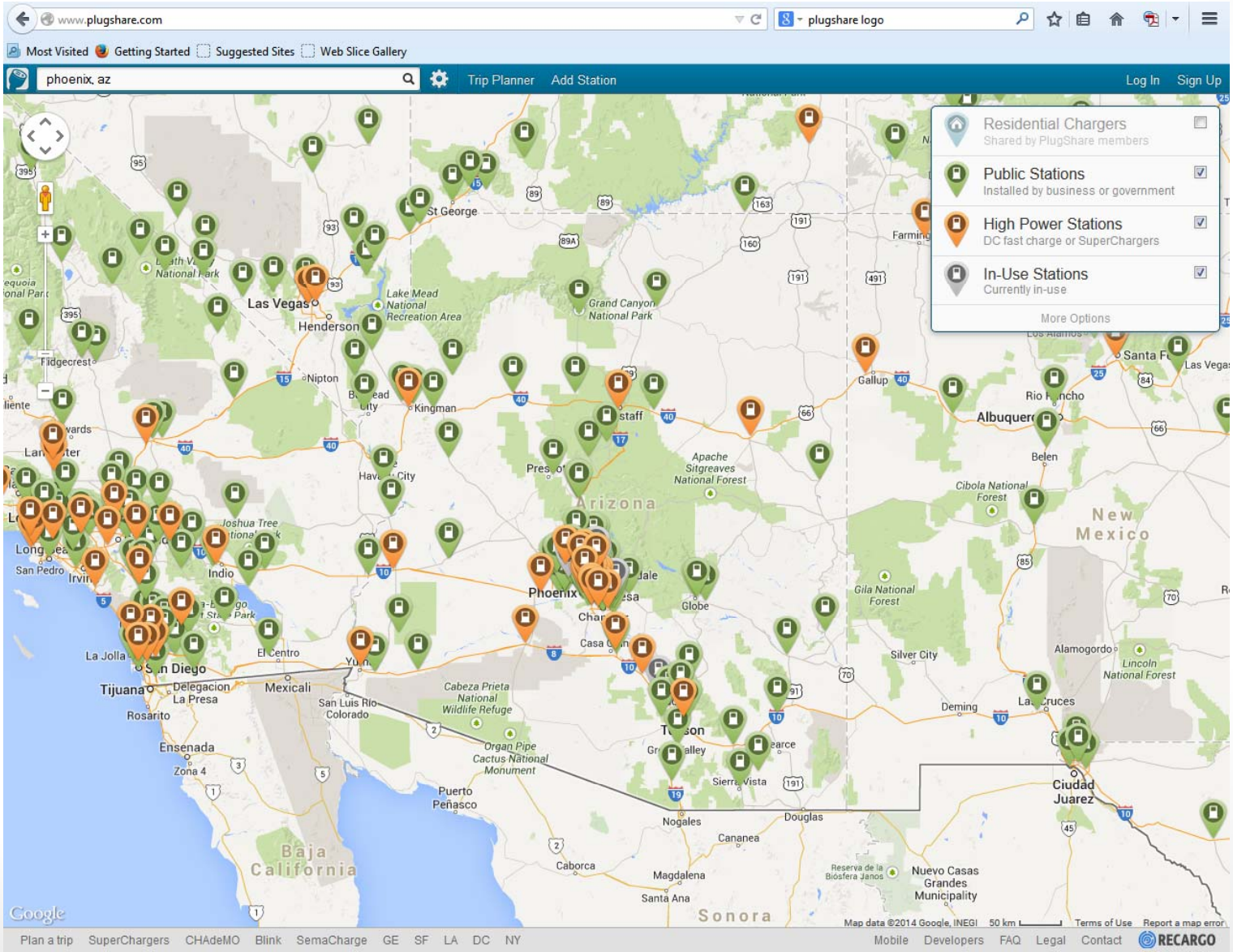
PlugShare


www.plugshare.com
plugshare logo
Most Visited
Getting Started
Suggested Sites
Web Slice Gallery
phoenix, az
Trip Planner
Add Station
Log In
Sign Up
Residential Chargers
Shared by PlugShare members
Public Stations
Installed by business or government
High Power Stations
DC fast charge or SuperChargers
In-Use Stations
Currently in-use
More Options
Las Vegas
Henderson
Phoenix
Arizona
New Mexico
Albuquerque
Tucson
Tijuana
San Diego
Ciudad Juarez
Baja California
Sonora
Plan a trip
SuperChargers
CHAdeMO
Blink
SemaCharge
GE
SF
LA
DC
NY
Mobile
Developers
FAQ
Legal
Contact
RECARGO

EV Guide Highlights

Kingman & Route 66

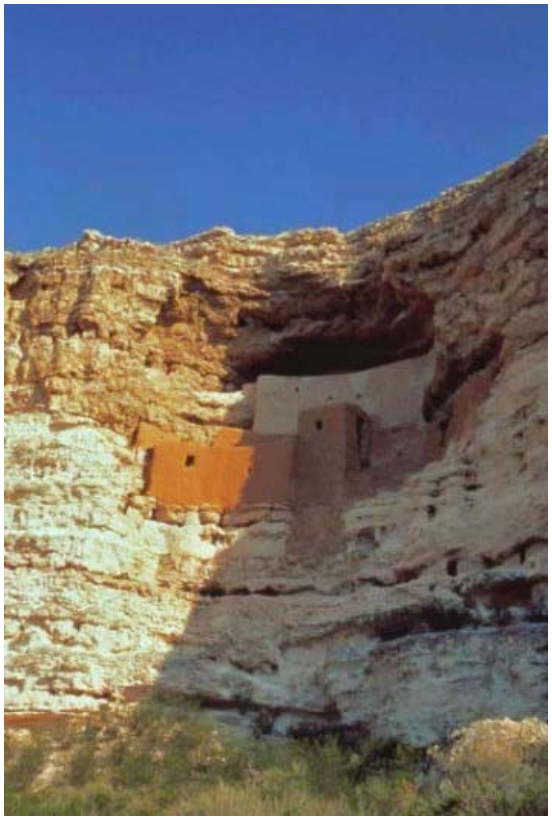
Williams & Grand Canyon Railway

EV Guide Highlights

Slide Rock

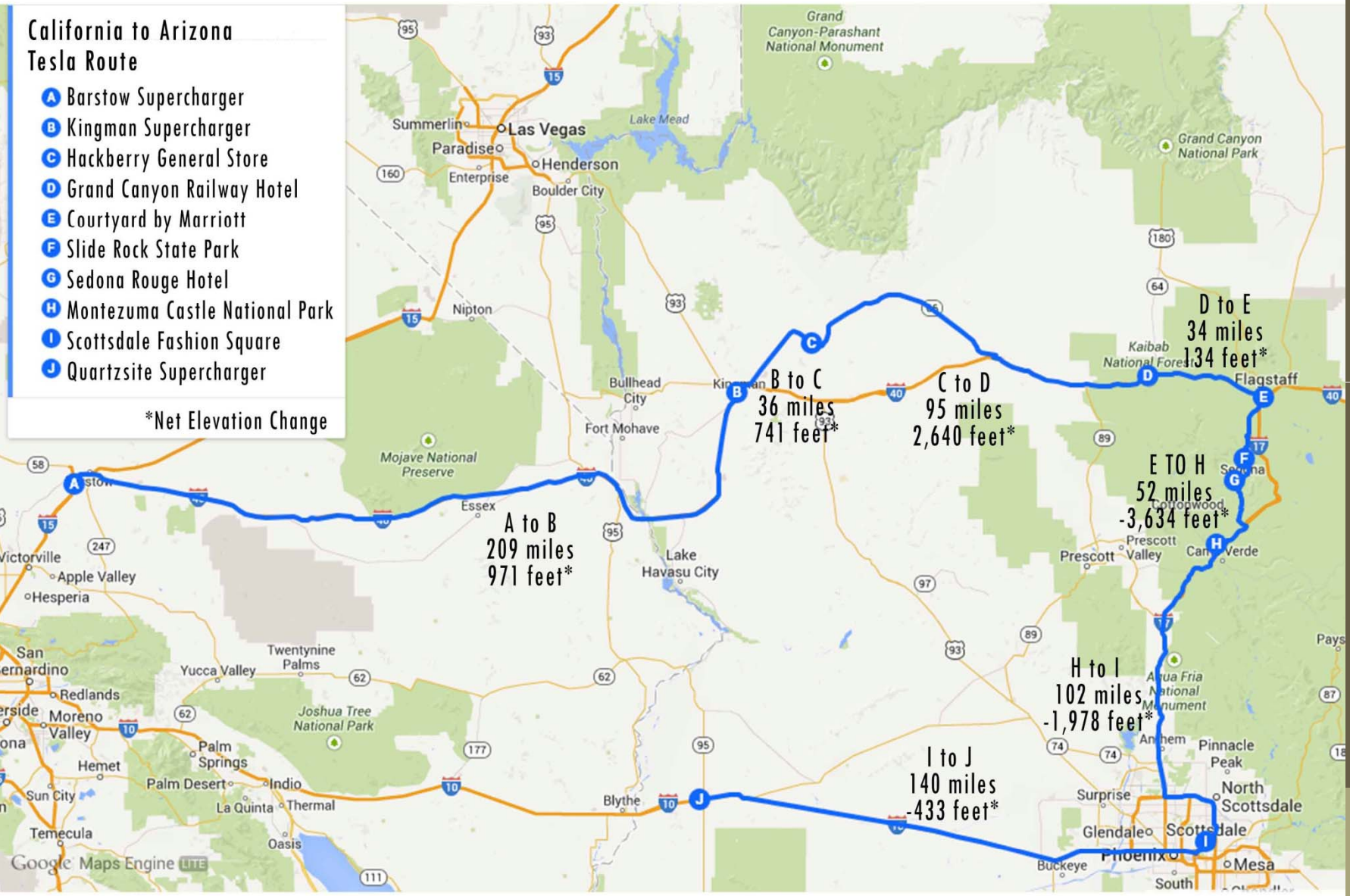
Sedona &
Tlaquepaque

EV Guide Highlights



Montezuma Castle National Monument

Phoenix & Scottsdale


California to Arizona
Tesla Route
A Barstow Supercharger
B Kingman Supercharger
C Hackberry General Store
D Grand Canyon Railway Hotel
E Courtyard by Marriott
F Slide Rock State Park
G Sedona Rouge Hotel
H Montezuma Castle National Park
I Scottsdale Fashion Square
J Quartzsite Supercharger
*Net Elevation Change
A to B
209 miles
971 feet*
B to C
36 miles
741 feet*
C to D
95 miles
2,640 feet*
D to E
34 miles
134 feet*
E TO H
52 miles
-3,634 feet*
H to I
102 miles
-1,978 feet*
I to J
140 miles
-433 feet*
Grand Canyon-Parashant National Monument
Grand Canyon National Park
Lake Mead
Las Vegas
Summerlin
Paradise
Henderson
Enterprise
Boulder City
Nipton
Bullhead City
Fort Mohave
Mojave National Preserve
Essex
Lake Havasu City
Kaibab National Forest
Flagstaff
Prescott
Prescott Valley
Cottonwood
Sedona
Camp Verde
Victorville
Apple Valley
Hesperia
San Bernardino
Redlands
Moreno Valley
Yucca Valley
Twentynine Palms
Joshua Tree National Park
Palm Springs
Palm Desert
Indio
La Quinta
Thermal
Hemet
Sun City
Temecula
Oasis
Blythe
Surprise
Glendale
Phoenix
Buckeye
Anthem
Pinnacle Peak
North Scottsdale
Scottsdale
Mesa
South
Google Maps Engine LITE

GET CHARGED UP *Pack your bags—and your plugs—to take an all-electric road trip this summer. From air museums to ATV tours to train rides to the Grand Canyon—Arizona has it all! Plan your EV road trip today.* **Learn More »**

TOP ATTRACTIONS

Explore Arizona's Regions & Cities

Discover all the Grand Canyon State's unique destinations. Click the map to get started or see all the places to visit.

Already know where you are headed? Start typing a city name below to get details on your destination - or choose one of our most popular cities.

enter city GO

There's so much to see and do in the Grand Canyon State! Visit our must-see top attractions curated by Arizona experts to start planning your perfect trip today.

REQUEST A VISITOR'S GUIDE

LEAD THE CHARGE

Get Arizona's electric-vehicle-friendly itineraries.

LET'S GO!

The GRAND CANYON

SIGN UP FOR

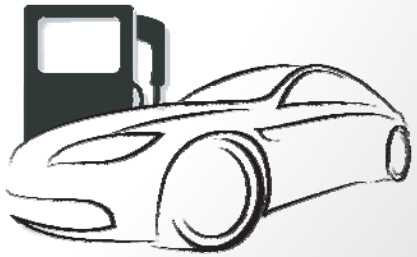
Arizona Office of Tourism Unveils State's First Electric Vehicle Visitor's Guide

May 20, 2014

Where is this EV?

Photo Courtesy of Greg Lutowsky

Electric Vehicle Tourism in Practice



Lodging

"The Electric Vehicle Charger is why we chose this hotel." – December 12, 2013 (TripAdvisor)

1% of hotels in Arizona offer charging

- EVs typically charge overnight
- Competitive edge
- Build brand awareness
- Earn certification points

Source: Smith Travel Research, PlugShare

Destination Marketing Organizations

- Educate constituents and stakeholders
- Create partnerships
- Connect urban and rural communities
  - Tie tourism entities together for a seamless EV product
- Promote sustainable business and tourism
- Increase out-of-state visitation
  - Increase revenue and tourism taxes

Destination EV Efforts

- Drive Electric Orlando
  - Public/private partnership
  - Nissan LEAF, free parking at hotels and other perks
  - Assumes visitor knows where they want to go
- TravelOregon.com
  - Itineraries designed with EV driver in mind
  - Does not include charging or other details recommended by EV drivers
- Palm Springs
  - EV map

GET CHARGED UP

SAVINGS COMPARISON

RENT A CAR

VIEW BROCHURE

Travel & Tourism Industry

Travel and tourism is the largest services export industry in the United States and, consequently, a crucial engine for economic growth. One out of every nine jobs in the U.S. depends on travel and tourism.

Unstable, high priced energy costs are the largest threat to the health of the industry. By supporting the expanded use of electric vehicles through Drive Electric Orlando, Central Florida's tourism industry is standing together and taking a unique powerful step toward ensuring that travel remains affordable and within the budgets of families and businesses of all sizes and backgrounds.

Travel & Tourism Industry

Savings Comparison

Why Electric Matters

Car-Hotel Packages

traveloregon.com/trip-ideas/listing/?type[]=itineraries&type[]=geotourism-sustainable-travel&location_text=&latLng=&location[]=all-cities&location[]=All&from=&to=

bookmans stores

SUSTAINABLE TRAVEL SEARCH RESULTS

1 - 10 of 10 Sustainable Travel in Oregon

– WHAT –

Itineraries

Sustainable Travel

– WHERE –

All Regions

All Cities

Search

- or - enter a location

	– CATEGORY –	– TRIP IDEA TYPE –

North Willamette Valley EV Itinerary

written by Eileen Garvin on April 11th, 2013

Just a short drive from downtown Portland, the Willamette Valley is the most well known of Oregon's 17 wine growing...

Eat & Drink, Recreation, Sustainable Travel, Sustainable Travel, Wineries & Wine

Itinerary

Southern Oregon Arts and Wine EV Itinerary

written by Eileen Garvin on April 11th, 2013

Southern Oregon is beautiful driving country. Home to the Wild and Scenic Rogue River, the beautiful North Umpqua River...

Art Galleries & Studios, Attractions, Eat & Drink, Museums & Interpretive Centers, Performing Arts, Recreation, Sustainable Travel, Wineries & Wine

Itinerary

Your Sustainable City
- Office of Sustainability
- Mayor's Healthy Planet Healthy You
- Sustainability Commission
- Green for Life Program
- Key Program Areas
- Green Economy
- Water
- Waste Disposal & Recycling Update
- Urban Sustainability & Mobility
- Waste
- Energy
- Events
- GreenGuide 4 Community Resources
- Community Gardens
- NON MOTORIZED TRANSPORTATION
- Electric Vehicles and Charging

Electric Vehicles and Charging

E-mail Print

Electric Vehicle Charging Station Network

The City of Palm Springs has been pursuing installation of electric vehicle charging stations to make sure the City has a network ready for visitors and residents. The City has placed 30 stations spread around the City with installations completed in 2013. In addition, additional funding has been secured and the City is working with local partners, to place at least 10 more stations with installations completed in 2013. Additionally, charging units are being installed at private residences and around the community at a variety of businesses for clients and customers.

City of Palm Springs is preparing itself to be fully charge ready. See the map below of charging units now ready and those coming soon.

CLICK for a map of our Electric Vehicle Charging Station Network

Our EV charging stations are posted on these websites: carstations.com evchargernews.com plugshare.com

Inauguration of the first public charging stations at the City Hall- April 2, 2013 1 pm Ribbon Cutting

Where is this EV?

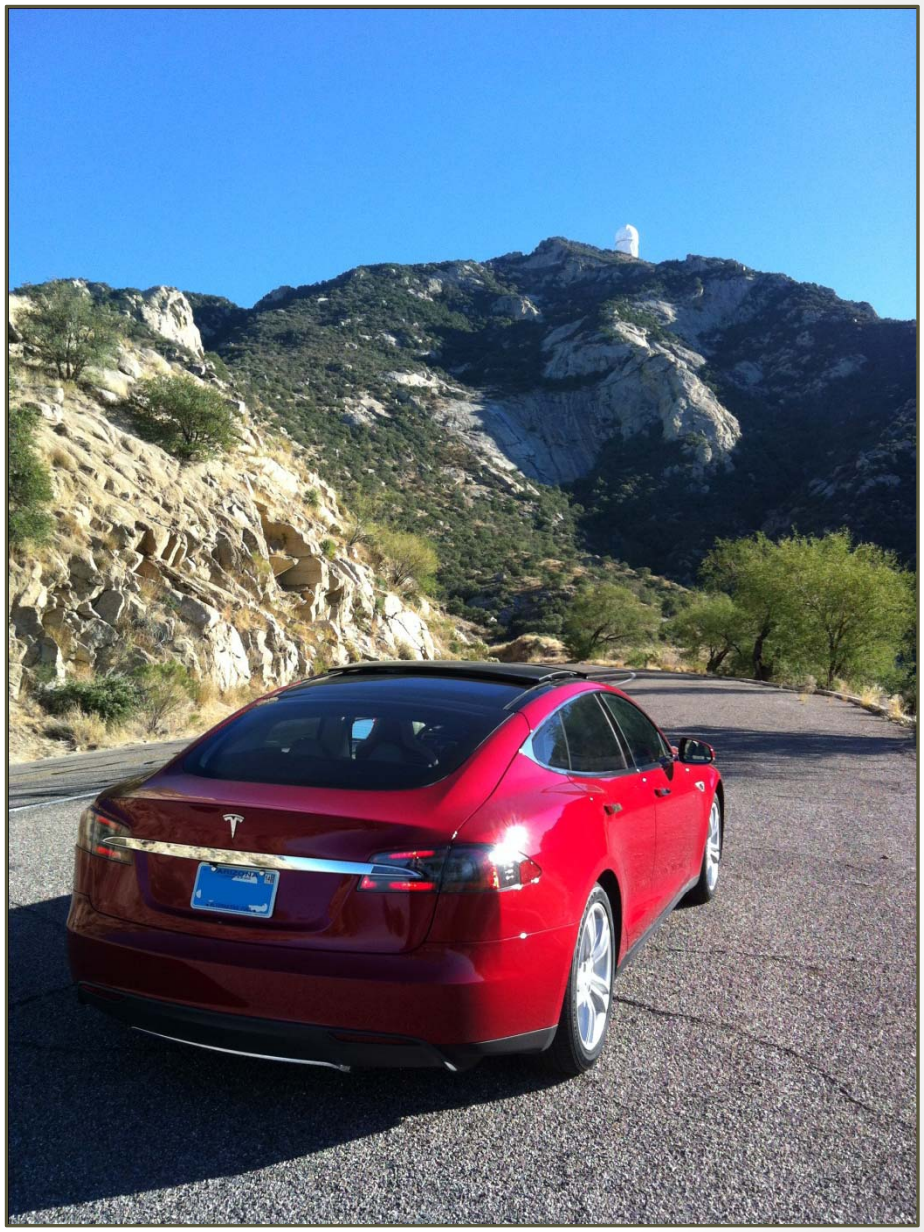
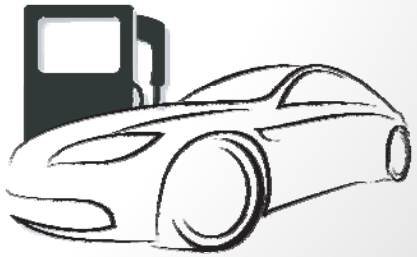
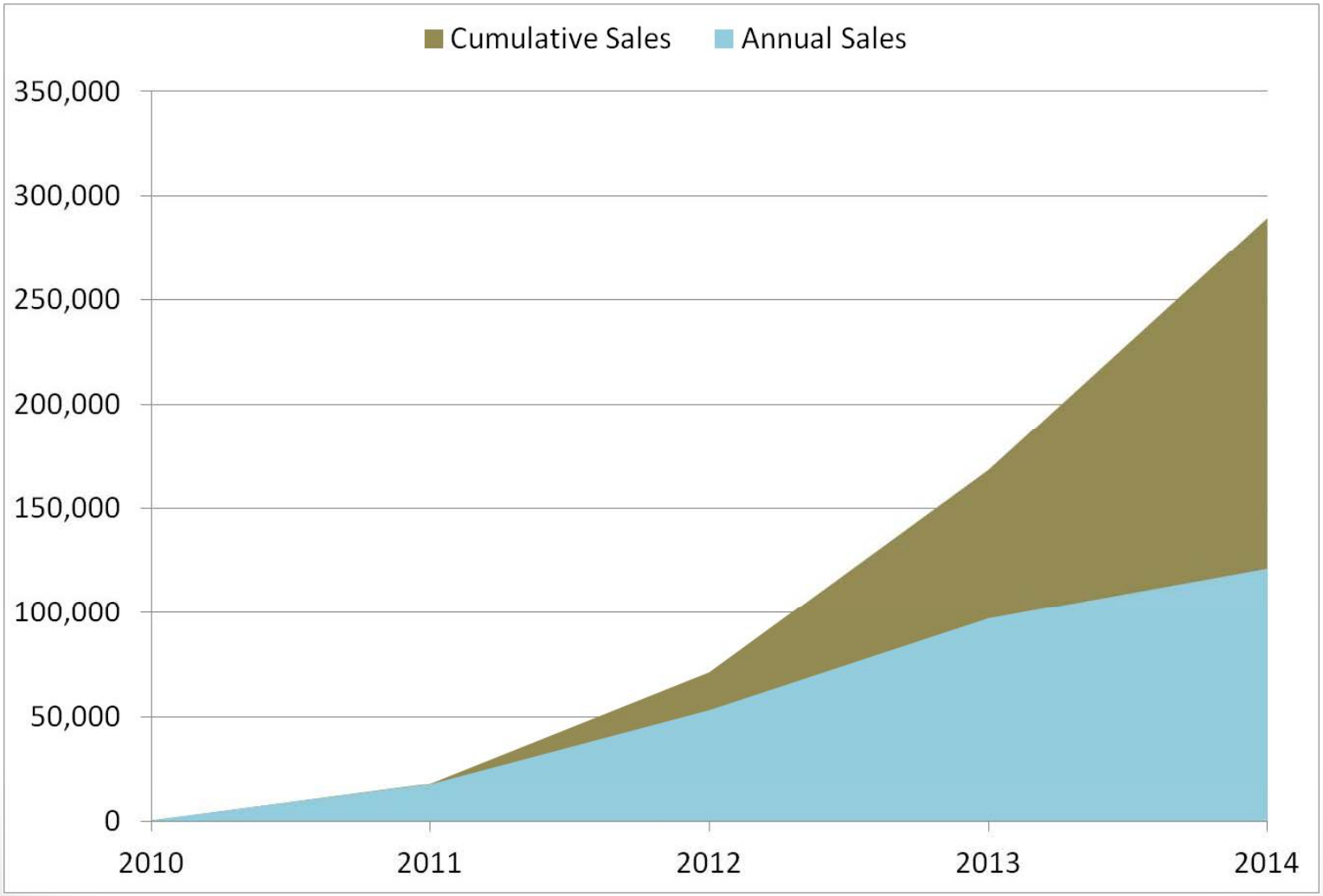


Photo Courtesy of Bob Merritt

EV Tourism Potential for Arizona



U.S. Plug-in Vehicle Registrations

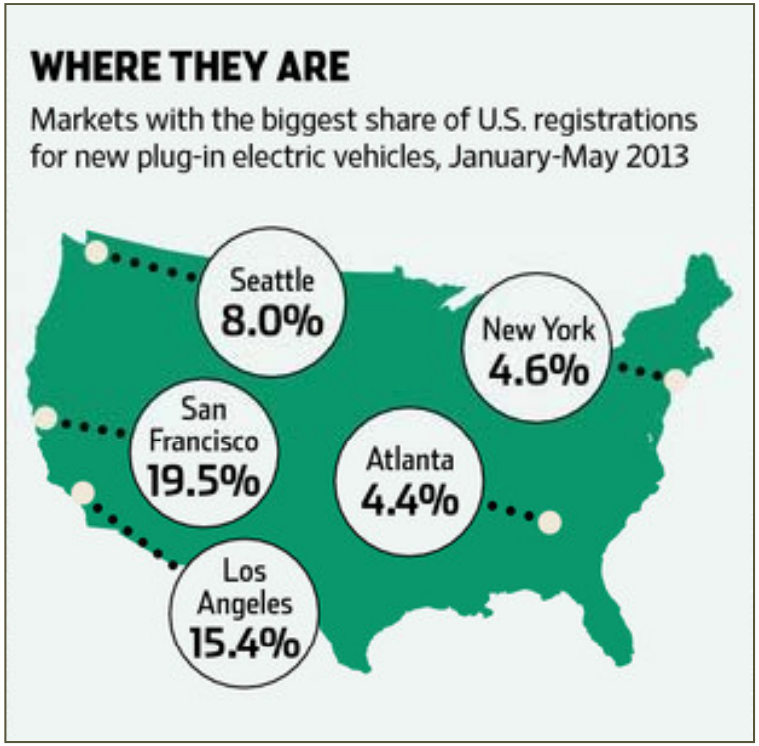


42% of U.S. plug-ins are in CA & AZ

Source: U.S. Department of Energy (Energy.gov)

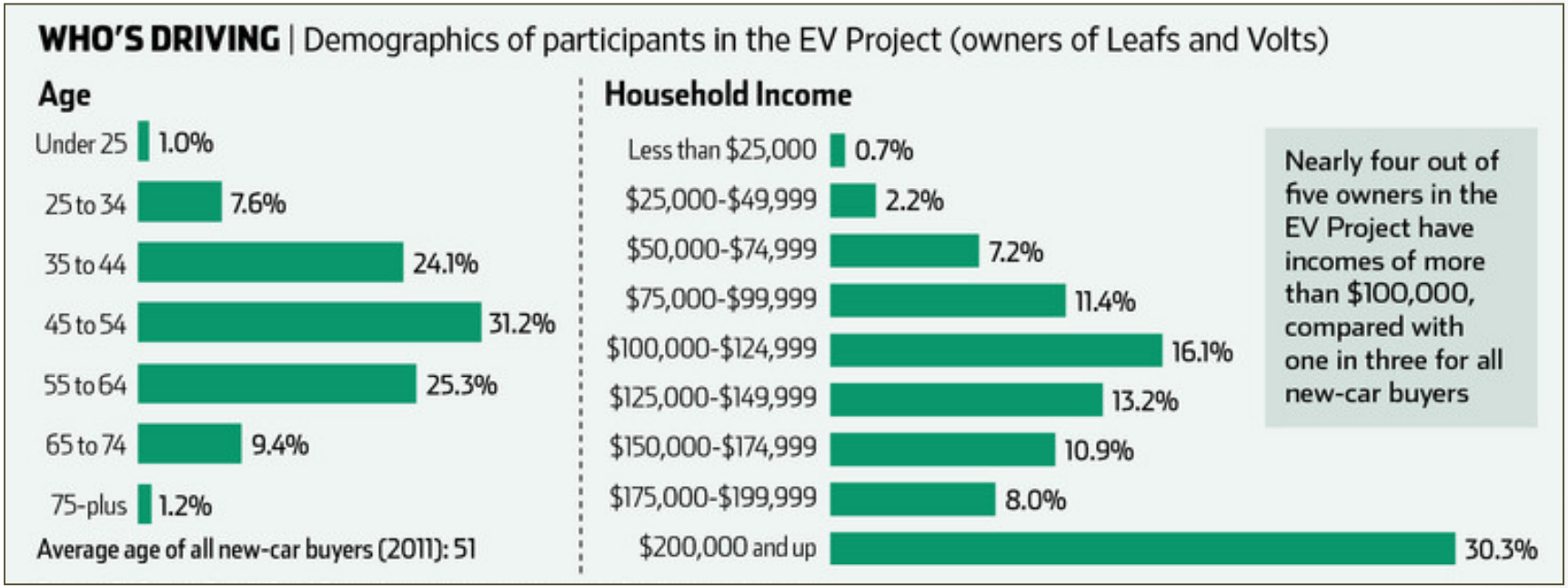
EV Demographics

- Age: 55% are 36-55 years old
- HHI: 21% have a HHI of $175,000 or more



Source: Experian Automotive in Schaumburg. Ill., EV Project; Polk/HIS and Edmunds.com, gas2.org (infographic)

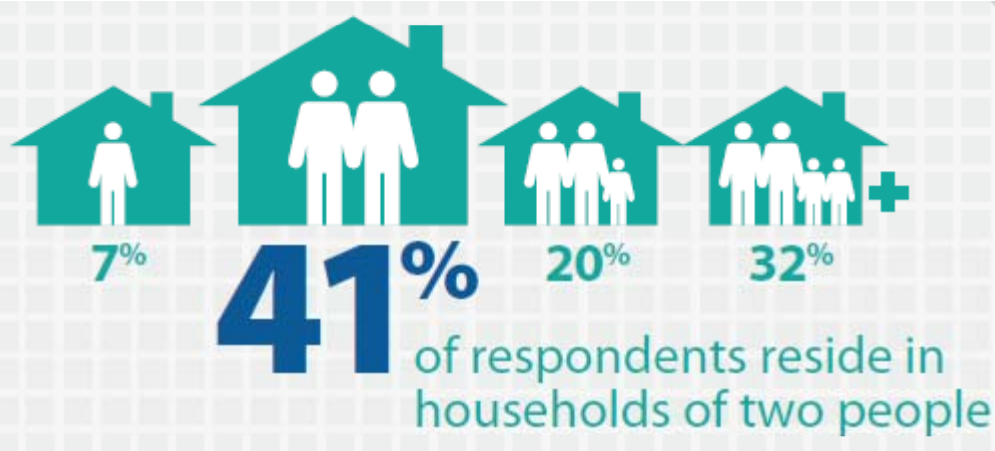
EV Demographics



Source: EV Project; Polk/HIS and Edmunds.com (income and age data from all new-car buyers); gas2.org (infographic)

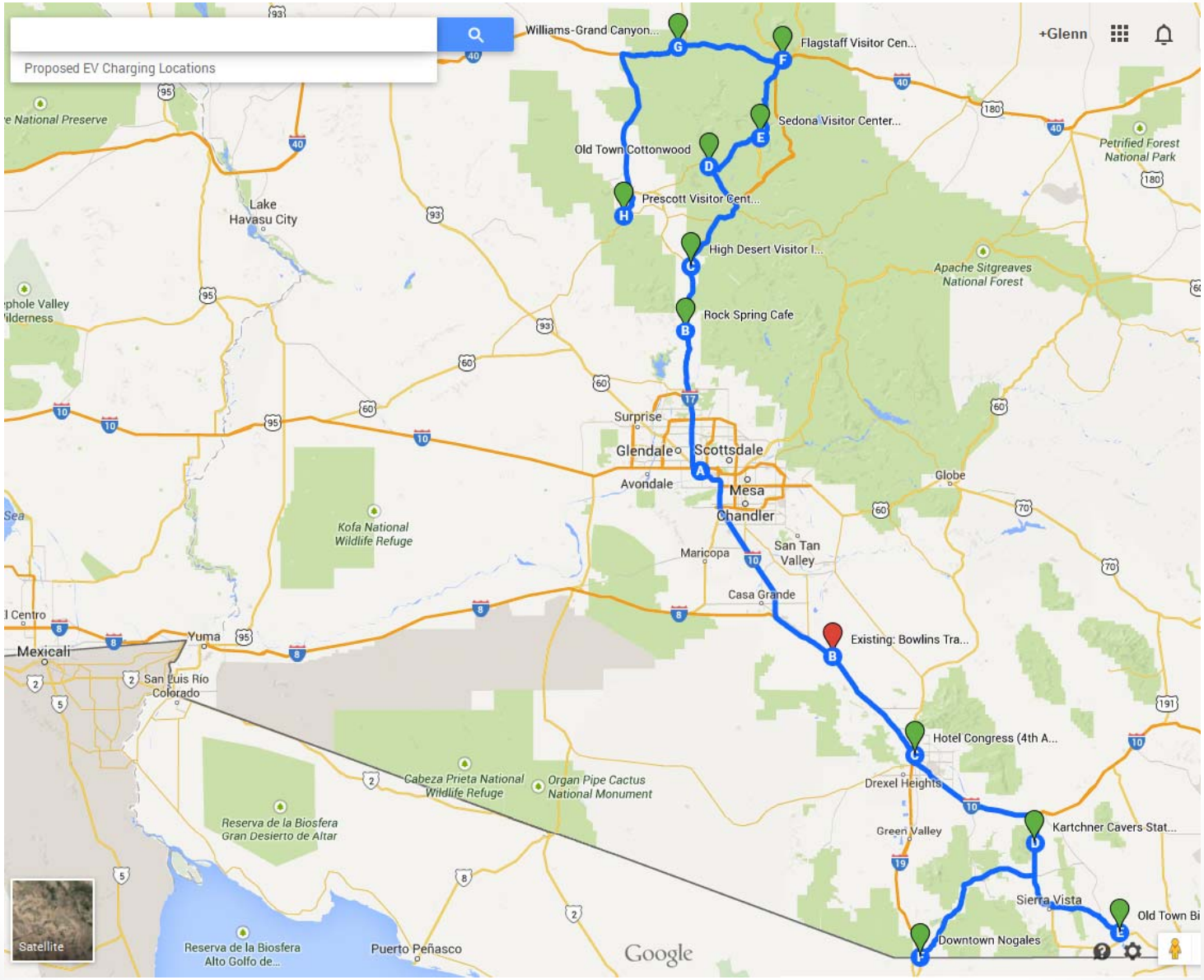
EV Demographics (California)

- 71% of primary PEV drivers are male
- 52% have post-graduate degrees
- 96% own their home
- 54% have a HHI of $150,000 or more



Source: California Center for Sustainable Energy

Arizona EV Infrastructure Needs



Where is this EV?

Photo Courtesy of Lyle Johnson

Furthering the Effort

- Reach out to tourism business owners to educate them about EV Tourism
- Create more itineraries
- Organize Familiarization Tour for writers to test out and publicize the routes
- Create custom packages designed for EV travelers and/or partners with rental car agencies to include a rental EV in the deal

Furthering the Effort (cont.)

- Create a policy for EV charging and educate staff about EVs
- Add EV information to your website
- Add charging station information to PlugShare and Alternative Fueling Station Locator
- Encourage websites such as TripAdvisor to add charging as an amenity search option
- Reach out to stakeholder groups such as Clean Cities for assistance

EV Tourism Toolkit

- What is Electric Vehicle Tourism
- Benefits
- EV Basics
- PlugShare.com
- Creating a EV Visitor Guide
- Resources
- Available at tourism.az.gov

Thank You

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