

The following presentation is from the **EV Roadmap 6 conference in Portland, Oregon July 30 – 31, 2013**

THE Project

EV Roadmap 6

July 31, 2013



EV & Charging Infrastructure utilization study

- **Planned deployment to develop a rich charge infrastructure “laboratories”**
- **Collect and analyze data characterizing both the vehicle and infrastructure utilization**
- **Evaluate effectiveness of deployed infrastructure**
- **Evaluate business models for non-residential charging infrastructure**
- **Document and disseminate the results of the Project**

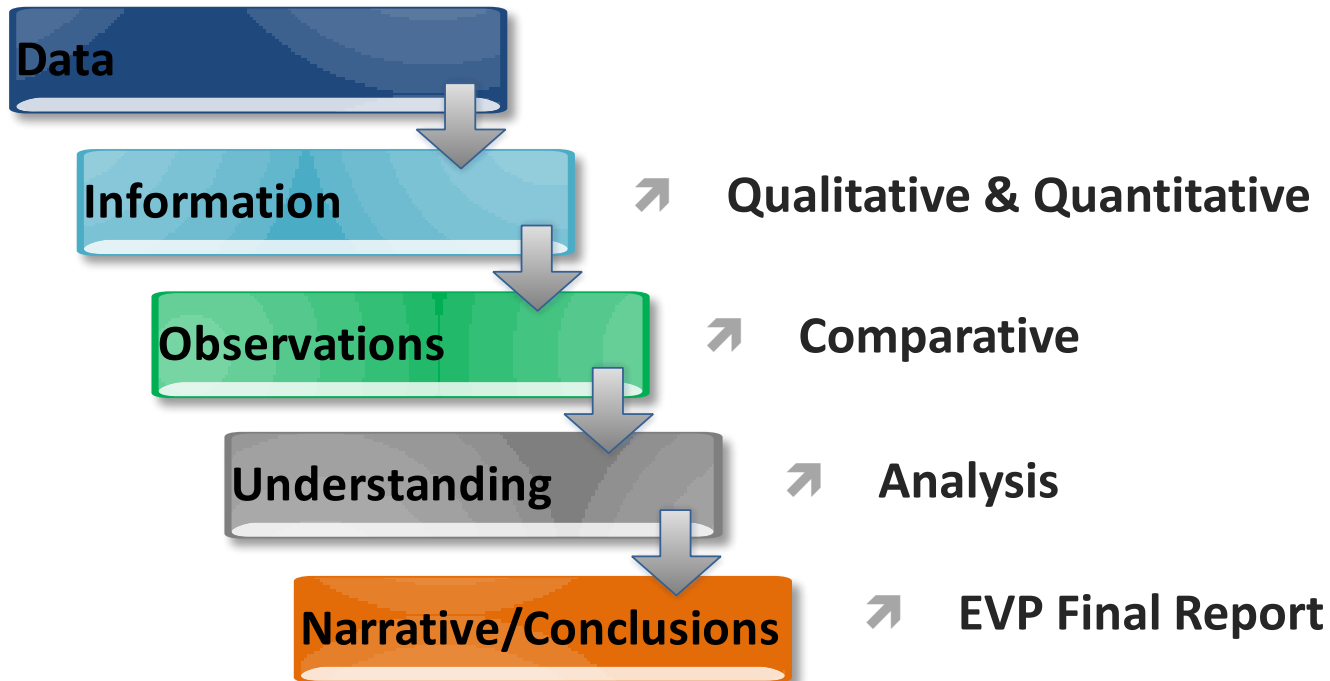
Current Status

- Data collected daily from over 20,000 separate entities
 - Over 8,200 vehicles
 - Over 12,000 chargers
- 3,000,000 charging events from vehicles that have accumulated over 94,000,000 miles
- In 10 states and District of Columbia
- Executed nearly 10,000 participation agreements

Lessons Learned

- **Execution of the EV Project**
 - **Planning – permitting, signage, contracts, ADA**
 - **Deployment – permitting process, cost, economic environment, Davis Bacon Act,**
 - **Data – protection, reliable collection, reliable transmission, analysis & interpretation**
 - **Project Management – contracts, reporting**
- **Information gained from the data collected**

Lessons Learned





Charger Utilization

Utilization of Non-residential Infrastructure

- 10,000 DCFC charge events/month (111/DCFC)
- 30,000 AC L2 charge events/month (7/L2)
- Oregon
 - 1,500 DCFC/month - about 90 per DCFC
 - 2,500 L2/month – about 5 per L2 per month
- Highest is SF at 4,000/month – 200/DCFC
- Fees
 - \$5/\$8 per session and \$1/hour

Jan 2011



DC Fast Chargers



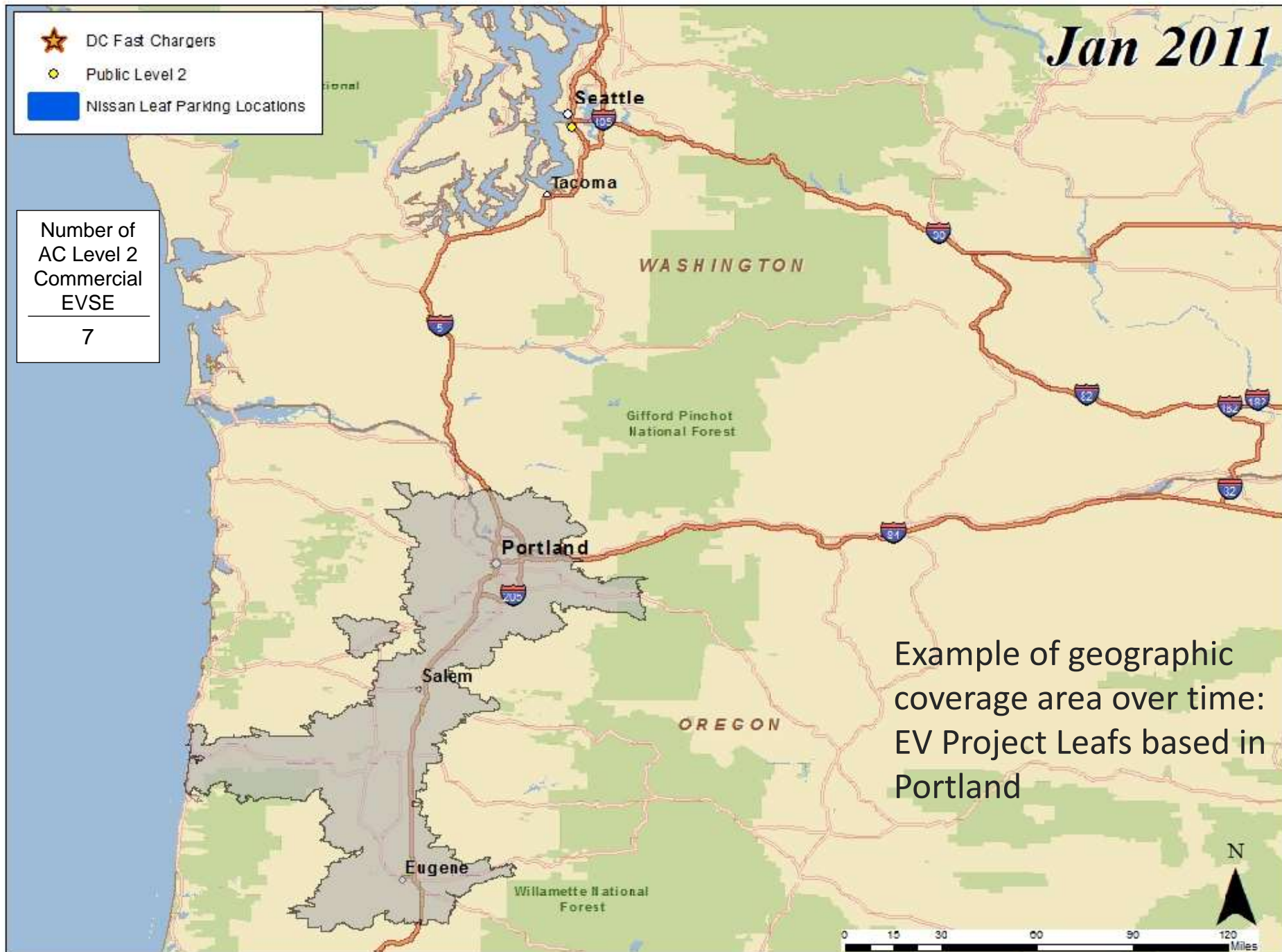
Public Level 2



Nissan Leaf Parking Locations

Number of
AC Level 2
Commercial
EVSE

7



Example of geographic
coverage area over time:
EV Project Leafs based in
Portland

Apr 2011



DC Fast Chargers



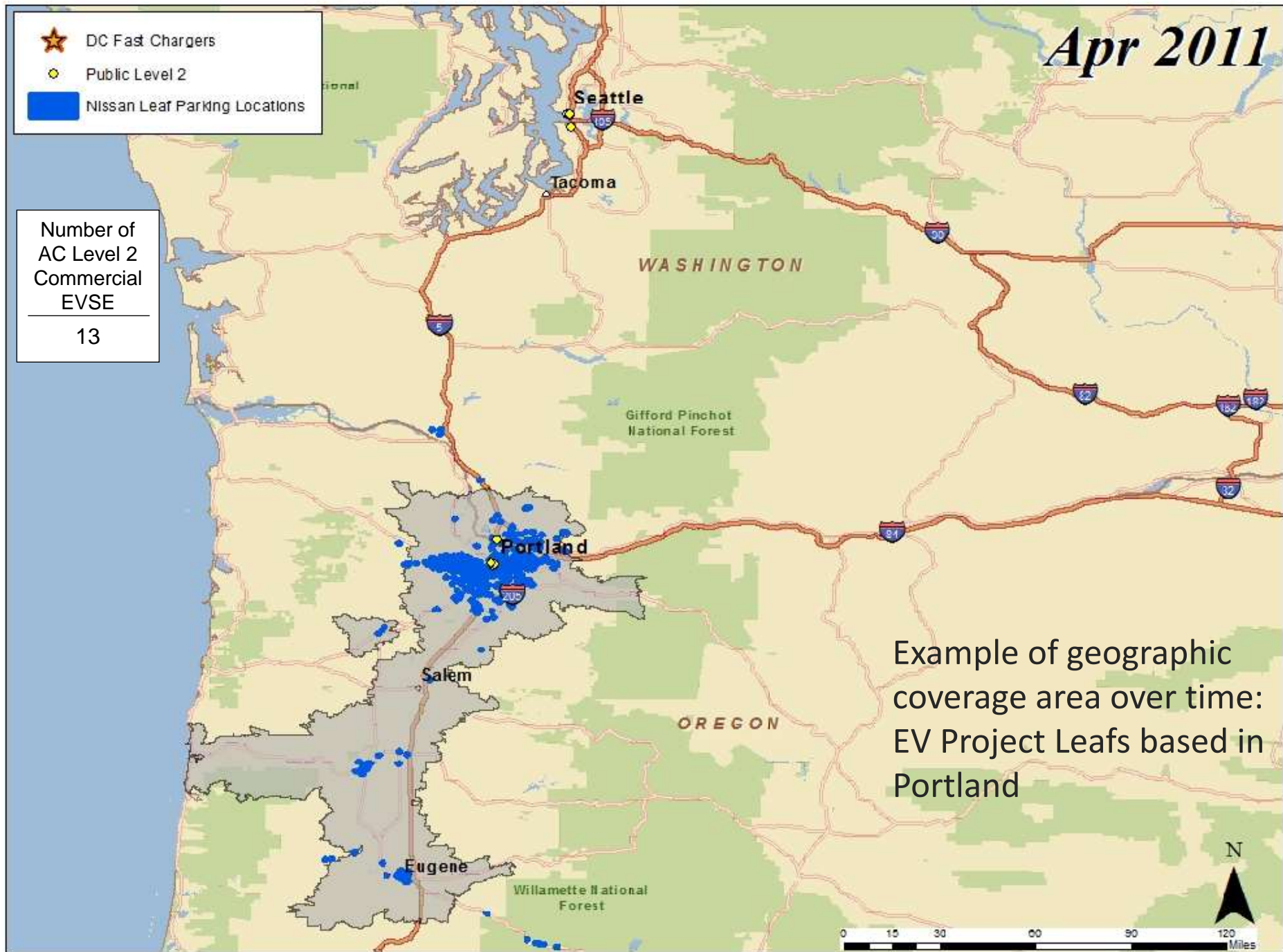
Public Level 2



Nissan Leaf Parking Locations

Number of
AC Level 2
Commercial
EVSE

13



Example of geographic
coverage area over time:
EV Project Leafs based in
Portland

Jul 2011



DC Fast Chargers



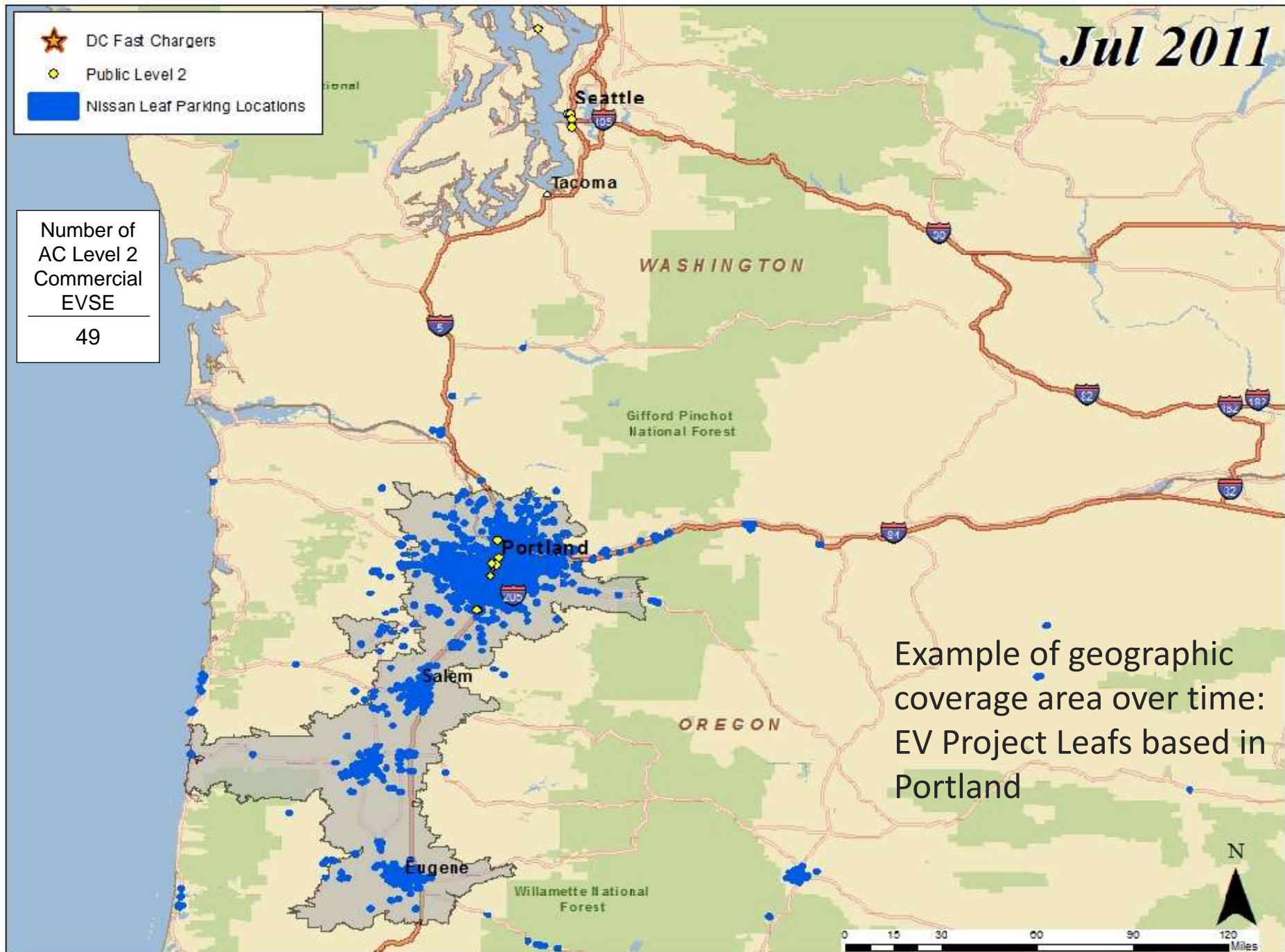
Public Level 2



Nissan Leaf Parking Locations

Number of
AC Level 2
Commercial
EVSE

49



Example of geographic
coverage area over time:
EV Project Leafs based in
Portland

Oct 2011



DC Fast Chargers



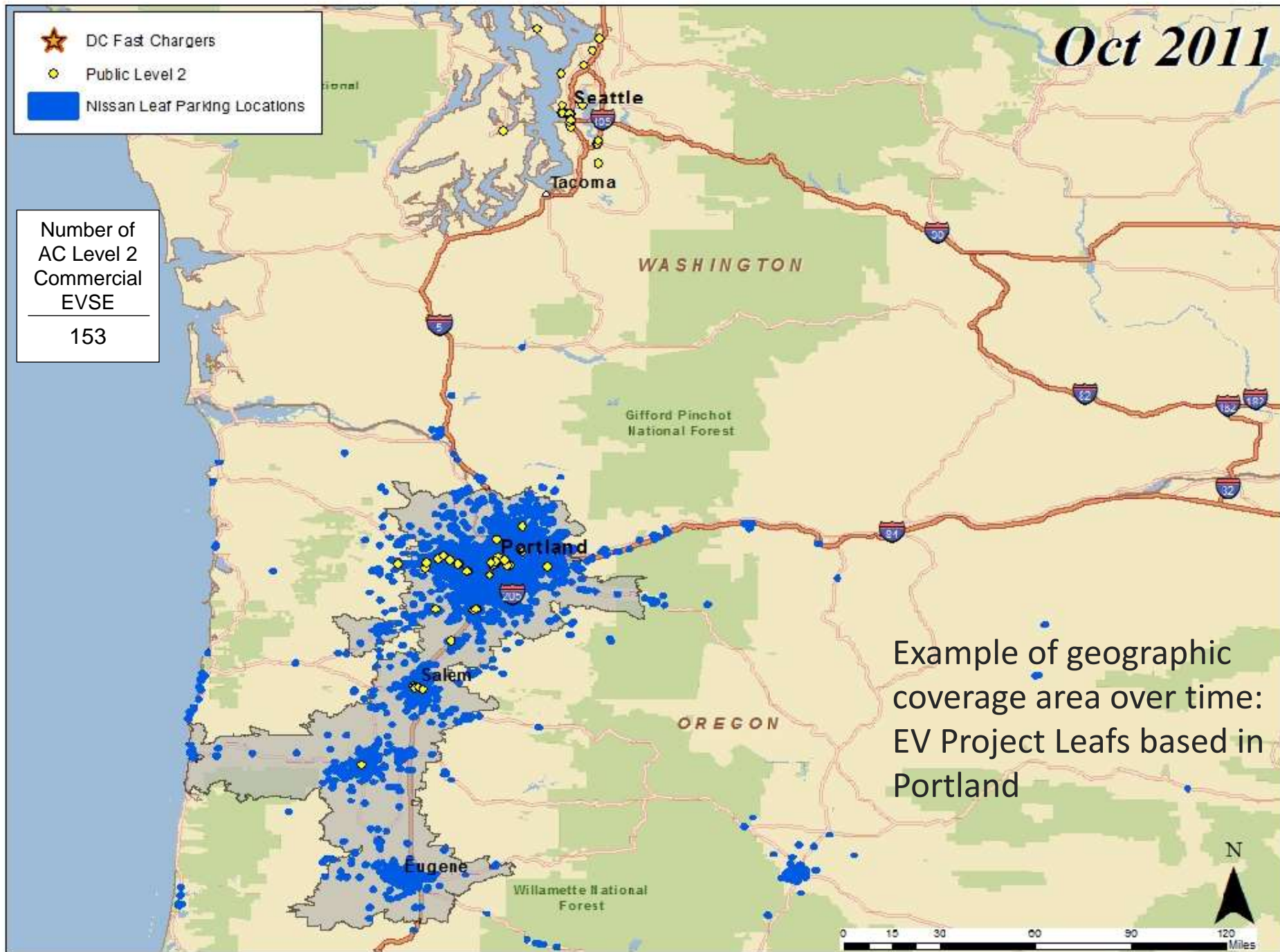
Public Level 2



Nissan Leaf Parking Locations

Number of
AC Level 2
Commercial
EVSE

153

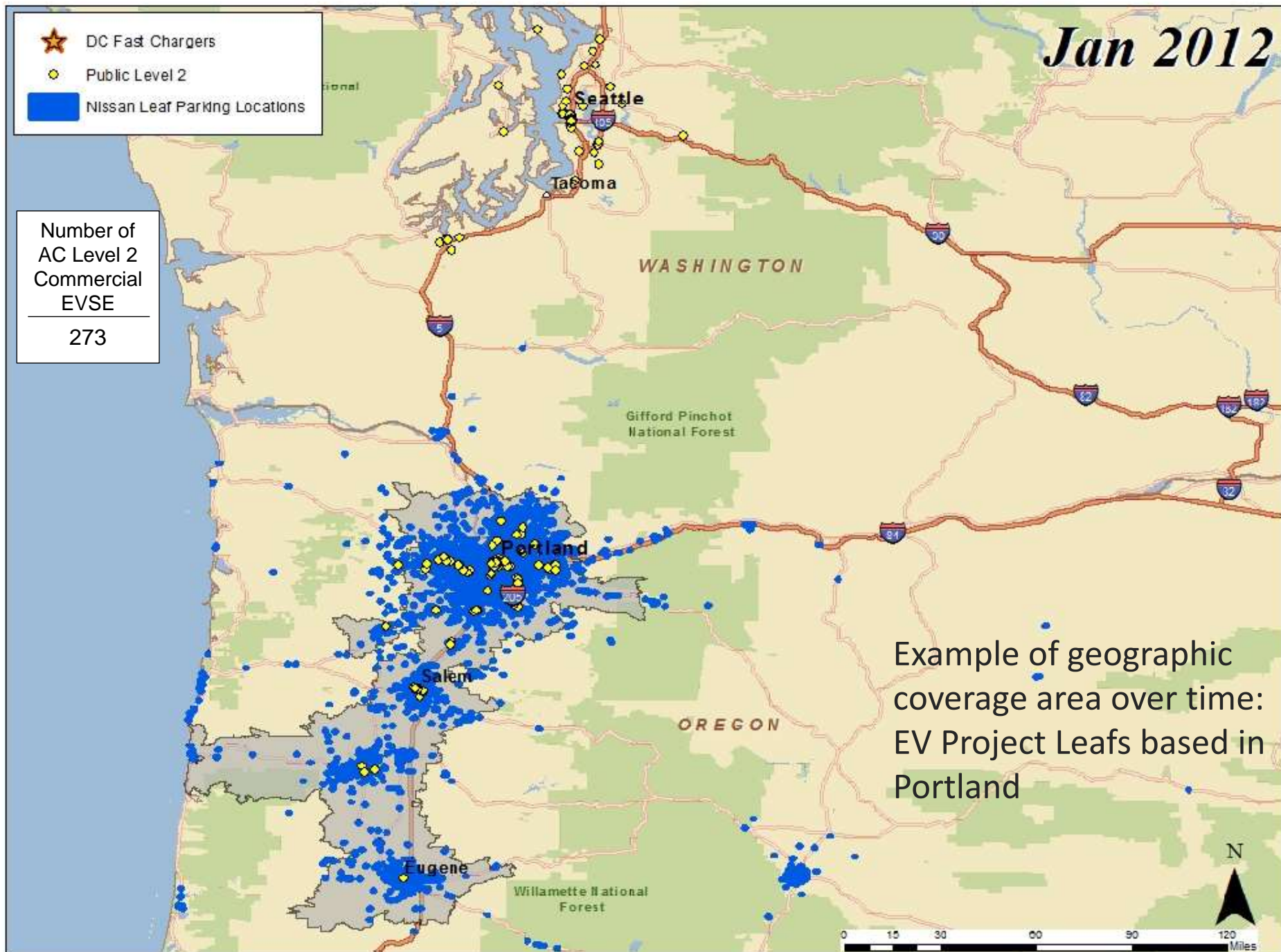


Jan 2012

- ★ DC Fast Chargers
- Public Level 2
- Nissan Leaf Parking Locations

Number of
AC Level 2
Commercial
EVSE

273



Example of geographic
coverage area over time:
EV Project Leafs based in
Portland

Jun 2012



DC Fast Chargers



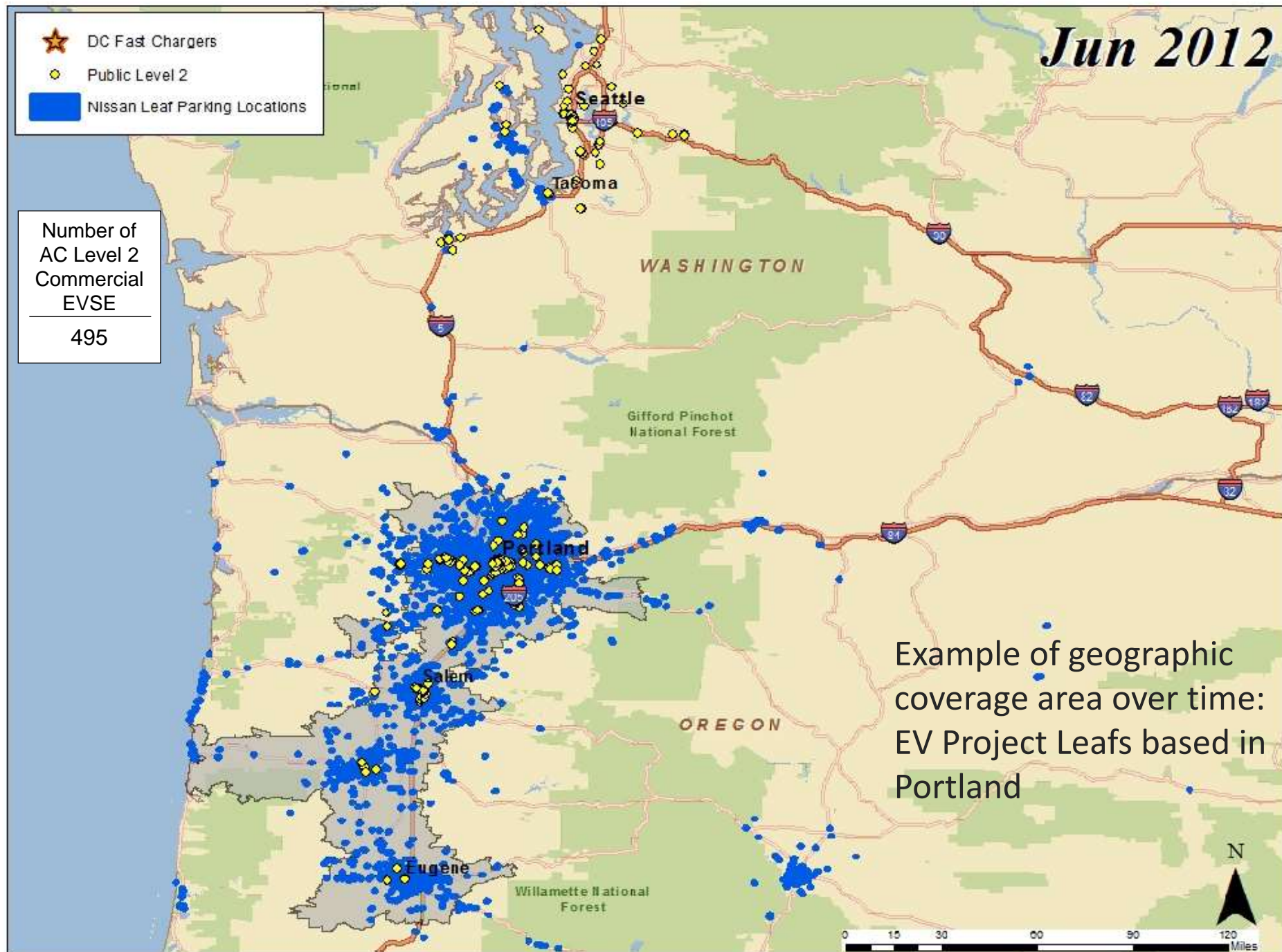
Public Level 2



Nissan Leaf Parking Locations

Number of
AC Level 2
Commercial
EVSE

495



Example of geographic
coverage area over time:
EV Project Leafs based in
Portland

Jul 2012



DC Fast Chargers



Public Level 2



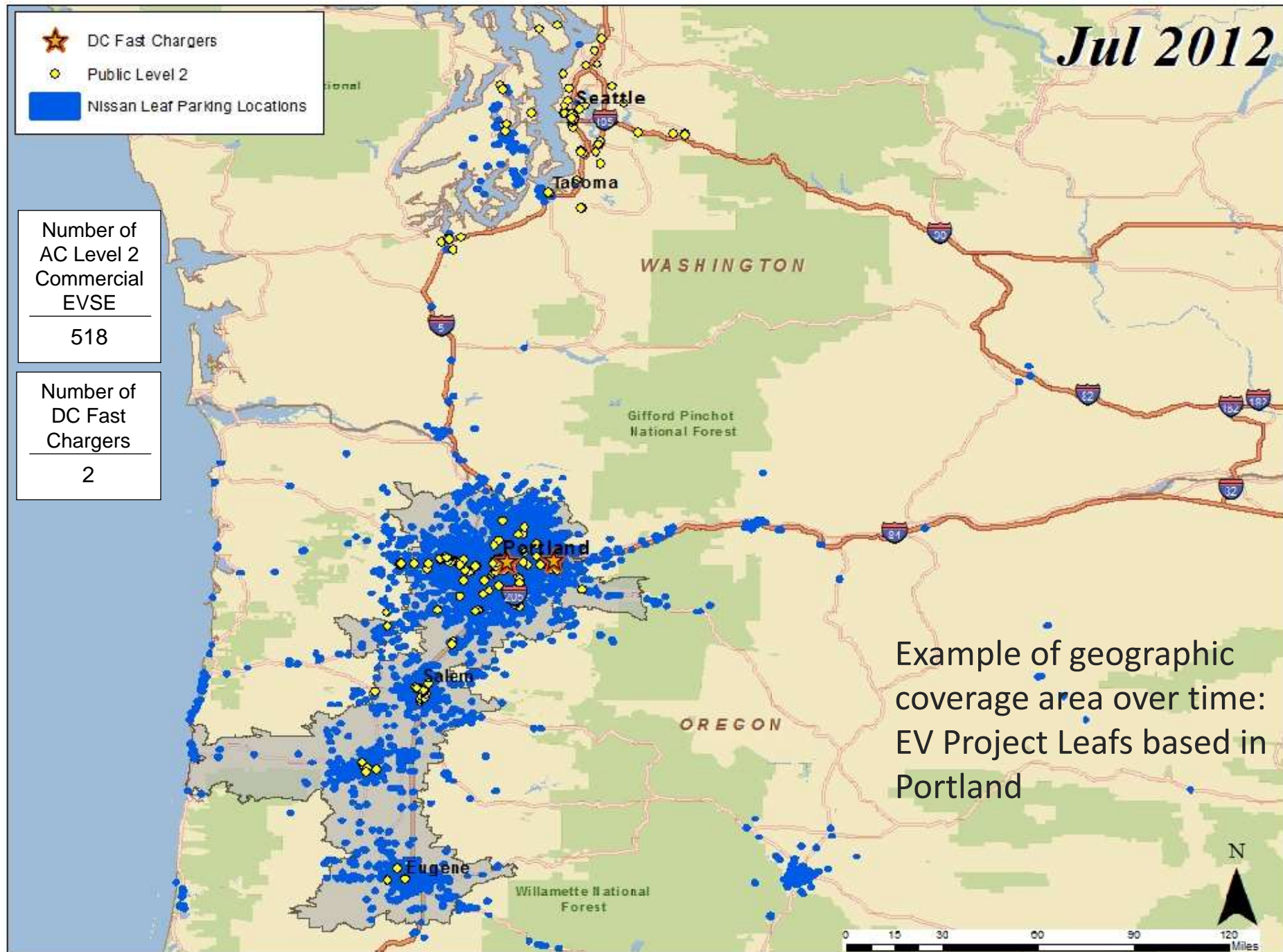
Nissan Leaf Parking Locations

Number of
AC Level 2
Commercial
EVSE

518

Number of
DC Fast
Chargers

2



Example of geographic
coverage area over time:
EV Project Leafs based in
Portland

Oct 2012



DC Fast Chargers



Public Level 2



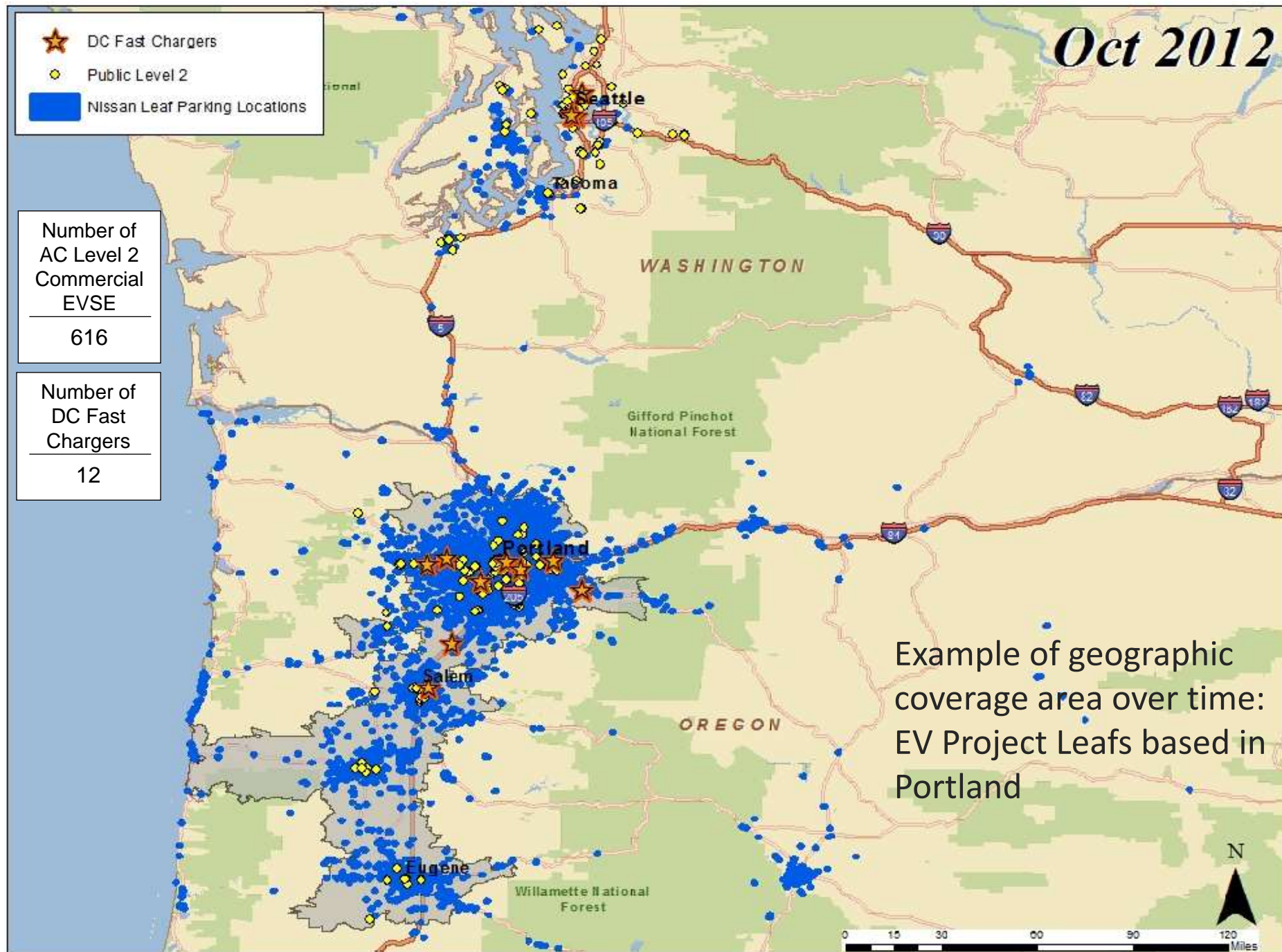
Nissan Leaf Parking Locations

Number of
AC Level 2
Commercial
EVSE

616

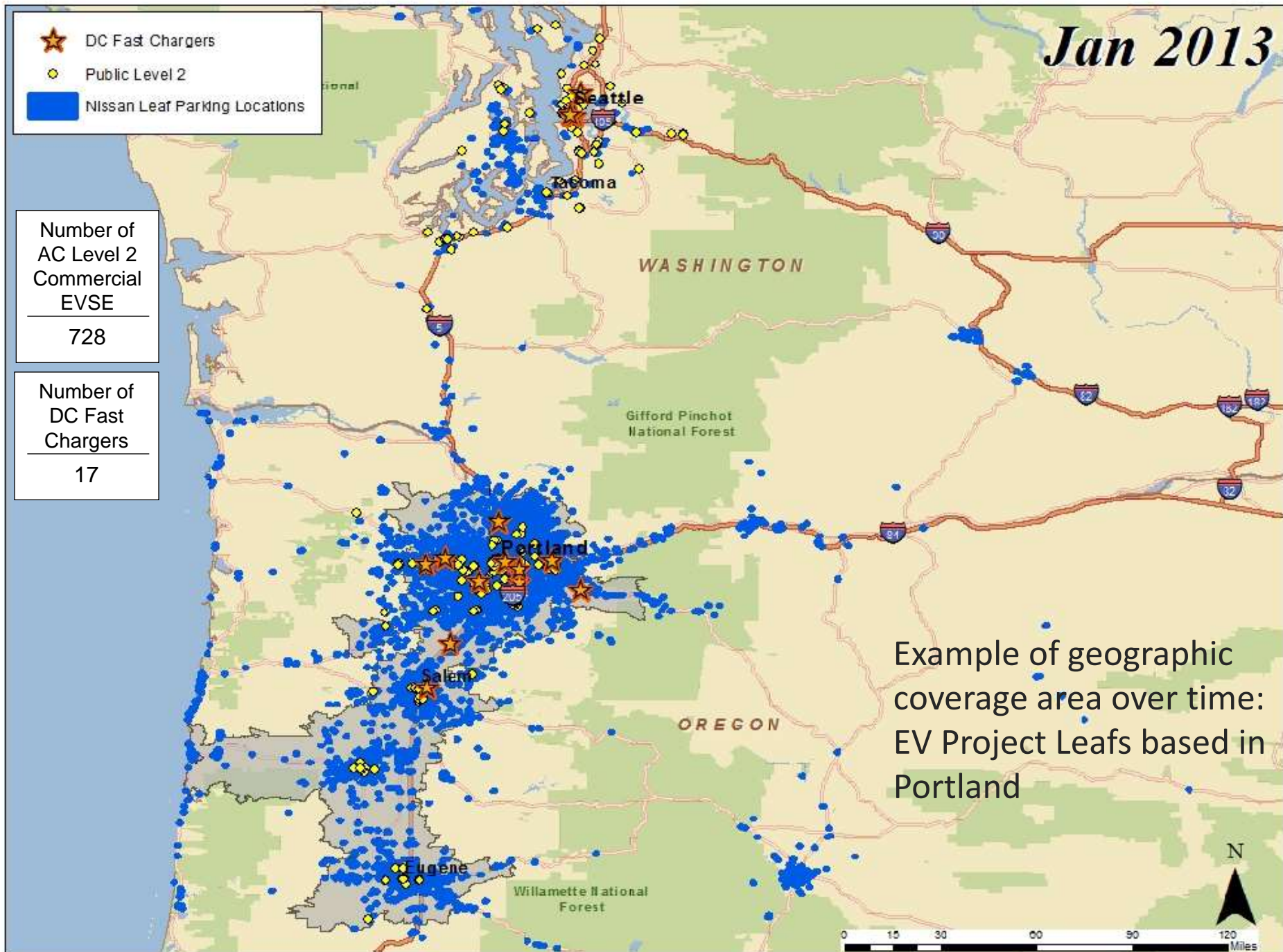
Number of
DC Fast
Chargers

12



Example of geographic
coverage area over time:
EV Project Leafs based in
Portland

of geographic
area over time:
ect Leafs based in
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Apr 2013

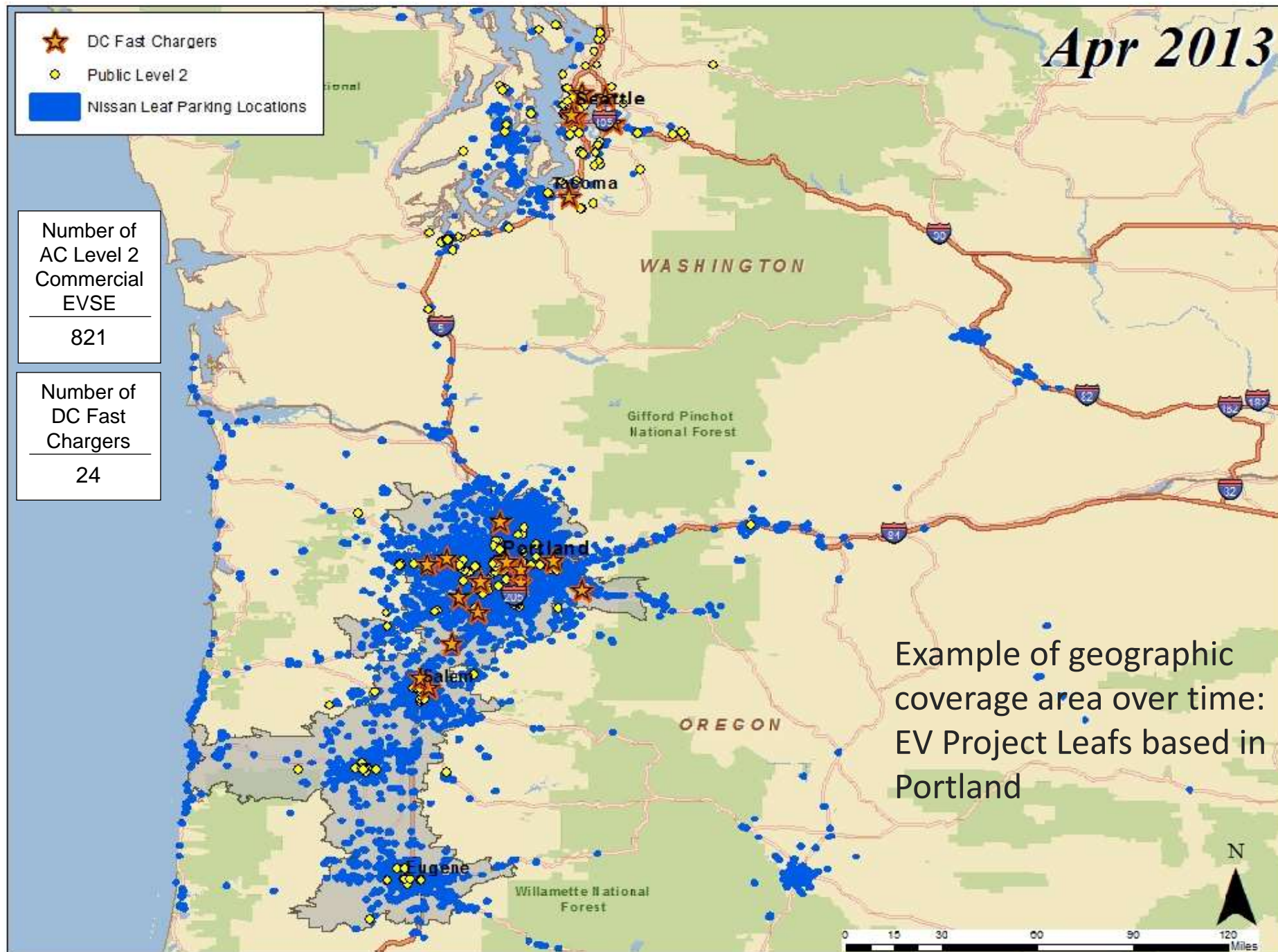
- ★ DC Fast Chargers
- Public Level 2
- Nissan Leaf Parking Locations

Number of
AC Level 2
Commercial
EVSE

821

Number of
DC Fast
Chargers

24



Example of geographic
coverage area over time:
EV Project Leafs based in
Portland

May 2013

- ★ DC Fast Chargers
- Public Level 2
- Non-EV Project
- Nissan Leaf Parking Locations

Number of
EV Project
AC Level 2
Commercial
EVSE

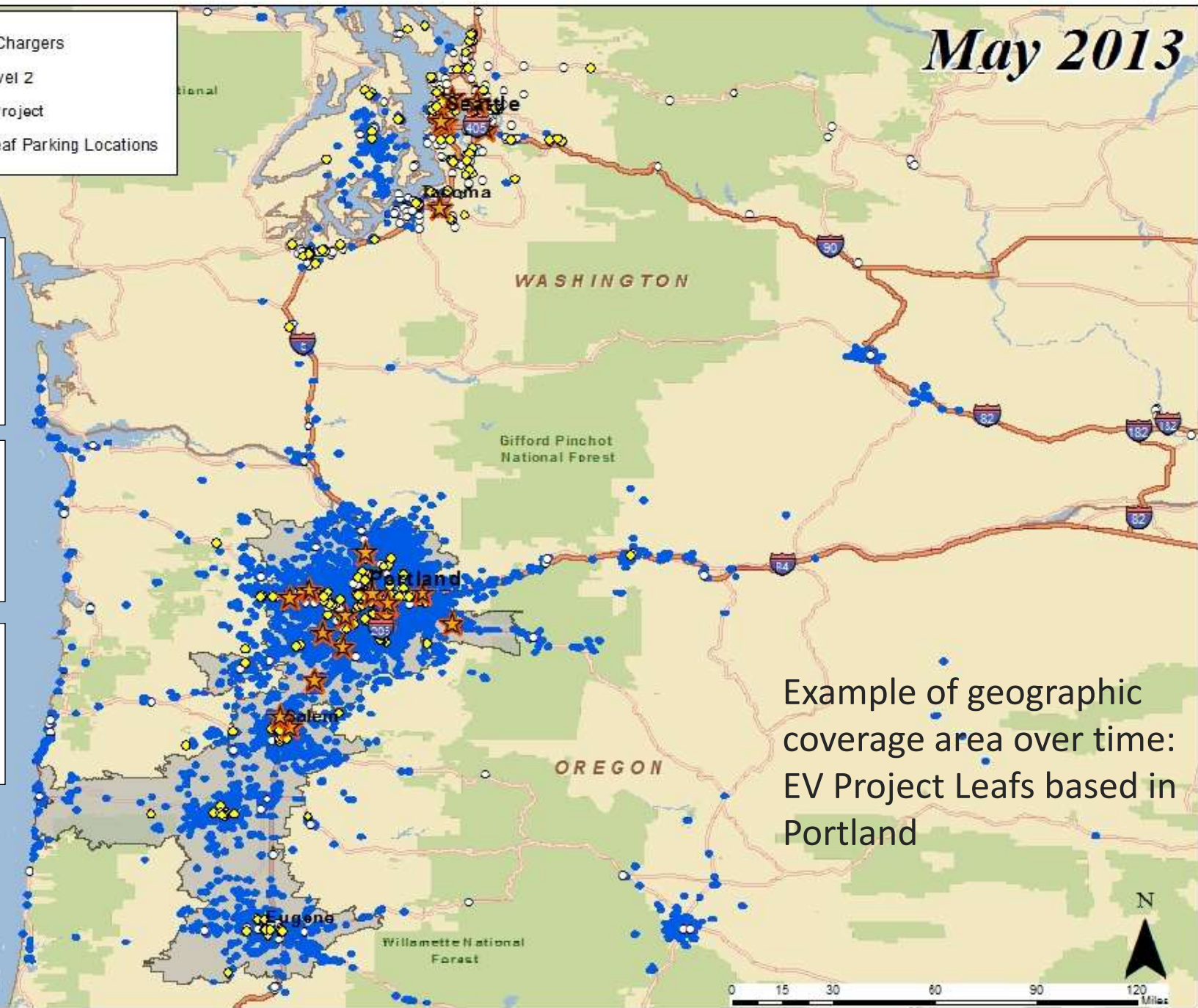
845

Number of
EV Project
DC Fast
Chargers

25

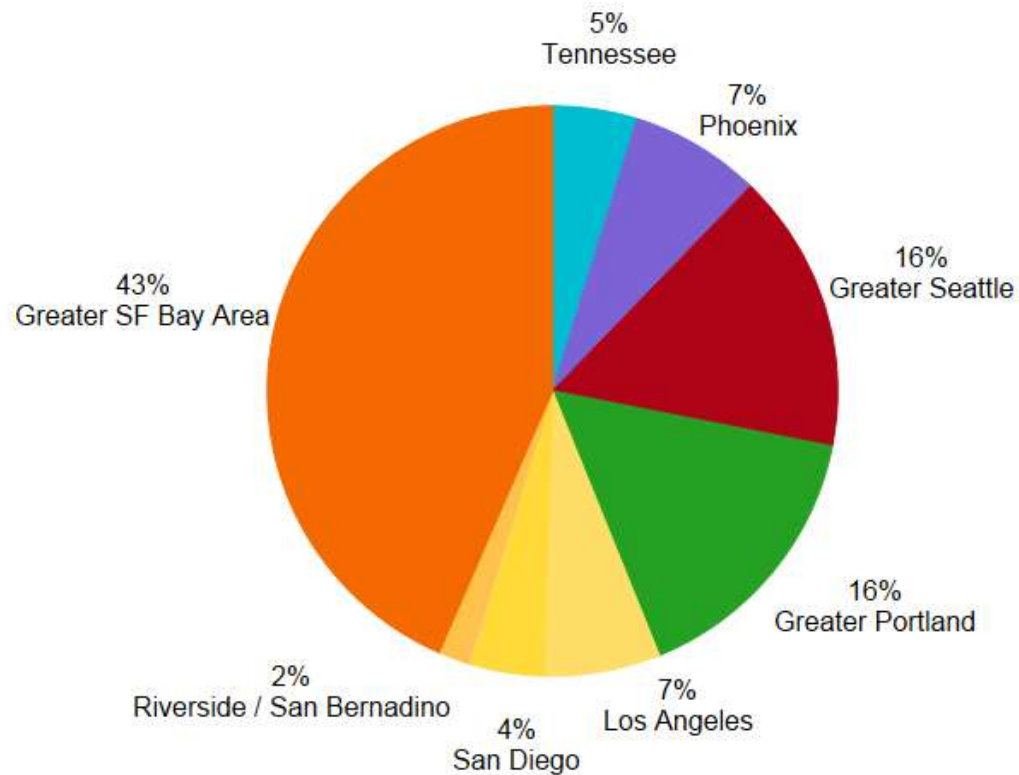
Number of
Known
Non-Project
EVSE

658



Example of geographic
coverage area over time:
EV Project Leafs based in
Portland

Blink DCFC Chargers - U.S. 1H 2013 - Markets



Region

Northeast Corridor

Tennessee

Phoenix

Tucson / Southern AZ

Greater Seattle

Greater Portland

Los Angeles

San Diego

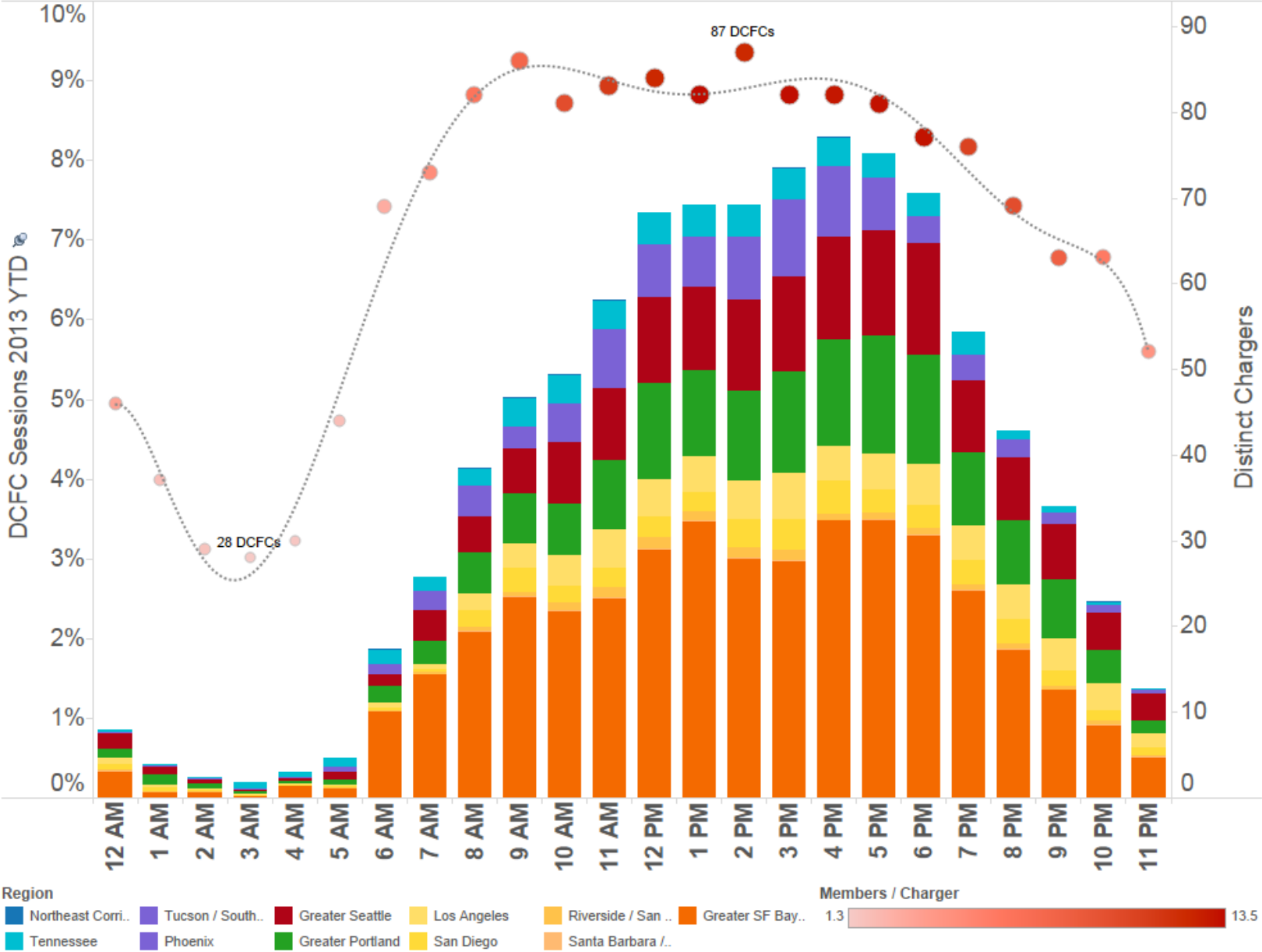
Santa Barbara / Ventura

Riverside / San Bernadino

Greater SF Bay Area

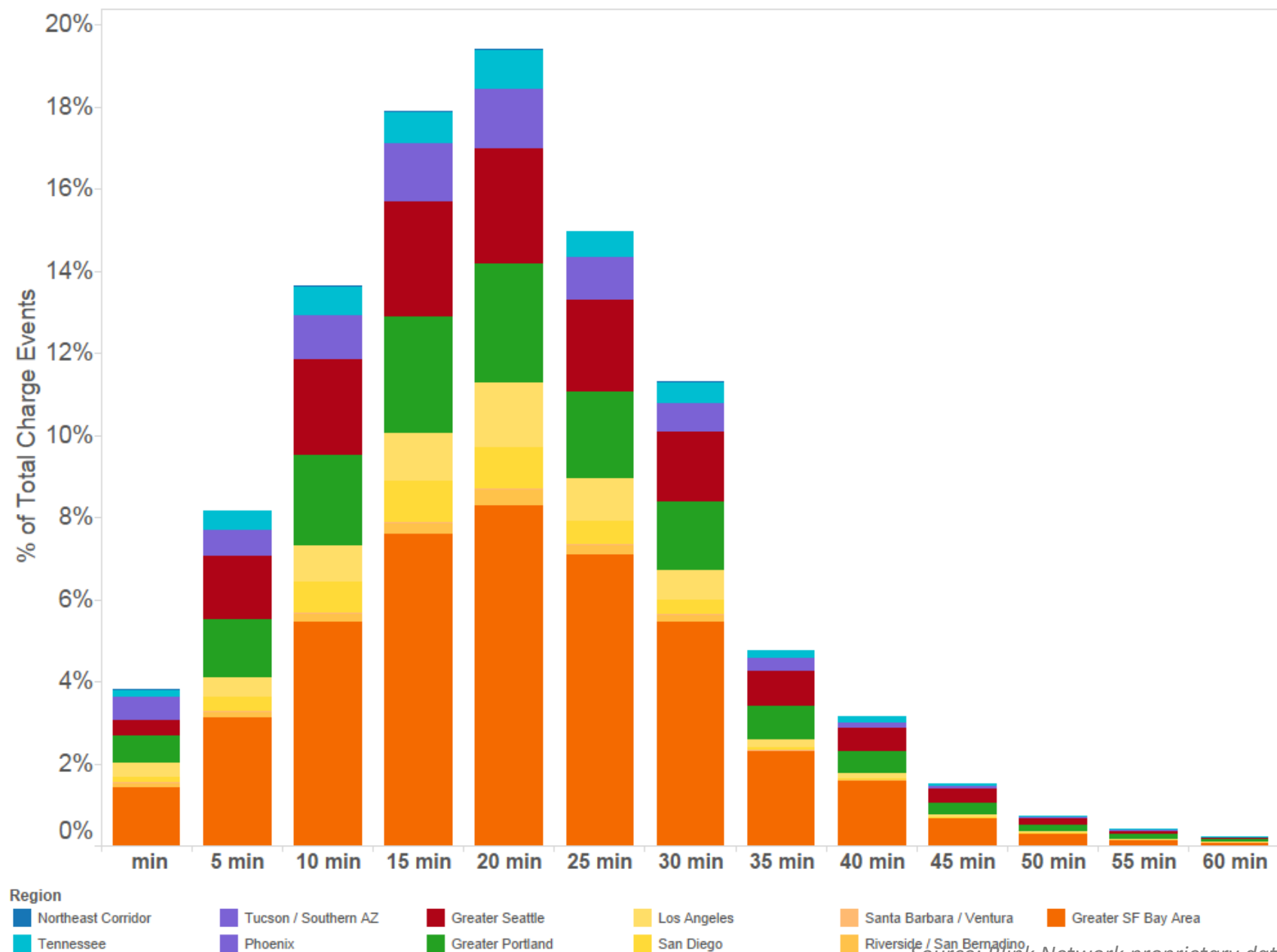
Source: Blink Network proprietary data

Blink DCFC Chargers - U.S. 1H 2013 - Usage time of day (PT)

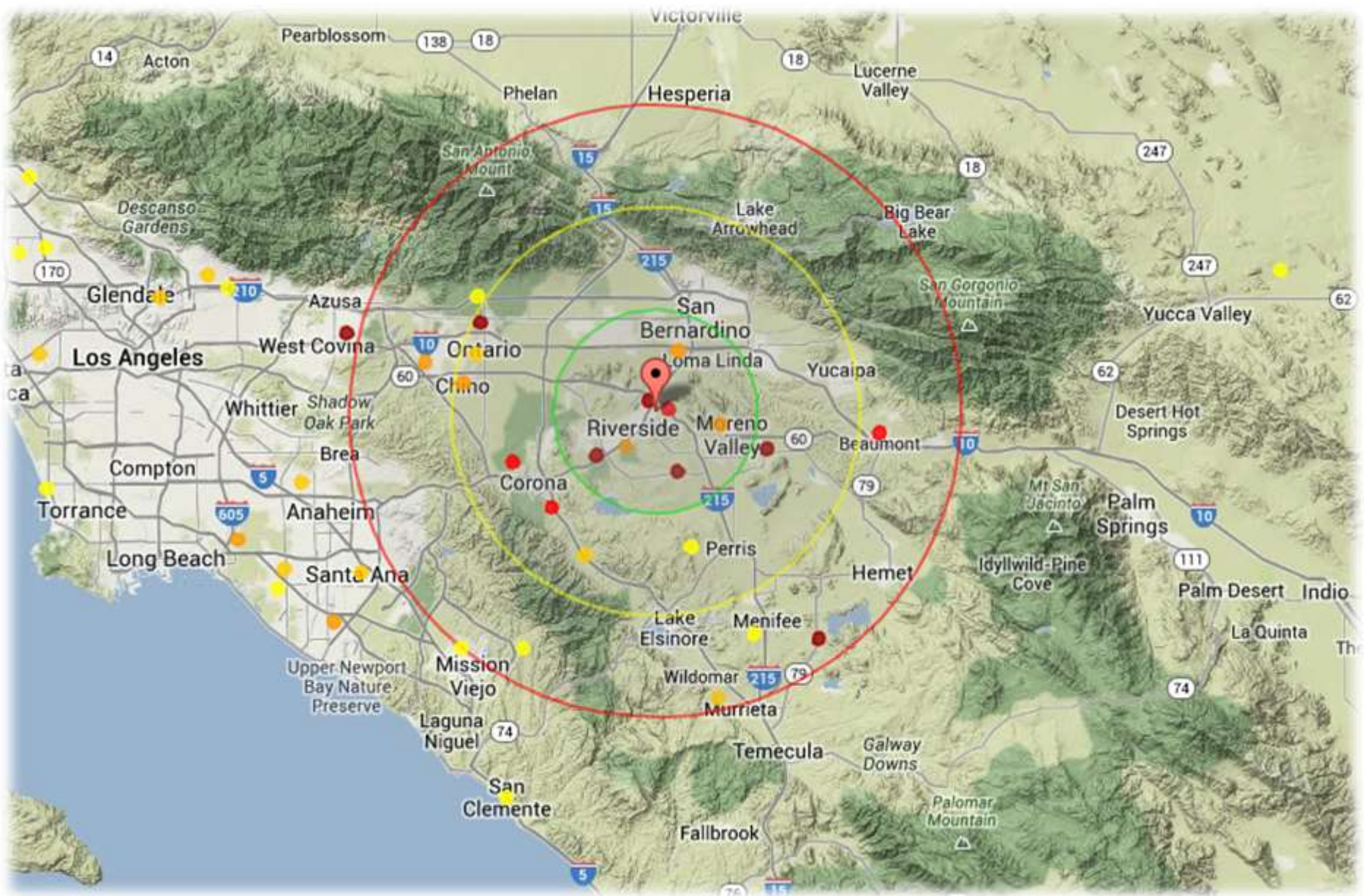


Source: Blink Network proprietary data

Blink DCFC Chargers - U.S. 1H 2013 - Session Length

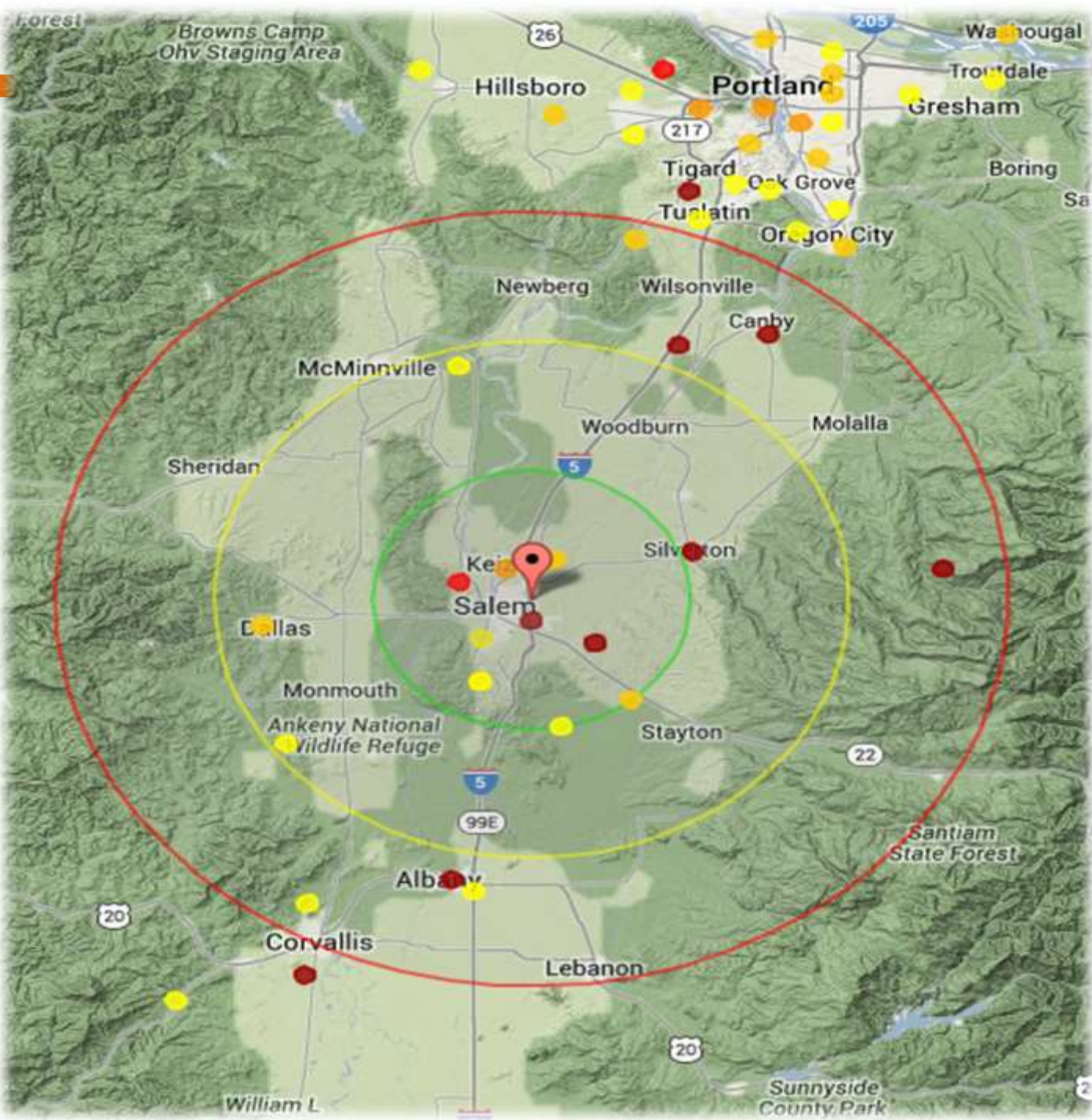


Source: Blink Network proprietary data

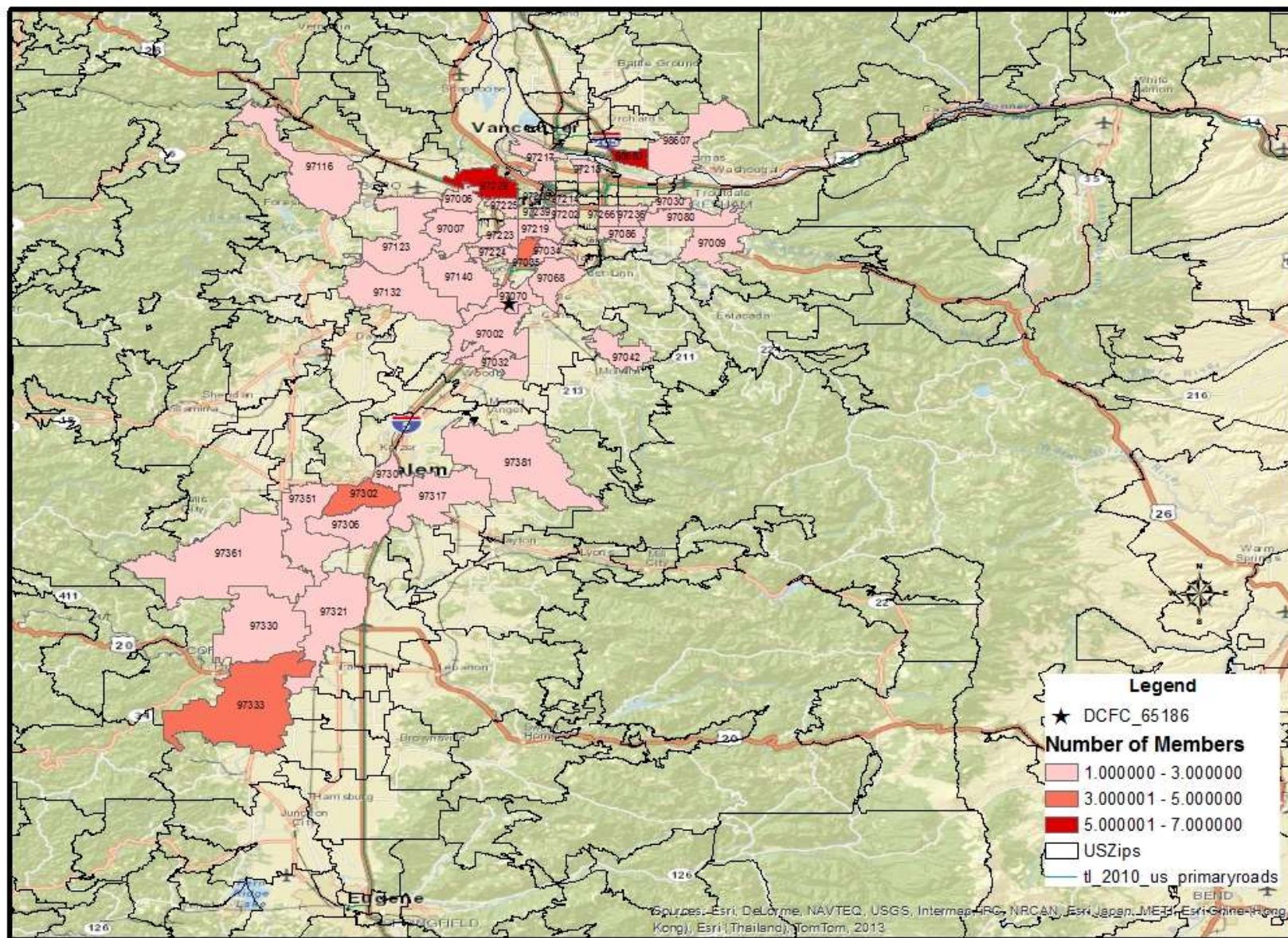


McDonald's in Riverside, CA

**Fred Meyer Store
#661 in Sunset, OR**

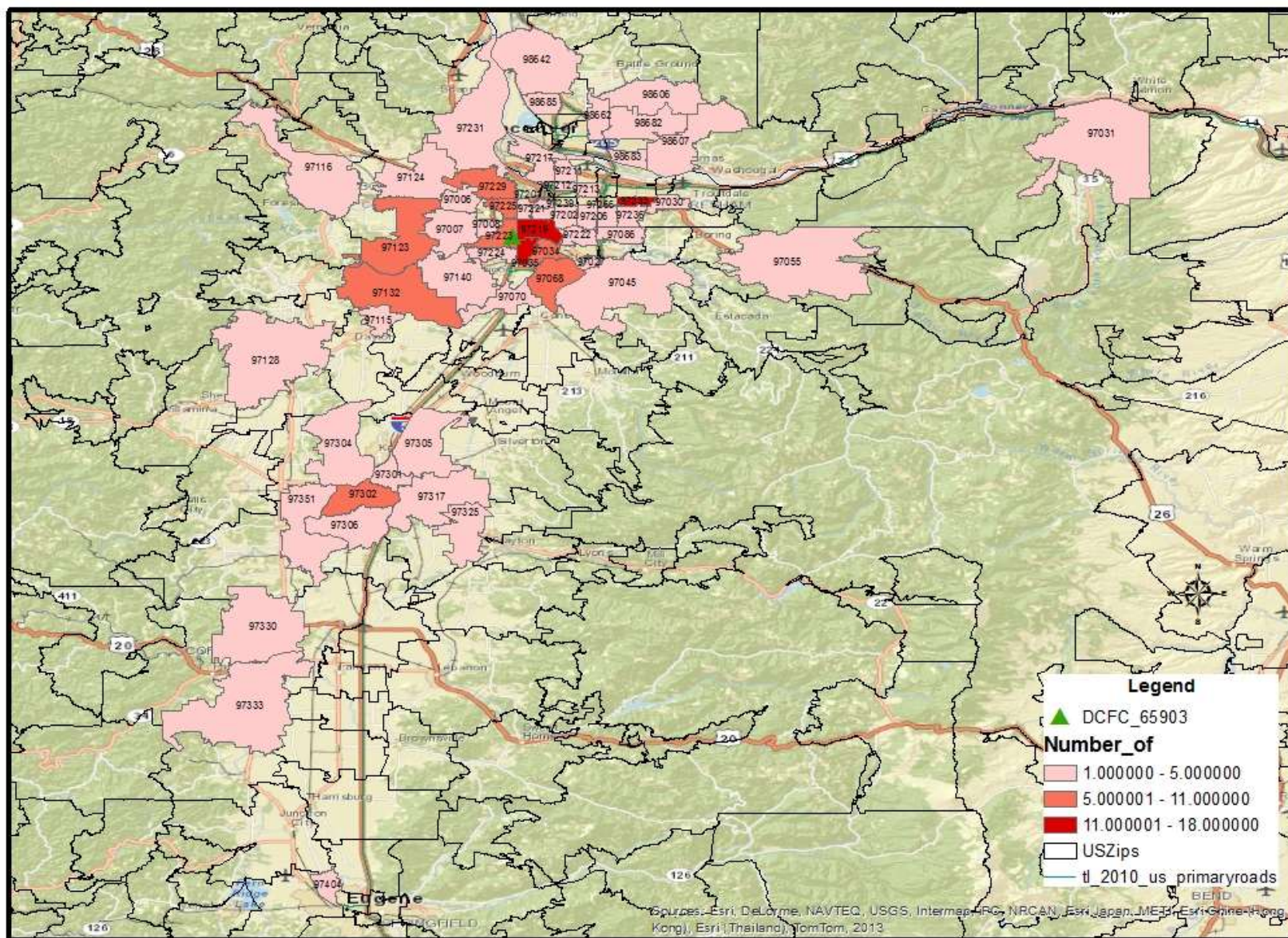


Distribution of Members Using DCFC by Zip Code



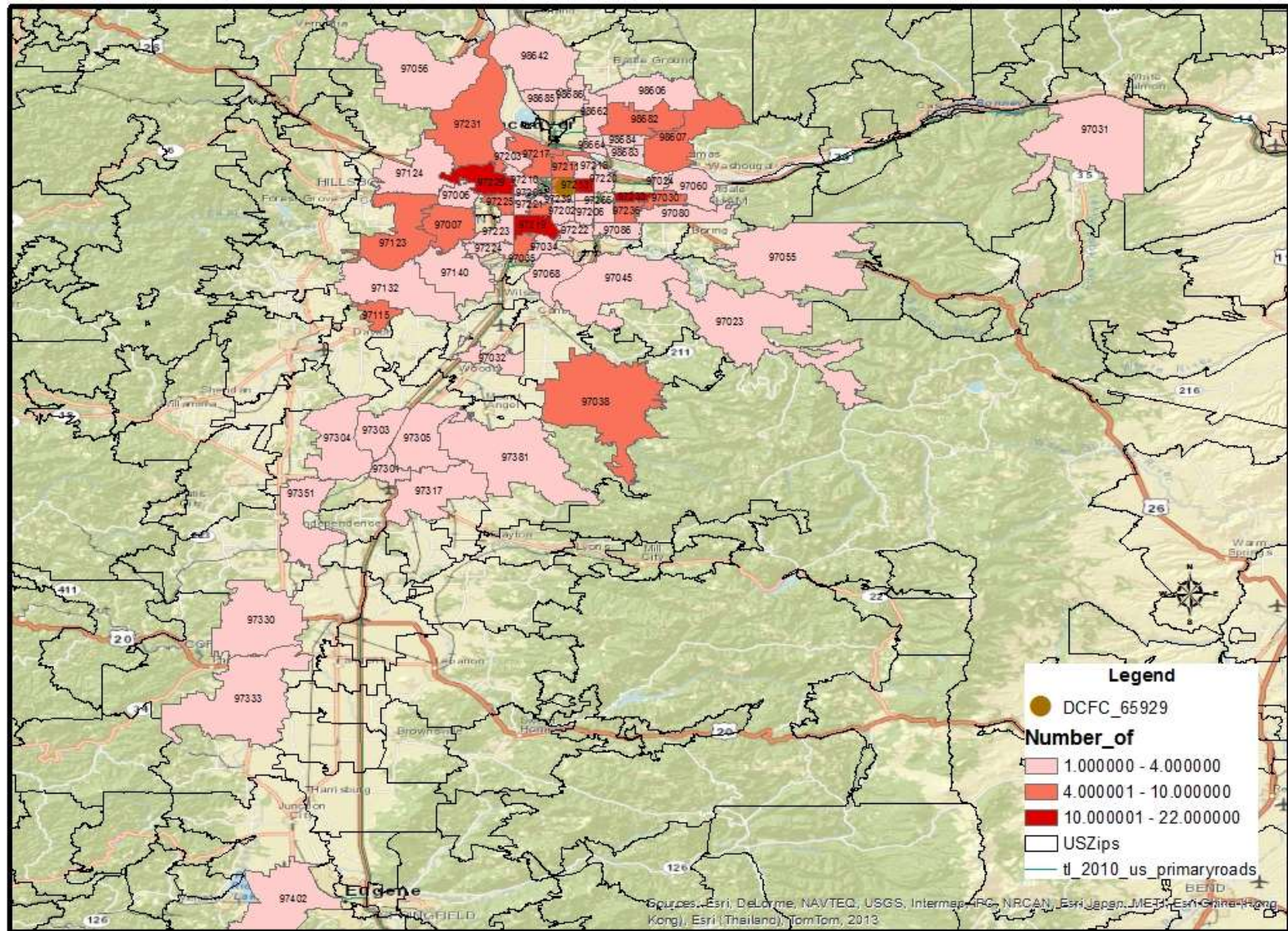
Portland General Electric at 8255 SW Wilsonville Road, Wilsonville

Distribution of Members Using DCFC by Zip Code



Fred Meyer Store in Tigard at 11565 SW Pacific Highway

Distribution of Members Using DCFC by Zip Code



Fred Meyer Store on Hollywood at 3030 NE Weidler St, Portland

Charger Venues

➤ Asset Program

Fleet	Publicly Accessible
Workplace	Residential

➤ Venue Type

Arts/Entertainment	Healthcare/Medical	Multi-Family	Restaurant
Auto Dealer	Hotel	Not-for-Profit	Retail/Big Box/National
Business Office	Transportation Hub	Parking Lot/Garage	Retail/Small Bus/Local
Educational Svcs	Mall	Parks and Recreation	Image
Govt/Public Admin	Military Installation	Professional/Tech	Utilities

➤ Environment

Urban	Transportation Corridor
Suburban	Industrial Campus

Quarter 2 of 2013

U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy

VEHICLE TECHNOLOGIES PROGRAM

EV Project Overview Report

Project to date through June 2013

Charging Infrastructure

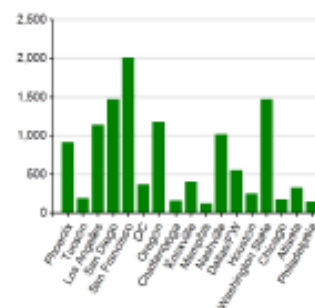
Region	Number of EV Project Charging Units Installed To Date	Number of Charging Events Performed	Electricity Consumed (kC kWh)
Phoenix, AZ Metropolitan Area	915	159,414	1,259.24
Tucson, AZ Metropolitan Area	134	41,496	286.66
Los Angeles, CA Metropolitan Area	1,111	254,642	2,111.15
San Diego, CA Metropolitan Area	1,471	464,211	4,129.24
San Francisco, CA Metropolitan Area	2,616	591,785	5,626.11
Washington, D.C. Metropolitan Area	1,711	166,411	715.11
Oregon	1,181	296,125	2,257.15
Charlottesville, VA Metropolitan Area	164	28,161	229.96
Knoxville, TN Metropolitan Area	466	54,675	440.64
Memphis, TN Metropolitan Area	124	26,546	196.07
Knoxville, TN Metropolitan Area	1,618	246,124	2,611.21
Dallas/Ft. Worth, TX Metropolitan Area	551	87,666	566.54
Phoenix, TX Metropolitan Area	256	17,114	244.96
Washington State	1,471	44,622	1,496.46
Chicago, IL Metropolitan Area	181	16,675	241.65
Atlanta, GA Metropolitan Area	124	42,675	146.94
Philadelphia, PA Metropolitan Area	146	15,412	116.72
Total	11,911	2,911,787	24,278.52

Vehicles

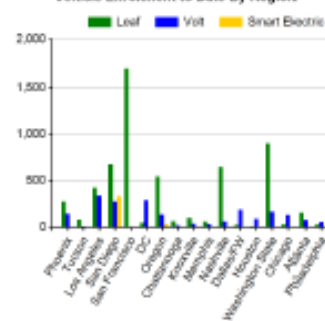
Region	EV Project Nissan Leaf Enrollments To Date	EV Project Chevrolet Volt Enrollments To Date	EV Project Smart Electric Drive Enrollments To Date	Distance Driven (mi)
Phoenix, AZ Metropolitan Area	274	141	—	5,279,667
Tucson, AZ Metropolitan Area	46	4	—	1,078,964
Los Angeles, CA Metropolitan Area	424	114	—	8,256,796
San Diego, CA Metropolitan Area	677	275	111	15,261,211
San Francisco, CA Metropolitan Area	1,768	—	—	21,466,546
Washington, D.C. Metropolitan Area	42	296	—	1,612,646
Oregon	541	111	16	8,644,791
Charlottesville, VA Metropolitan Area	59	14	—	524,765
Knoxville, TN Metropolitan Area	96	11	—	1,797,526
Memphis, TN Metropolitan Area	54	11	—	791,452
Knoxville, TN Metropolitan Area	645	54	—	7,469,754
Dallas/Ft. Worth, TX Metropolitan Area	21	186	—	2,676,664
Phoenix, TX Metropolitan Area	5	46	—	1,447,789
Washington State	434	164	—	12,156,789
Chicago, IL Metropolitan Area	26	129	—	1,626,726
Atlanta, GA Metropolitan Area	151	75	—	1,179,229
Philadelphia, PA Metropolitan Area	26	51	—	544,564
Total	5,729	2,612	161	91,166,244

EV Project

Charging Unit Installation to Date by Region



Vehicle Enrollment to Date By Region



Thank you

<http://www.theevproject.com/documents.php>

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