Charged Up: Making Metropolitan Washington Electric Vehicle Ready

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Purpose of report

- Region's policies and charging infrastructure not yet ready for growth in EV market
- Coordinated approach will ease EV deployment by addressing barriers
- EV offers potential environmental, economic and energy security benefits
  - Reduced tail pipe emissions (NOx,VOC,CO,CO_2)
  - Reduced fuel cost
  - Reduced dependence on imported fuel

Barriers to EV

- Limited availability of EVs for sale, slow demand
- Need for additional charging infrastructure to support future
- Range anxiety (travel distance between charging)
- Policies related to codes, standards and processes

EV Stimulus Programs

- Dept of Energy EV stimulus grants (2009)
  - ECOtality's the EV Project (2009)
  - Coulomb Technology's ChargePoint America
  - Maryland Energy Administration (MEA), MD EV Infrastructure Project (2010)
- Transportation Climate Initiative (TCI) (2011)
  - New York State Energy Research & Dev. Authority
  - Clean Cities Coalitions in Northeast and DC
  - Georgetown Climate Center

Signs of EV Readiness, Washington Region

- Vehicle Registration
- Local government policies, data
- Household Travel Demand Survey (2007-2008)
- EVSE Inventory, number and location

Survey of Local Government EV Readiness (Jan-Feb 2012)

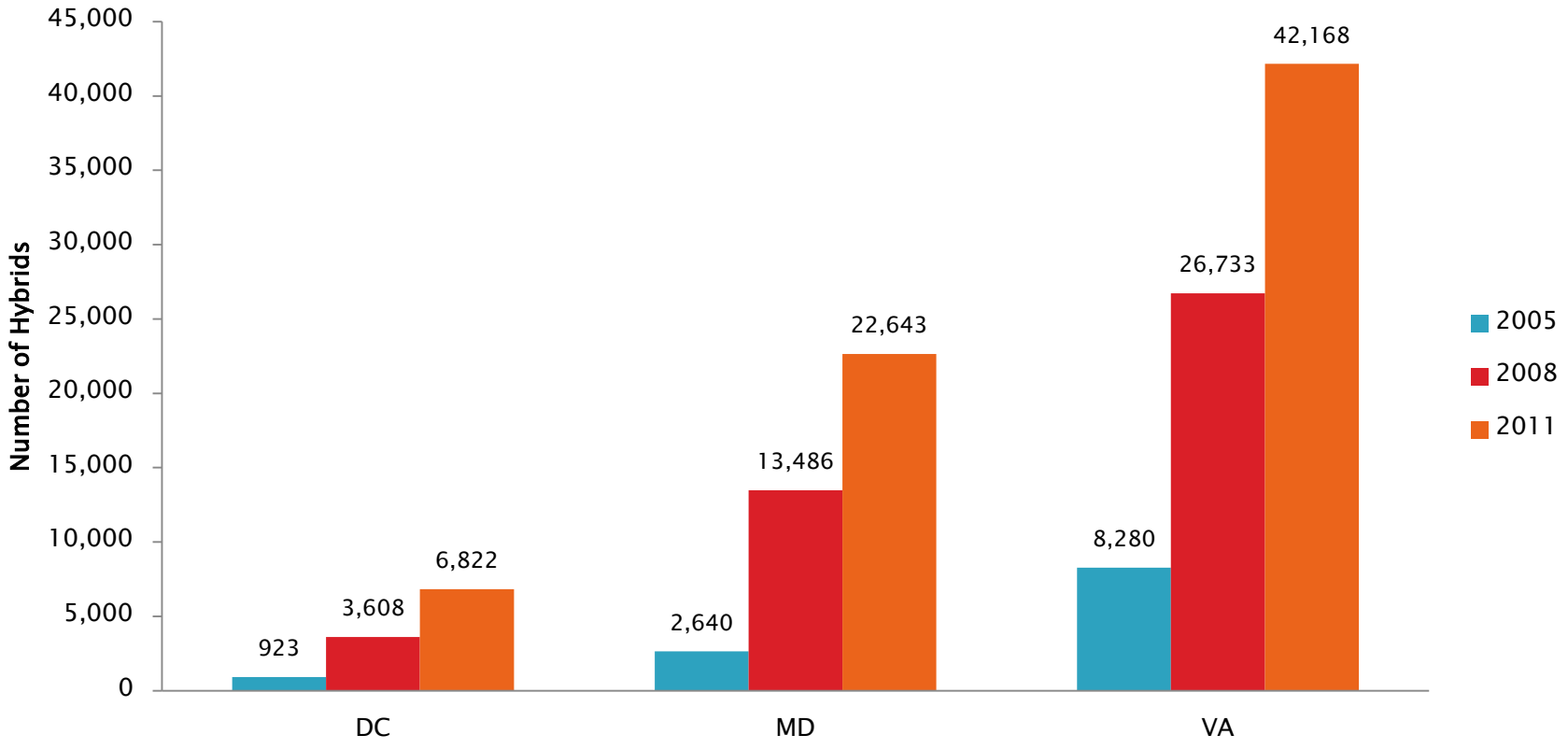
- Most LG have no EV policy development
  - DC and Fairfax County have zoning considerations , building code policy and ADA parking restrictions
- Most LG permit EV charging stations as a standard electrical appliance
  - City of Frederick and Falls Church track EV charging permit applications
  - DC and Fairfax County have online permitting

Vehicle Registration

- Less than 500 EVs registered in metro Washington region
  - 189 MD suburbs
  - 110 District of Columbia
- Hybrid registration: 76,181 vehicles (2011)
- History of early adopters, hybrid vehicle registration 2005-2011 suggests pattern for EV deployment

Hybrid Vehicle Registration

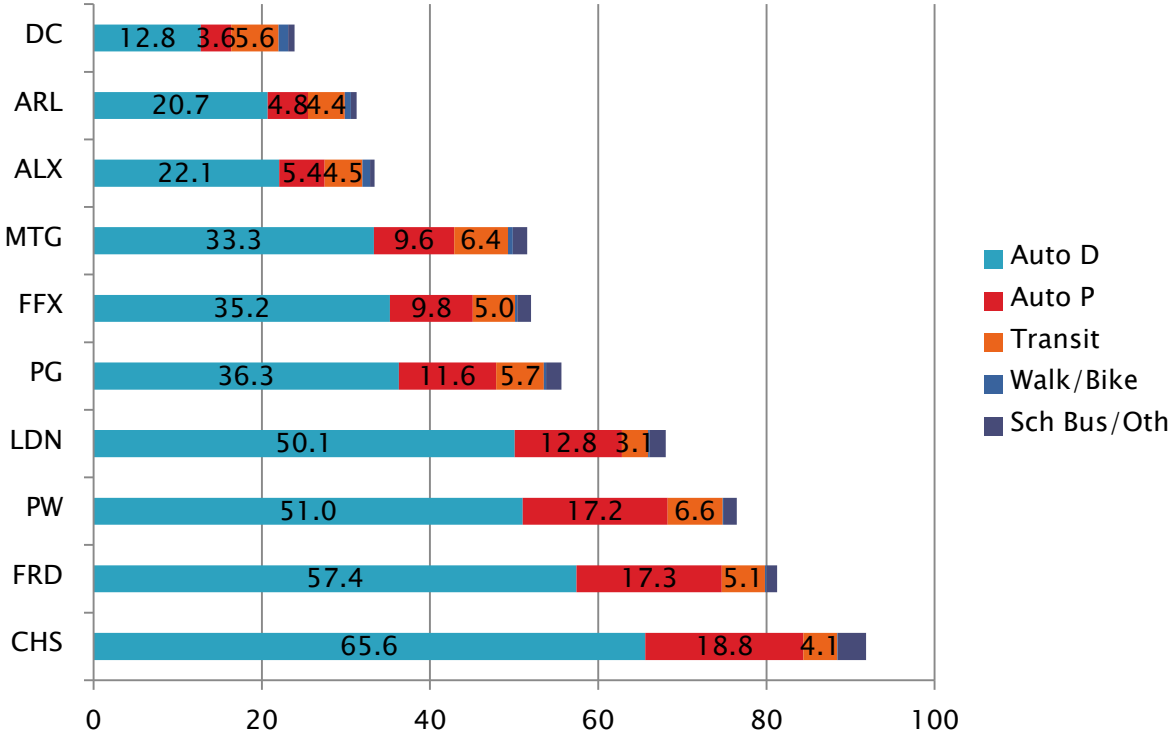
Figure 3-1. Washington Area Hybrid Vehicle Registration Comparison by State for 2005, 2008, and 2011



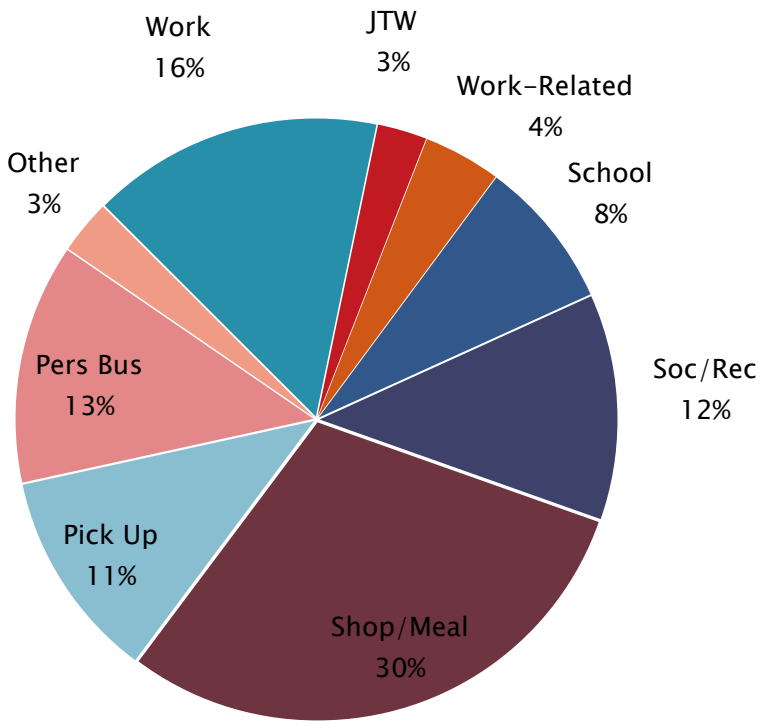
Household Travel Demand Survey

- 81% of daily trips in region are by auto
- Most trips relatively short, average 7.7 miles
- Work trips: 90% of trips are less than 20 miles one way
- Shopping trips: 96% are less than 20 miles one way

Average Daily Miles Traveled Per Household by Jurisdiction and Mode



Daily Trips by Purpose, Metropolitan Washington Region, 2007-2008



Inventory of EVSE

- 332 chargers at 133 charging stations in metropolitan Washington region
  - District: 36
  - Arlington: 15
  - Fairfax Co: 18
  - Charles Co: 11
- Location of charging stations:
  - Office (1/3 of stations)
  - Shopping
  - Dealership

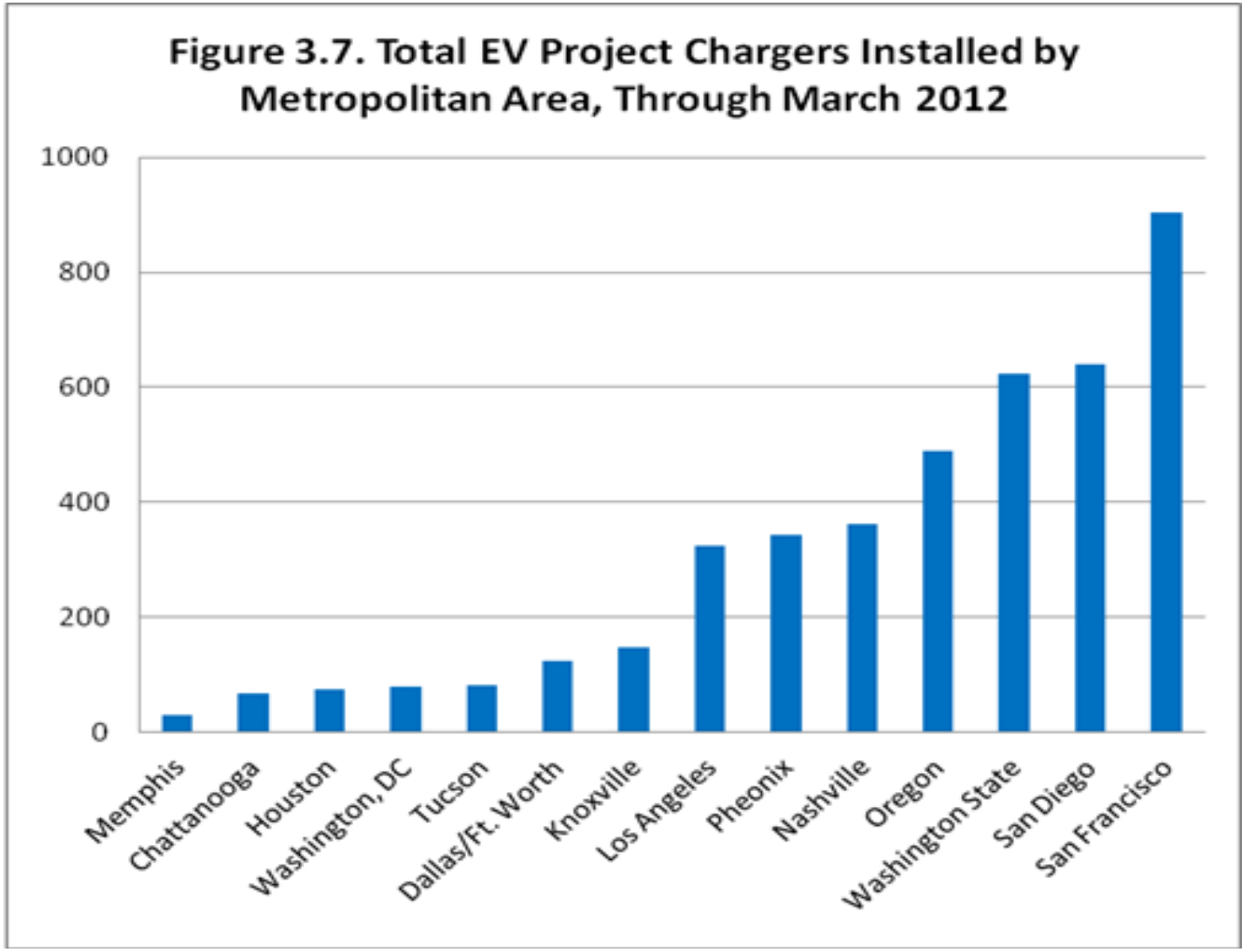
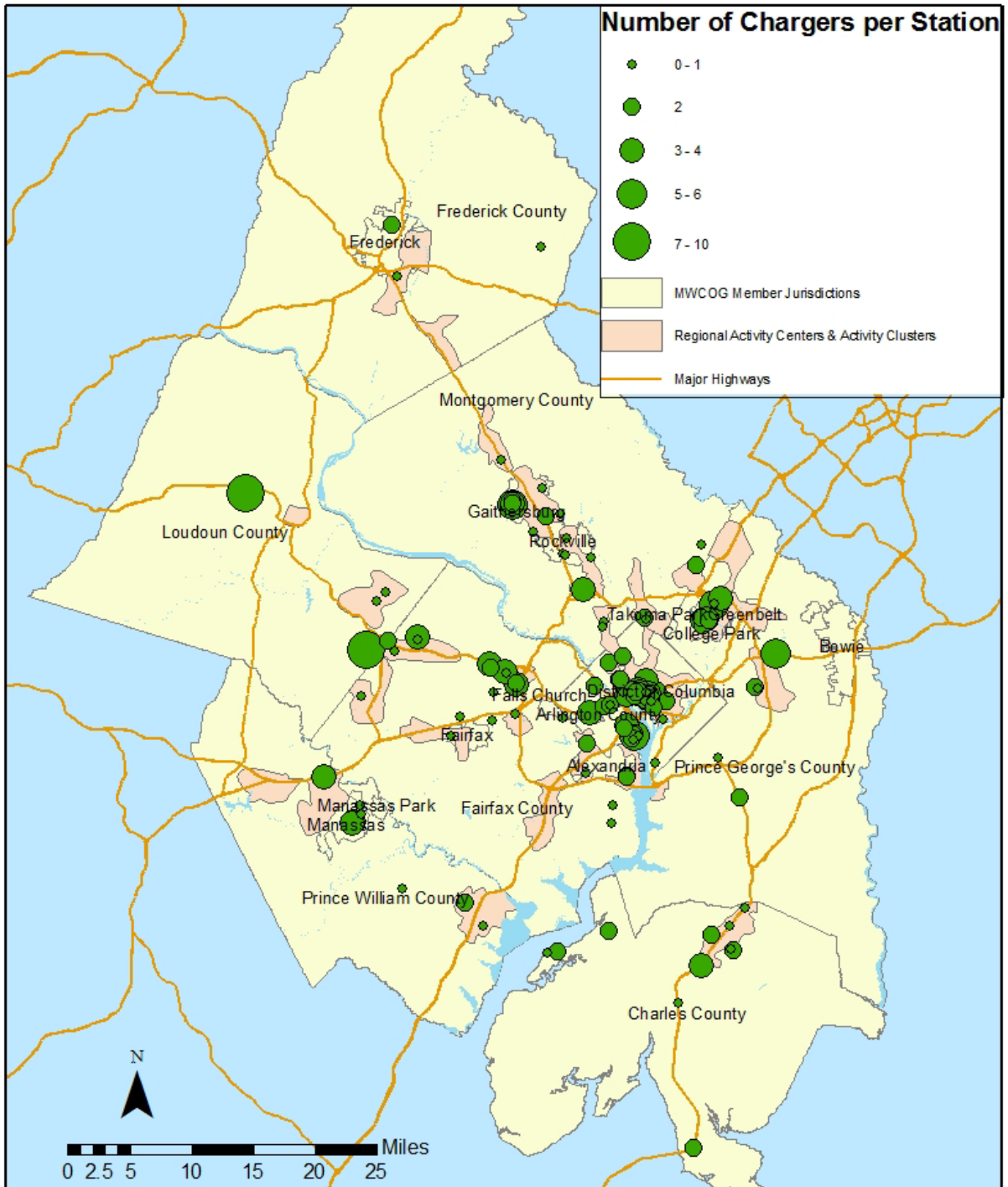


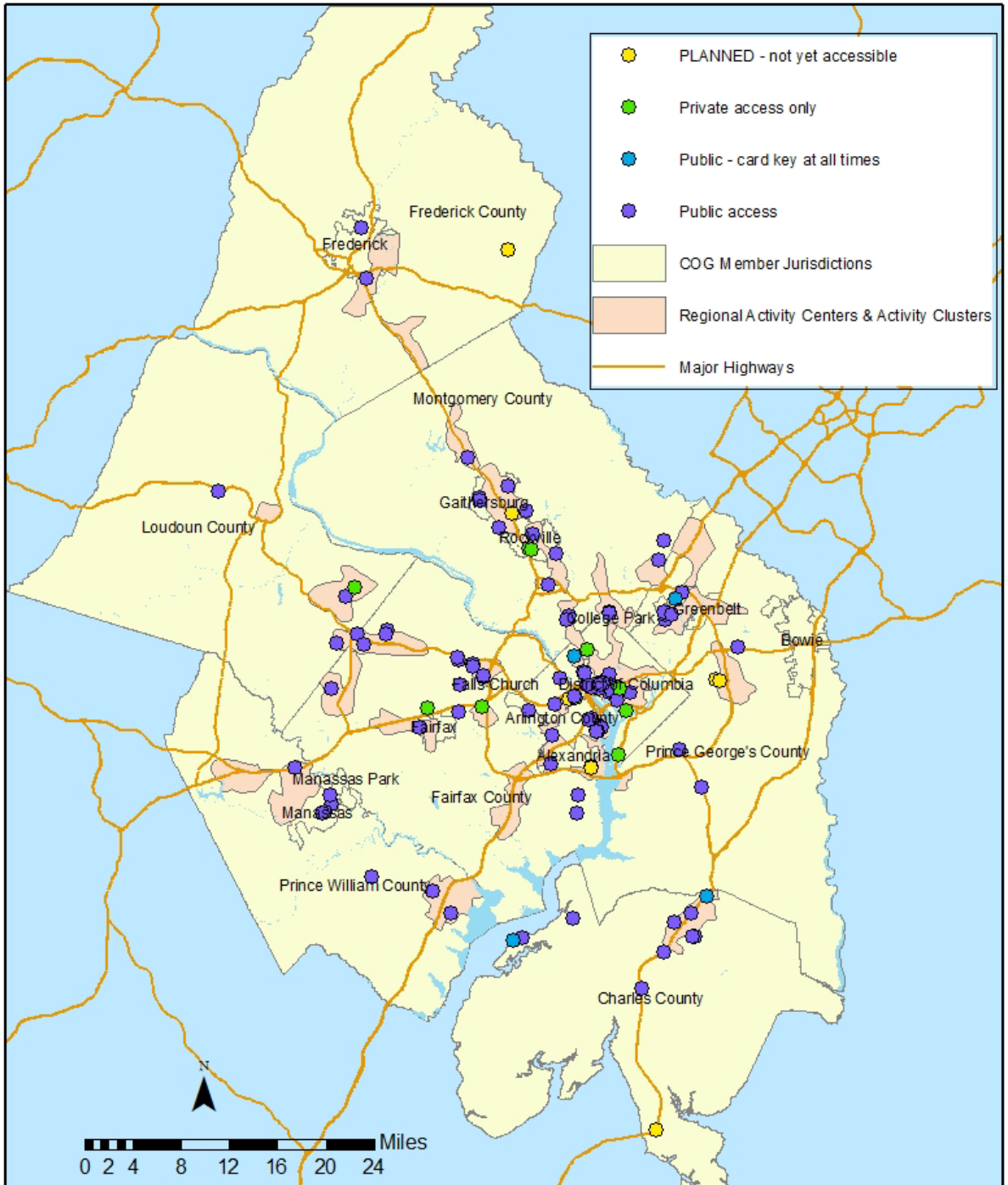
Figure 3.7. Total EV Project Chargers Installed by Metropolitan Area, Through March 2012
1000
800
600
400
200
0
Memphis
Chattanooga
Houston
Washington, DC
Tucson
Dallas/Ft. Worth
Knoxville
Los Angeles
Pheonix
Nashville
Oregon
Washington State
San Diego
San Francisco

EVSE Stations by Location Type,

Metropolitan Washington Region

	Stations	Chargers
Office	45	110
Shopping	20	48
Dealership	17	20
Government	11	27
University	10	25
Mixed use	10	38
Multifamily dwelling unit	7	11
Recreation	5	26
Hotel	3	6
Transportation hub	2	4
Airport	2	16
Restaurant	1	1
Total	133	332


Number of Chargers per Station
0 - 1
2
3 - 4
5 - 6
7 - 10
MWCOG Member Jurisdictions
Regional Activity Centers & Activity Clusters
Major Highways
Frederick County
Frederick
Montgomery County
Loudoun County
Gaithersburg
Rockville
Takoma Park
Greenbelt
College Park
Bowie
Falls Church
District of Columbia
Arlington County
Fairfax
Alexandria
Prince George's County
Manassas Park
Manassas
Fairfax County
Prince William County
Charles County
N
Miles
0 2.5 5 10 15 20 25


PLANNED - not yet accessible
Private access only
Public - card key at all times
Public access
COG Member Jurisdictions
Regional Activity Centers & Activity Clusters
Major Highways
Frederick County
Frederick
Montgomery County
Gaithersburg
Rockville
Loudoun County
College Park
Greenbelt
Bowie
Falls Church
District of Columbia
Arlington County
Fairfax
Alexandria
Prince George's County
Manassas Park
Manassas
Fairfax County
Prince William County
Charles County
N
Miles
0 2 4 8 12 16 20 24

EV Workgroups: Next Steps

- Select 5-6 priority recommendations
- Deadline for comments, July 6
- Finalize EV Readiness Report, July
- Present report to CEECP, July 25
  - EV Panel discussion: Future of EV
- Implement Recommendations
- Formalize Washington Regional EV coalition "WREV"

Recommendations

- Comprehensive plans and zoning regulations should guide EV infrastructure development and ensure the built environment can accommodate future EVSE installations.
- Electric permitting procedures should identify EVSE installations and notify electric utilities of their locations.
- States should promote a clear regulatory framework for EV charging service providers that exempts them from regulation as electric utilities

Recommendations

- Local and state officials, employers, property owners, and other EV stakeholders should consider offering incentives to EV early adopters, such as preferred parking and HOV occupancy exemptions.
- Municipalities should offer developer benefits to incentivize EV infrastructure investment in new construction.
- Outreach and education is needed to foster continued stakeholder participation and train EVSE installers.