



# EVSE Pilot Report

Docket UE-160082

Rendall Farley, P.E.  
WUTC Open Meeting  
January 9, 2020



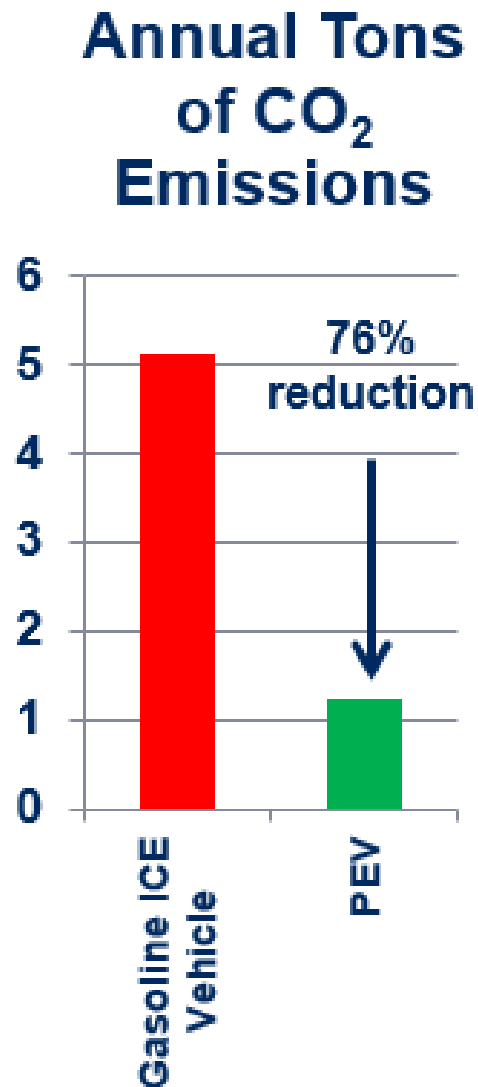
Avista Corp.

## Electric Vehicle Supply Equipment Pilot Final Report

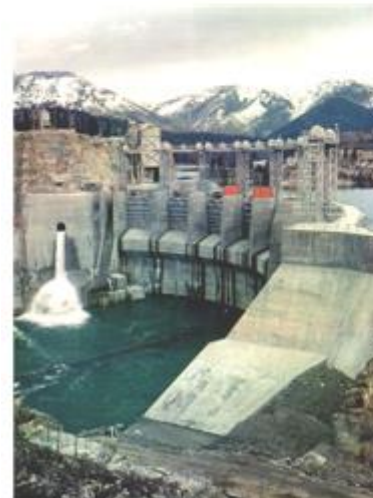
- **Pilot Overview**
- **Lessons Learned**
- **Future Opportunities**

# Transportation Electrification

## A Better Energy Future for All



\$2,808  
annual gasoline  
transportation  
fuel expense  
per household  
@ \$3 /gal



\$550  
annual electric  
transportation  
fuel expense  
per household  
@ 10¢ /kWh

# Opportunity for Beneficial Load Growth

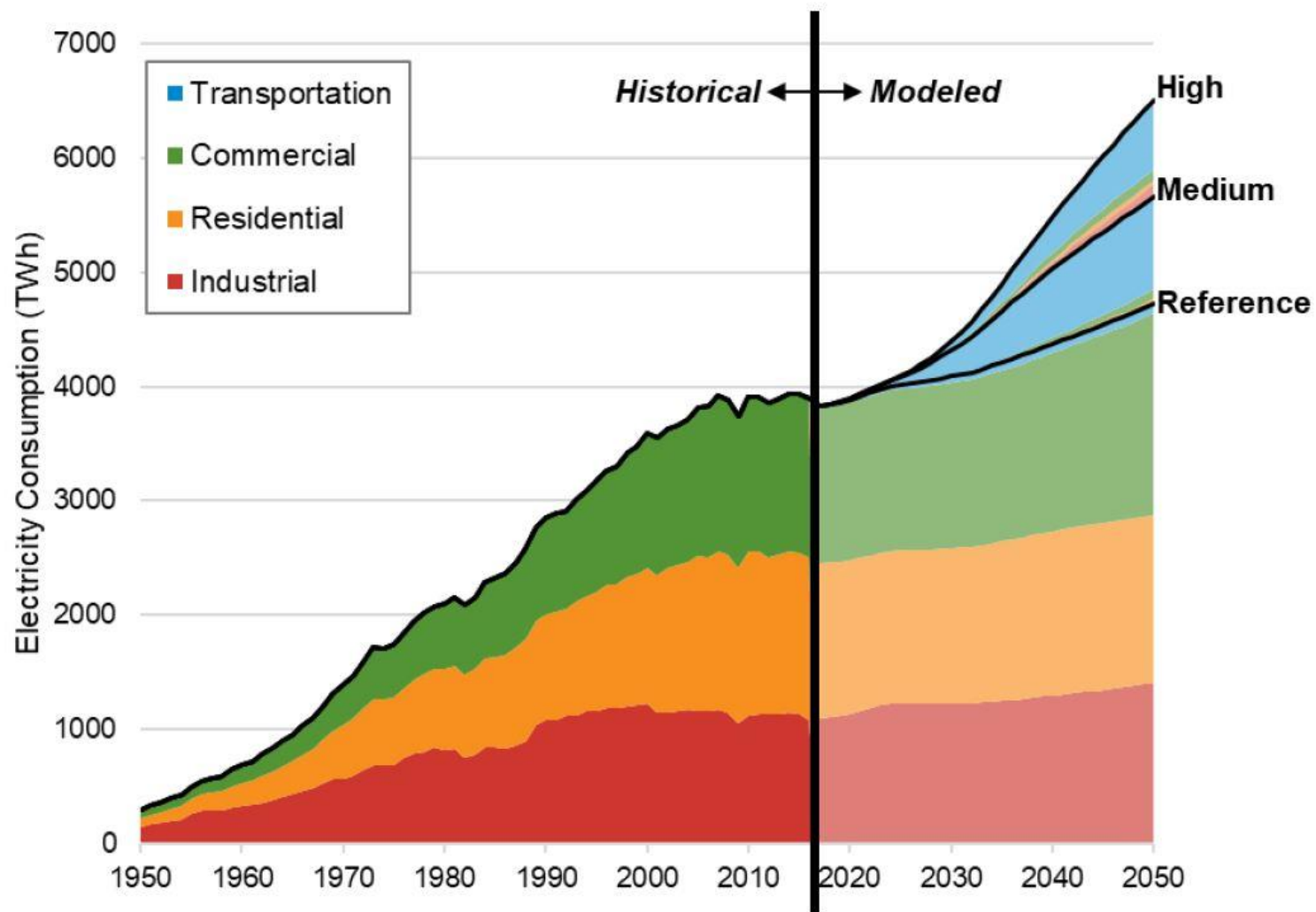


Figure ES-3. Historical and projected annual electricity consumption

# EVSE Pilot Design

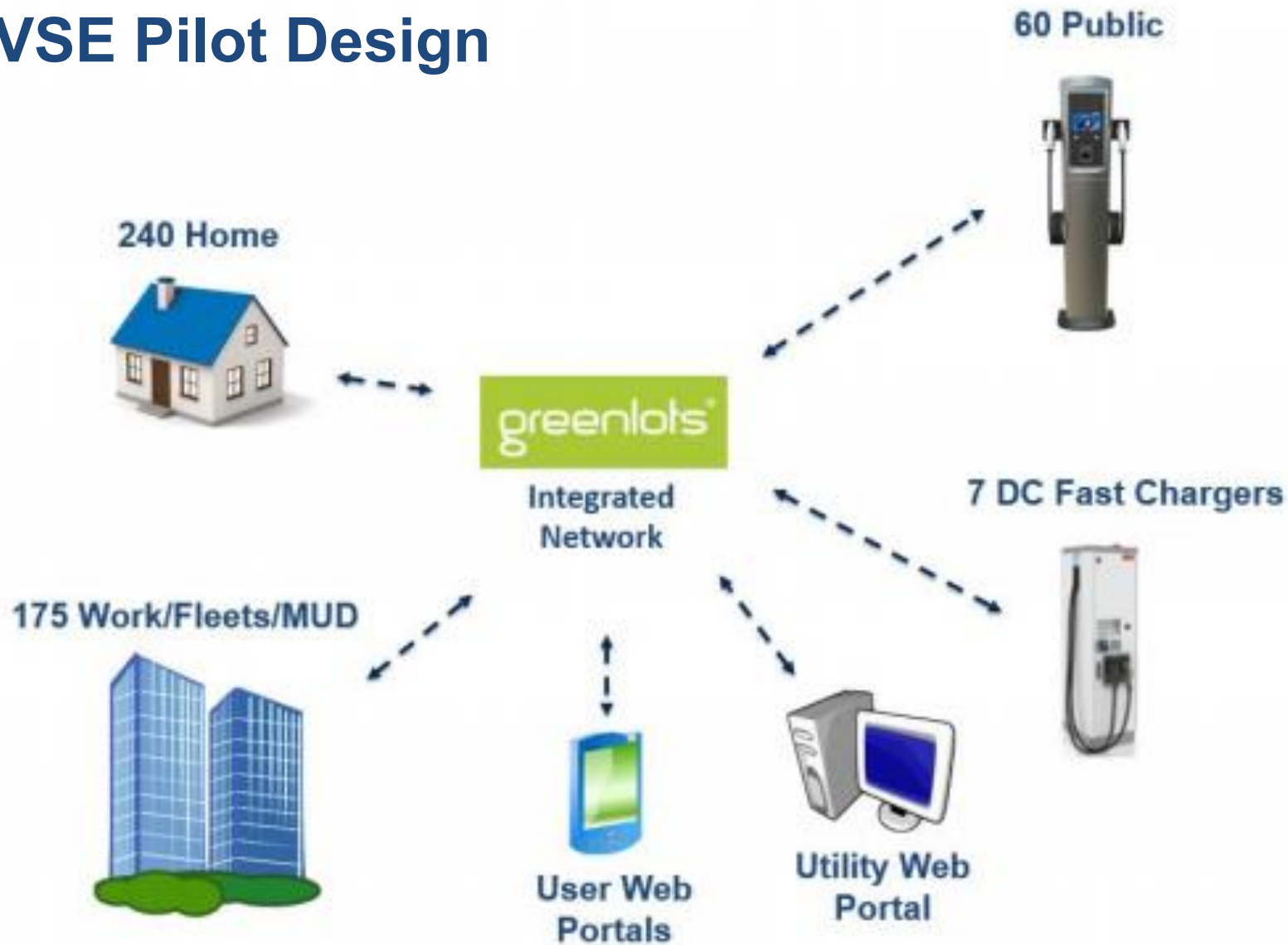


Figure 7: Integrated EVSE network design

# Public AC Level 2 EVSE

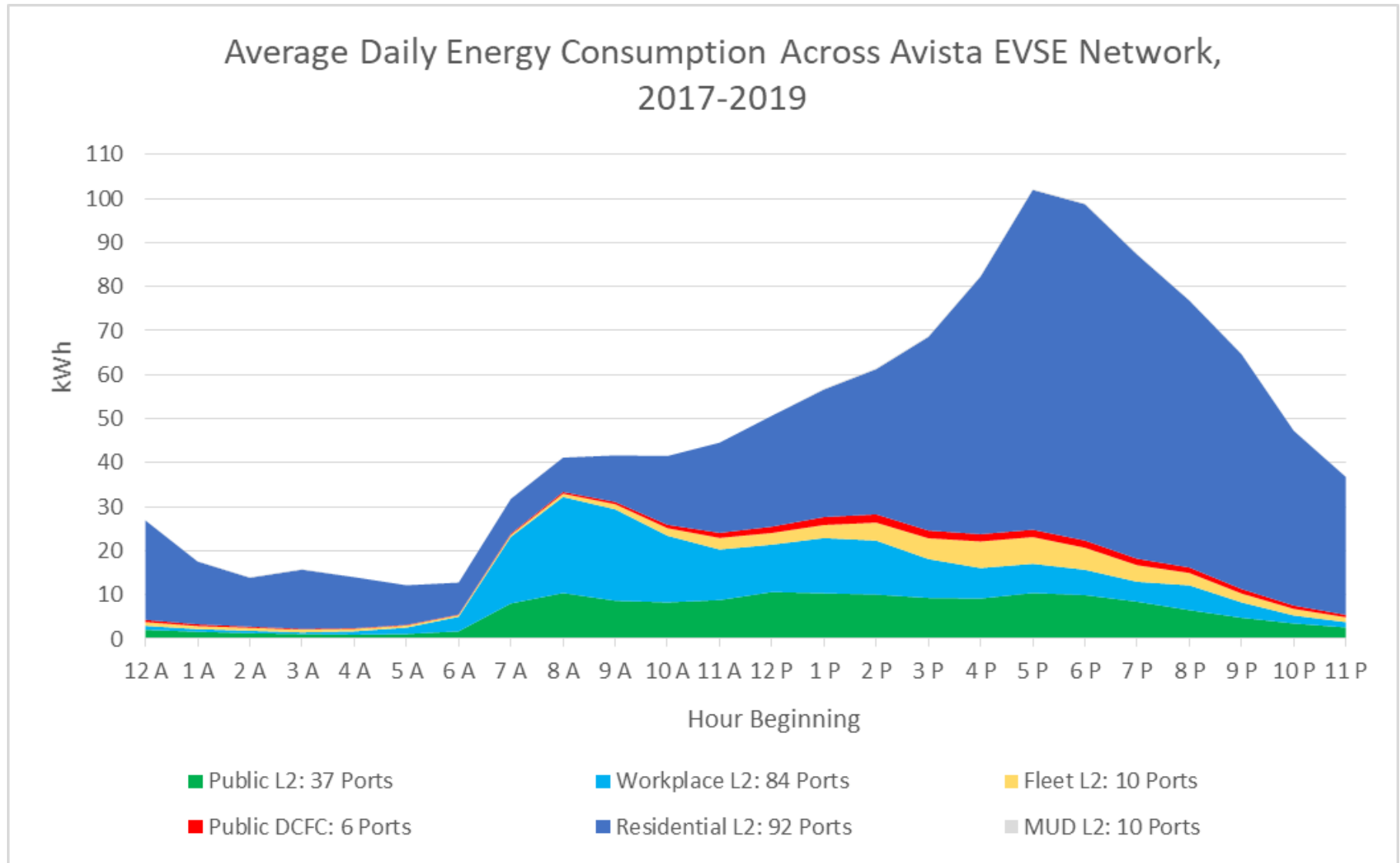


Figure 15: Public EVSE installation in partnership with the City of Colville

# DC Fast Charging Site Construction

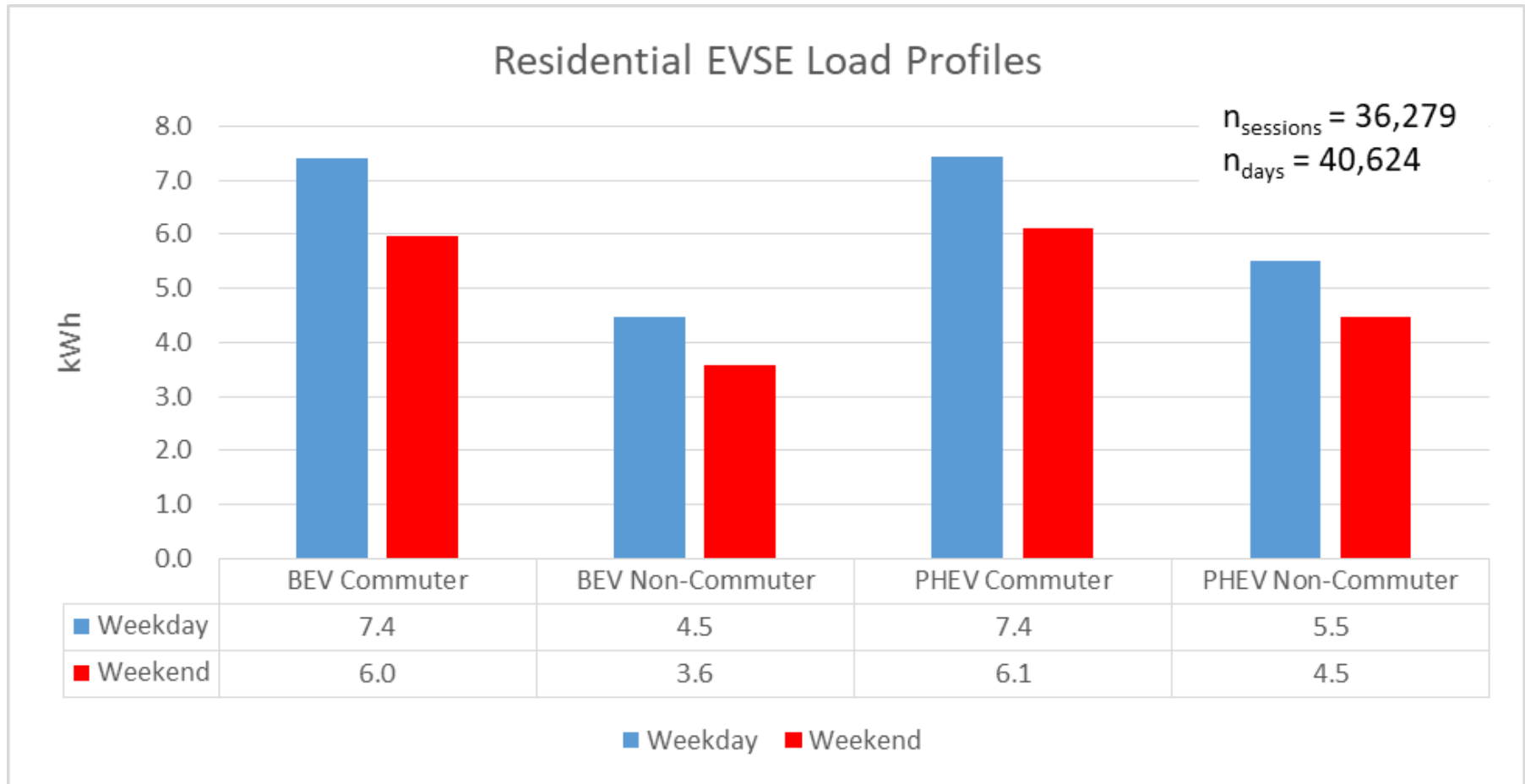


# EV Load Shape

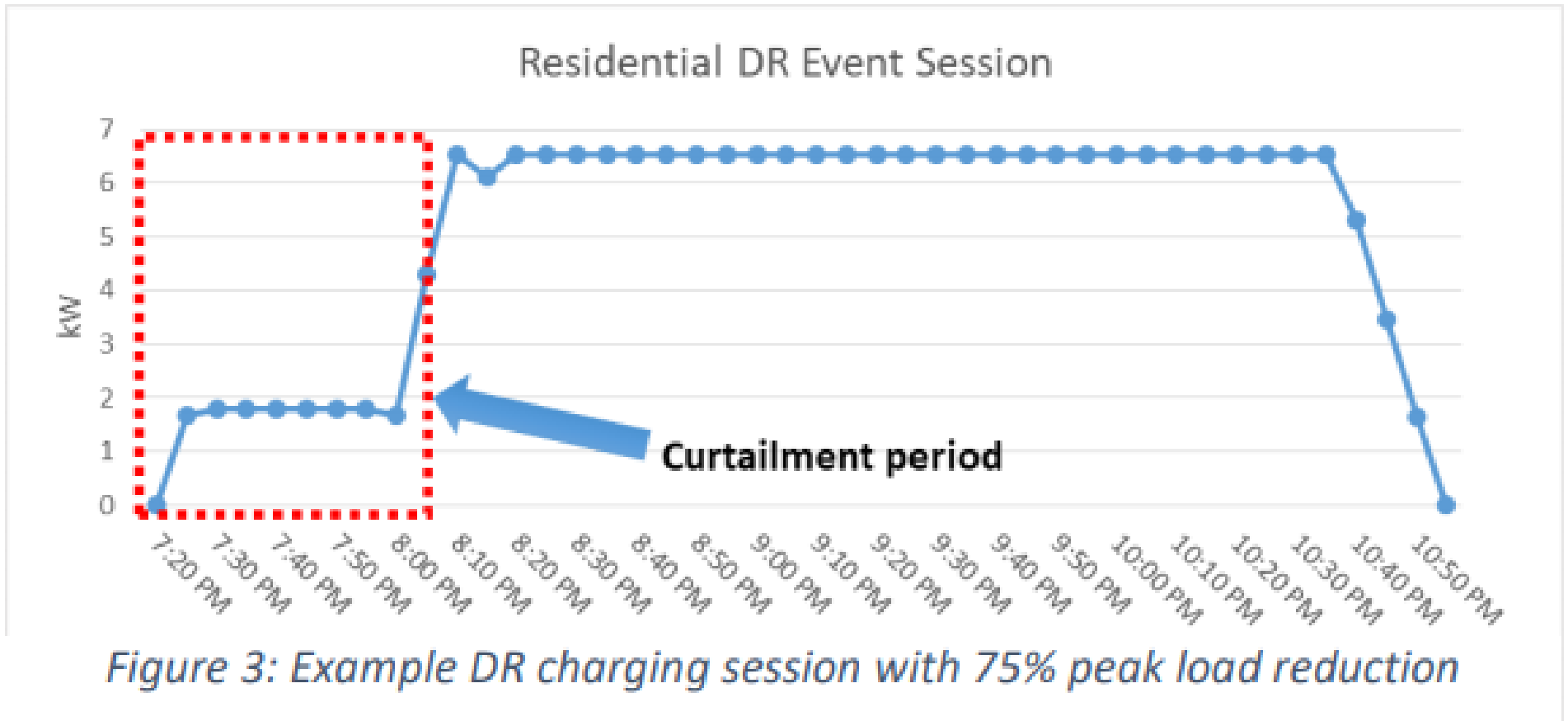




# Energy Usage and Grid Impacts are Manageable



# EV Charging Flexibility – Customer Acceptance



# EVSE Maintenance and Repair are Critical



*Figure 31. EVSE damage from a vehicle impact*

# EVs Can Benefit All Customers

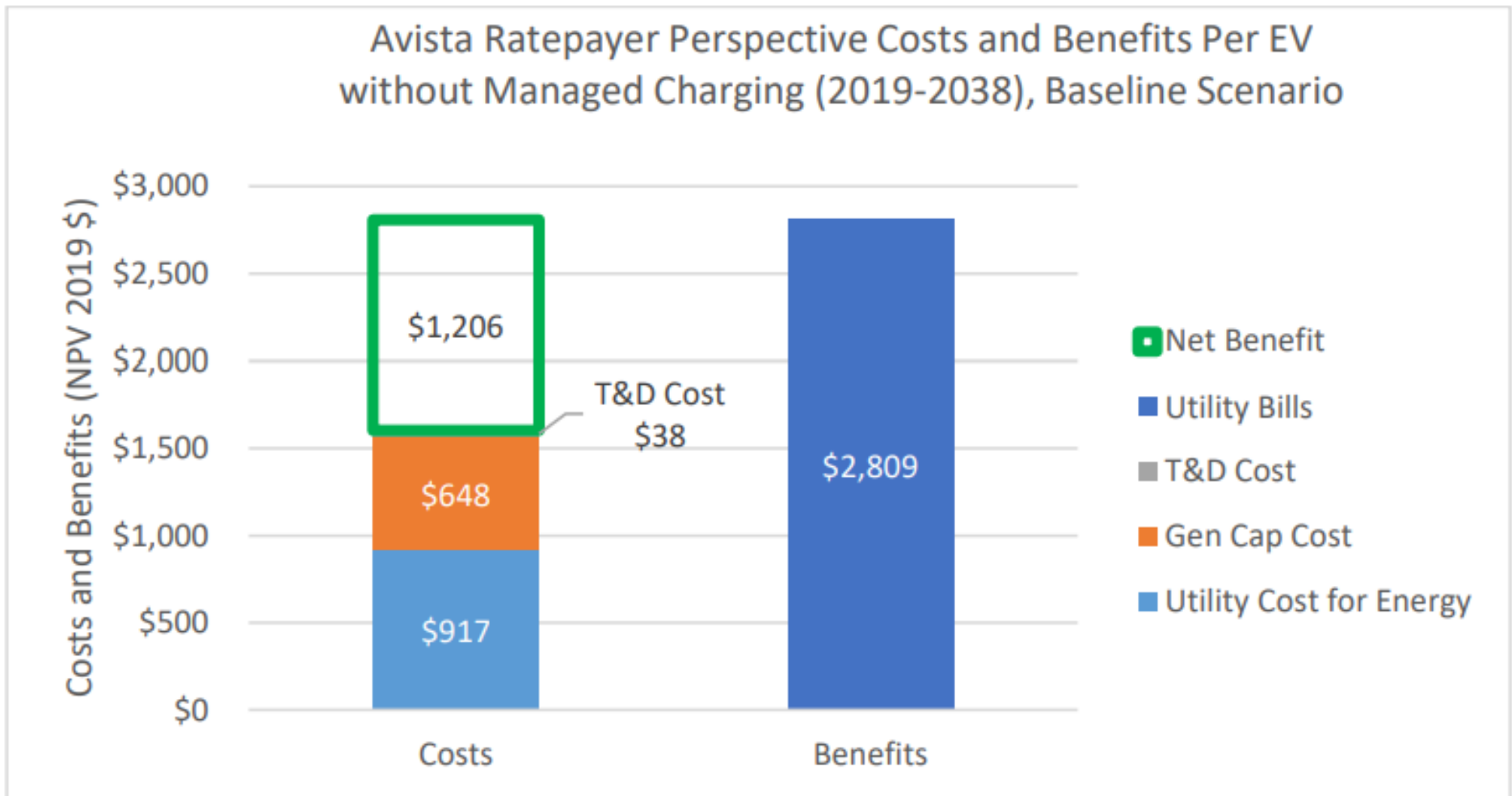
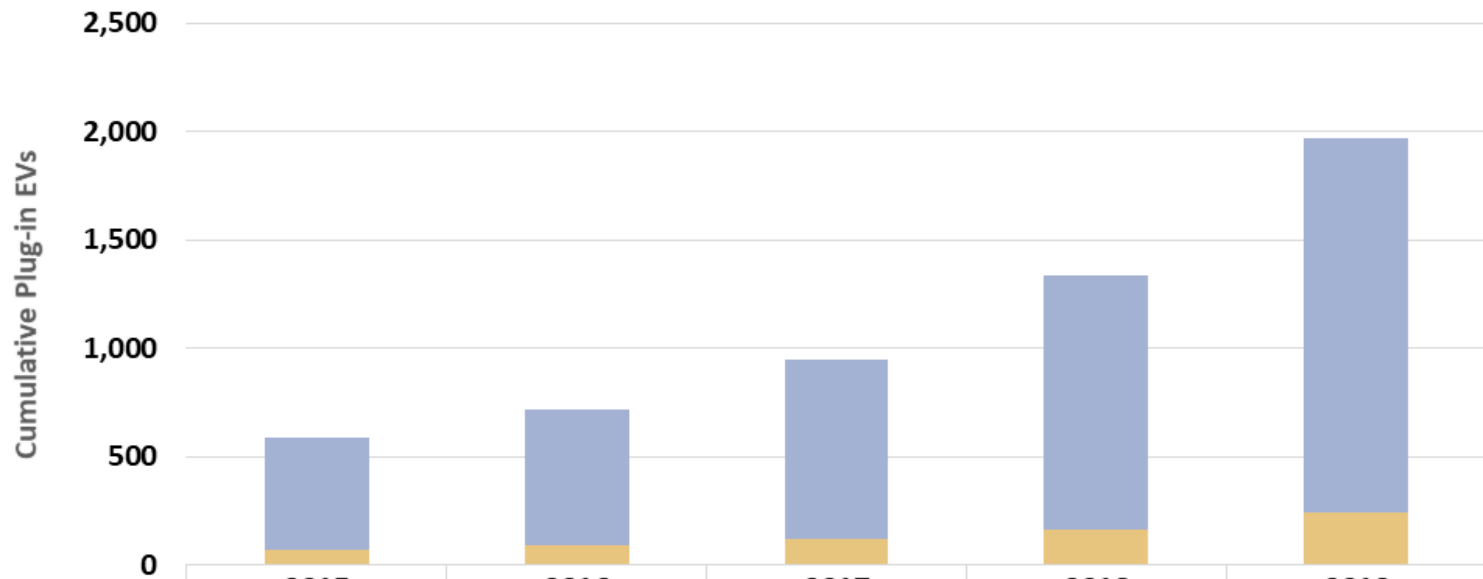


Figure 4: Ratepayer Perspective costs and benefits per EV, without managed charging 2019-2038

# Growing EV Adoption

Registered light-duty PEVs in Avista's Washington and Idaho Service Territories



	2015	2016	2017	2018	2019
■ Avista Territory: Washington	512	628	829	1,171	1,724
■ Avista Territory: Idaho	72	88	116	164	241
Washington State Total Evs	16,579	21,991	27,858	40,323	52,637
Avista YOY % increase		23%	32%	41%	47%
Washington YOY % Increase		33%	27%	45%	34%

# Workplace Charging – A Powerful Catalyst! 200% Growth

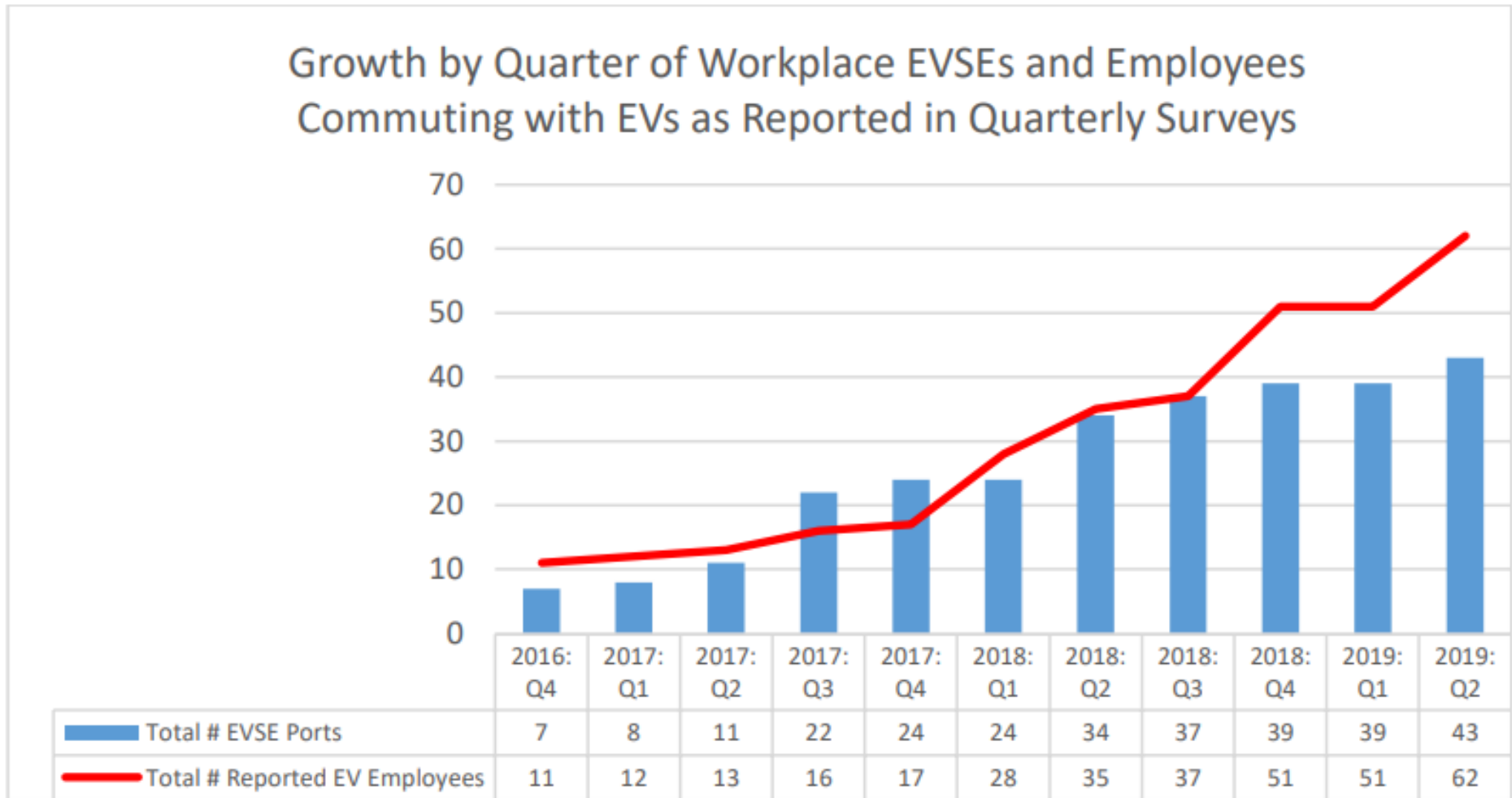


Figure 17. Workplace EVSE and User Growth by Quarter as reported in Quarterly Surveys

# Education & Outreach - Dealer Engagement is Needed

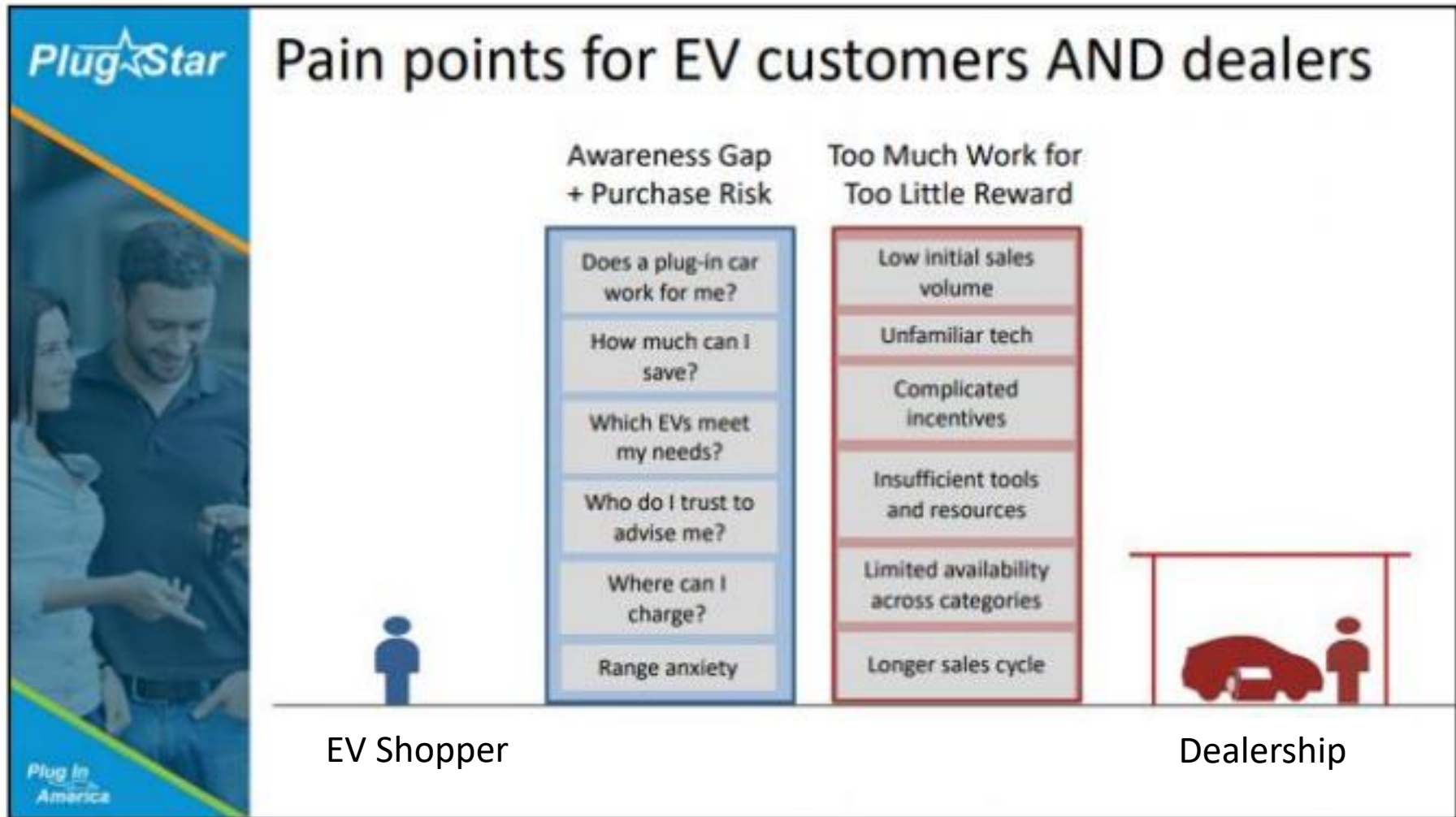


Figure 14: EV Sales Issues (courtesy Plug-In America)

# Direct Benefits for Disadvantaged Communities



- Nissan LEAF & facility charging
- Transport for critical medical appointments
- 82% reduction in transportation costs



- Mitsubishi Outlander & facility charging
- Transport for job skills training, food deliveries and shelter
- 57% reduction in transportation costs



# Key Takeaways

1. Grid impacts are manageable
2. Utility programs can effectively support EV adoption
3. Workplace charging is a powerful catalyst
4. Barriers still remain to EV adoption
5. EVs reduced operating costs for organizations serving low income customers
6. Demand exists for public charging supported by future programs and rate designs
7. Benefits of networked & non-networked EVSE's
8. Load management has strong potential
9. Pilot results validated other EV studies

# Transportation Electrification Plan



**DRIVEN BY ENERGY**

The adoption of EVs by more drivers, like the Avista customer in Spokane shown below, provides Avista with new opportunities. Current technologies enable EVs to achieve energy costs per mile of less than \$1.00 per equivalent gallon of gasoline, while reducing CO<sub>2</sub> and other pollutants by more than 75 percent. Avista has initiated a two-year pilot program by offering installation of 120 residential EV charging stations.



1. Education & Outreach
2. Community & Equity
3. Charging Infrastructure
4. Commercial Fleets
5. Rate Design
6. Planning, Load Management & Grid Integration
7. Utility Fleets, Facilities & Employee Engagement