

# Accelerate to Zero (A2Z) Electric Vehicle Strategy

San Diego Gas & Electric Company

Steering Committee Meeting  
May 19, 2022



# Agenda

Introductions

A2Z Existing Conditions  
Summary

Stakeholder  
Engagement Summary

Guiding Principles

Discussion



# Introductions

## A2Z Core Team

Organization	Representative(s)
San Diego Gas and Electric Company (SDG&E)	Corey Permann Robert Iezza
San Diego Association of Governments (SANDAG)	Susan Freedman Jeff Hoyos Samaya Elder
County of San Diego	Ricky Williams Tyler Farmer Chad Spoon
San Diego County Air Pollution Control District (APCD)	Kathleen Keehan
City of San Diego	Ellen Kennedy Heather Werner

## Steering Committee

Organization	Role
City of Carlsbad	Review and comment on technical work; provide input on engagement
City of Chula Vista	
City of San Marcos	
City of Santee	
Cleantech San Diego	
Grid Alternatives	
MAAC	
USD Energy Policy Initiatives Center (EPIC)	

## Consultant Team

Organization	Representative(s)
AECOM	Dana Al-Qadi Karen Massey Jessica Sisco Ryan Winn Brendan Connolly Kevin Borja
Energeia	Ezra Beeman Chloe Rust Maggie Riley Min Kyaw





# Existing Conditions Summary

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## Task 2: Existing Conditions – Scope and Approach

- Assess existing conditions and conduct gap analysis
- Review key information regarding policy, regulatory, market and industry environment
- Develop Request for Information (RFI)
- Develop uptake impact tool
- Review current best practice EV strategies
- Develop spatial charging optimization tool (ongoing)

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# Documents Reviewed

## Developments due to Existing Regulations

- Executive Order N-79-20, Sept. 2020
  - CARB, Governor Newsom's Zero Emission by 2035 Executive Order (N-79-20), Jan 2021
- Assembly Bill 2127, 2018
  - CEC, Assembly Bill 2127 Electric Vehicle Charging Infrastructure Assessment (Revised Staff Report), May 2021
- Assembly Bill 8, 2013
  - CARB, Evaluation of Fuel Cell Electric Vehicle Deployment and Hydrogen Fuel Station Network Deployment, Sept. 2021
  - CEC, Joint Agency Staff Report on Assembly Bill 8: 2021 Annual Assessment of Time and Cost Needed to Attain 100 Hydrogen Refueling Stations in California, Dec. 2021

## New Policies and Regulations

- The White House, Infrastructure Investment and Jobs Act, Nov. 2021
- The White House, EV Charging Action Plan, Dec. 2021
- Governor Newsom, The California Blueprint, July 2021
- CPUC, Resolution E-5167, Oct. 2021

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# Documents Reviewed cont.

## Local Plans

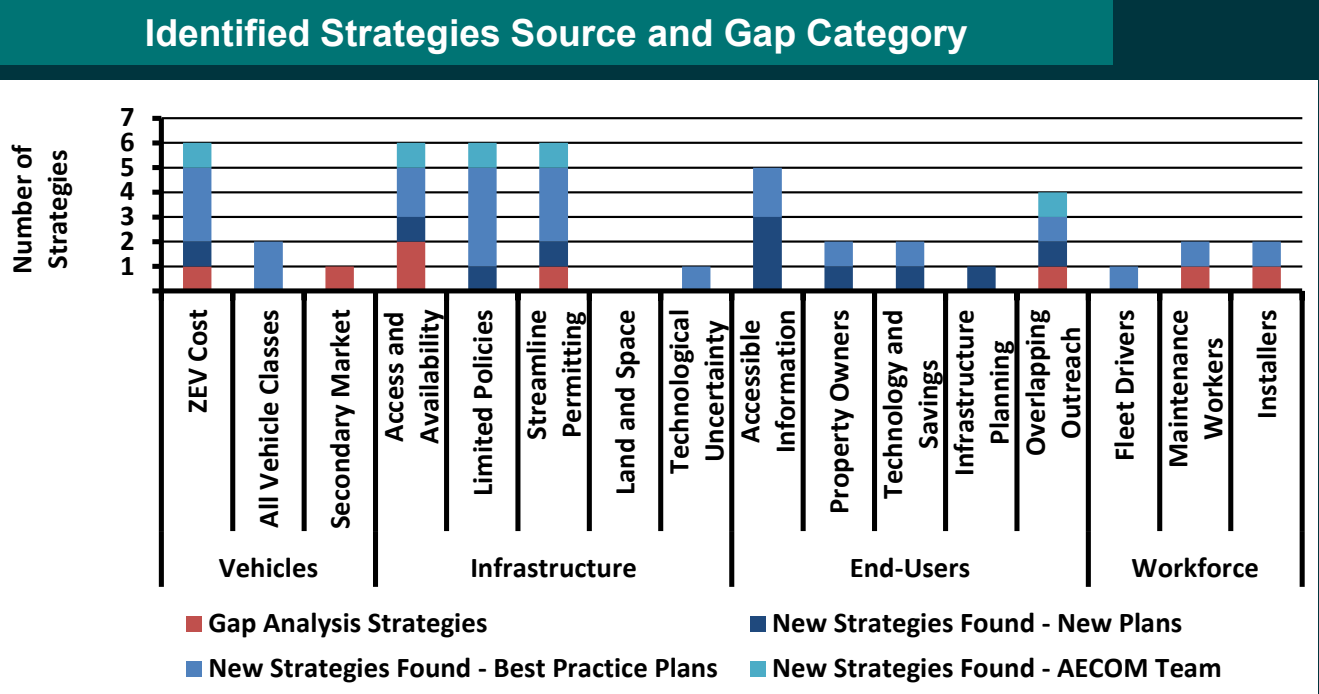
- SDG&E Sustainability Strategy, 2020
- SANDAG Regional Plan, Dec. 2021
- SANDAG Regional Plug-In Electric Vehicle (PEV) Readiness Plan, Jan. 2014
- SANDAG Plug-in San Diego, 2019
- County of San Diego, EV Roadmap, Oct. 2019
- County of San Diego, Regional Decarbonization Framework, 2022
- City of San Diego, Climate Action Plan, 2022

# Identified Barriers

Vehicles	Infrastructure	End-User	Workforce
ZEV cost premium	Gap in access and availability relative to when and where fueling infrastructure is needed	Purchasers need readily available, easy-to-navigate information	ZEV medium and heavy-duty trucks and fleet vehicles are still new and drive differently
Certain vehicle classes are unavailable in ZEVs	Limited policies and mandates	Property owners lack expertise to plan and install charging stations	Vehicle maintenance and service workers need to expand skill sets to work on ZEVs
Secondary ZEV market is small	Lack of streamlined permitting	Adopters need confirmation of technology and advertised savings	Installers of ZEV infrastructure need to be trained
	Limited land and space	Governments require granular vehicle data for infrastructure planning	
	Uncertainty in technology advancements	Confusion from multiple, overlapping stakeholder outreach efforts	



# Strategies Identified



- Recommendations and strategies were identified in Gap Analysis and compared to strategies identified in Existing Conditions review
- New strategies were found from the review of local plans, best practice regional plans, and previous project experience for consideration
- Task 2 identified 38 additional strategies, addressing all but one gap (land and space) identified in the gap analysis
- The list of strategies will be taken forward as part of Task 4 for potential inclusion in the Strategy based on the agreed criteria

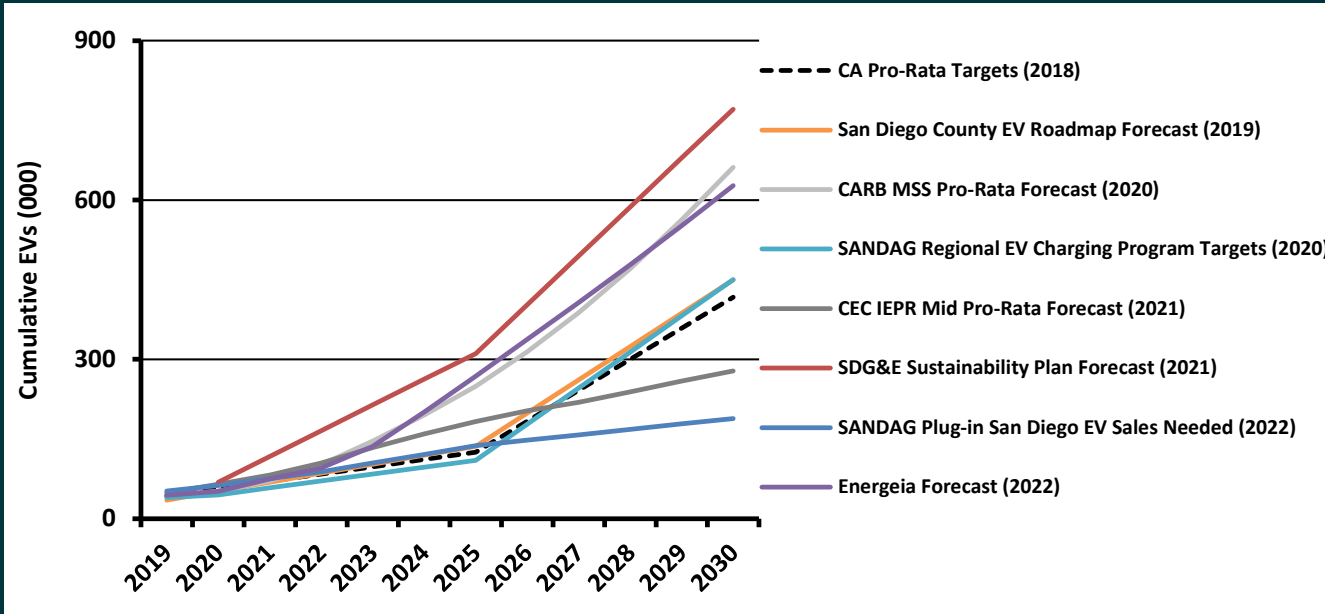
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## Key Findings

- Review of key assumptions in the modeling done to date suggests that the EV charging infrastructure gap will likely be larger than expected, due to the previously assumed linear relationship between EV uptake and EV charging infrastructure needs
- Conversely, the gap for hydrogen fueling stations could be smaller than expected, due to uptake of FCEVs lagging behind PEVs more than previously assumed
- The gap could be smaller than expected as well, due to an assumed constant relationship between FCEV and PEVs; we believe FCEVs will lag PEVs
- Emerging sources of funding, including federal funding, are expected to significantly reduce the public EV charging funding gap
- Additional local programs to educate customers and dealers will support addressing awareness and education barriers; workforce training remains a gap that EV best practices and EV programs are targeting
- Best practice programs also address accelerating vehicle retirements via a cash-for-clunkers offer and target key gaps including vulnerable communities and medium to heavy vehicles

# Updated Uptake Estimate (Draft Results)

Comparison of Uptake Forecasts



- Identified forecasts and local targets of PEV uptake are shown in order of publication
- Energeia's draft PEV forecast, based on San Diego actual market activity to date is also shown
- San Diego is on track to achieve its pro-rata share of the CA targets
- There is a 300,000 gap relative to the A2Z target in 2030, which the strategies will be designed to address
- The model can also inform analysis of shortlisted strategies to identify which is likely to have the greatest impact on adoption





# Stakeholder Engagement Summary

# Phase 1 Engagement Event Summary

Phase 1 of the A2Z Engagement built upon the Regional EV Gap Analysis, which provided a baseline understanding of barriers and opportunities associated with ZEV uptake

- Held at five community events across San Diego County
  - Focused on engagement with communities affected by structural inequities
- Parallel online questionnaire currently live in English and Spanish



# Phase 1 Engagement Event Summary

Region	Event	Date	Time	Approx. # of visitors	Approx. # of people who provided input	Approx. # of participants who spoke Spanish
Central	2022 San Diego Earth Fair, Balboa Park	April 24, 2022	9 am – 5 pm	117	65	0
North	Healthy Kids Day, Mottino Family YMCA, Oceanside	April 30, 2022	9 am – 12 pm	19	16	0
East	Healthy Kids Day, Cameron Family YMCA, Santee	April 30, 2022	10 am – 12 pm	25	19	0
South	Healthy Kids Day, Jackie Robinson YMCA, National City	April 30, 2022	10 am – 12 pm	104	45	10
South	Healthy Kids Day, Border View YMCA, Otay Mesa	April 30, 2022	10 am – 12 pm	90	90	75
			<b>Total</b>	<b>355</b>	<b>235</b>	<b>85</b>



# Central San Diego

## 2022 San Diego Earth Fair at Balboa Park



Date	Time	Approx. # of visitors	Approx. # of people who provided input	Approx. # of participants who spoke Spanish
April 24, 2022	9 am – 5 pm	117	65	0



# North County

## Healthy Kids Day at Mottino Family YMCA, Oceanside



Date	Time	Approx. # of visitors	Approx. # of people who provided input	Approx. # of participants who spoke Spanish
April 30, 2022	9 am – 12 pm	19	16	0



# East County

## Healthy Kids Day at Cameron Family YMCA, Santee



Date	Time	Approx. # of visitors	Approx. # of people who provided input	Approx. # of participants who spoke Spanish
April 30, 2022	10 am – 12 pm	25	19	0



# South County

## Healthy Kids Day at Jackie Robinson YMCA, National City



Date	Time	Approx. # of visitors	Approx. # of people who provided input	Approx. # of participants who spoke Spanish
April 30, 2022	10 am – 12 pm	104	45	10



# Healthy Kids Day at Border View YMCA, Otay Mesa



# Phase 1 Engagement Event Summary

## Key Findings

- **Access to charging** and **costs of an EV** are the most common reasons why people are not purchasing or driving an EV
- Charging stations are desired across each location, with '**Homes**', '**Parks**', and '**Shopping Centers**' receiving slightly more interest
- Participants noted a **lack of opportunities to learn about EVs** and available vehicles
  - Online media sources and word-of-mouth were the most selected areas through which people learned about EVs
  - Most familiarity with hybrid gas-electric vehicles, continued interest in hybrids for some due to lack of range with Battery EVs and other ZEVs
  - Some interest in learning more about hydrogen-powered vehicles and infrastructure
- Most frequently asked questions around **availability/supply chain** of EVs, **costs to charge** an EV



# Phase 1 Engagement Event Summary

## Online Questionnaire

- Qualitative questionnaire designed to help identify initial themes and issues to be explored in subsequent engagement phases
- Questions written to match in-person event boards to allow for analysis across in-person and online input
  - Made available in English and Spanish
  - Phase 1 input will be summarized once questionnaire closes on May 27
- Core Project Team sharing across social media platforms to help encourage participation
- 3 questionnaires completed to-date, no responses to the Spanish questionnaire yet

Accelerate to Zero Emissions (A2Z) Strategy  
*Acelerar a Cero Emisiones (A2Z, por sus siglas en inglés)*

Help us work towards making  
Electric Vehicles accessible for all –  
complete this short questionnaire:

<https://bit.ly/AzZSanDiego>



*Ayúdenos a trabajar para hacer que  
los vehículos eléctricos y de cero  
emisiones sean accesibles para todos  
completando este cuestionario breve:*

<https://bit.ly/AzZSanDiegoSpanish>



For more information on the A2Z Strategy, go to:  
*Para más información sobre la Estrategia A2Z, visite:*  
[www.azzsandiego.com](http://www.azzsandiego.com)



# Guiding Principles

# What is a Guiding Principle and Strategy?

## Core Principles:

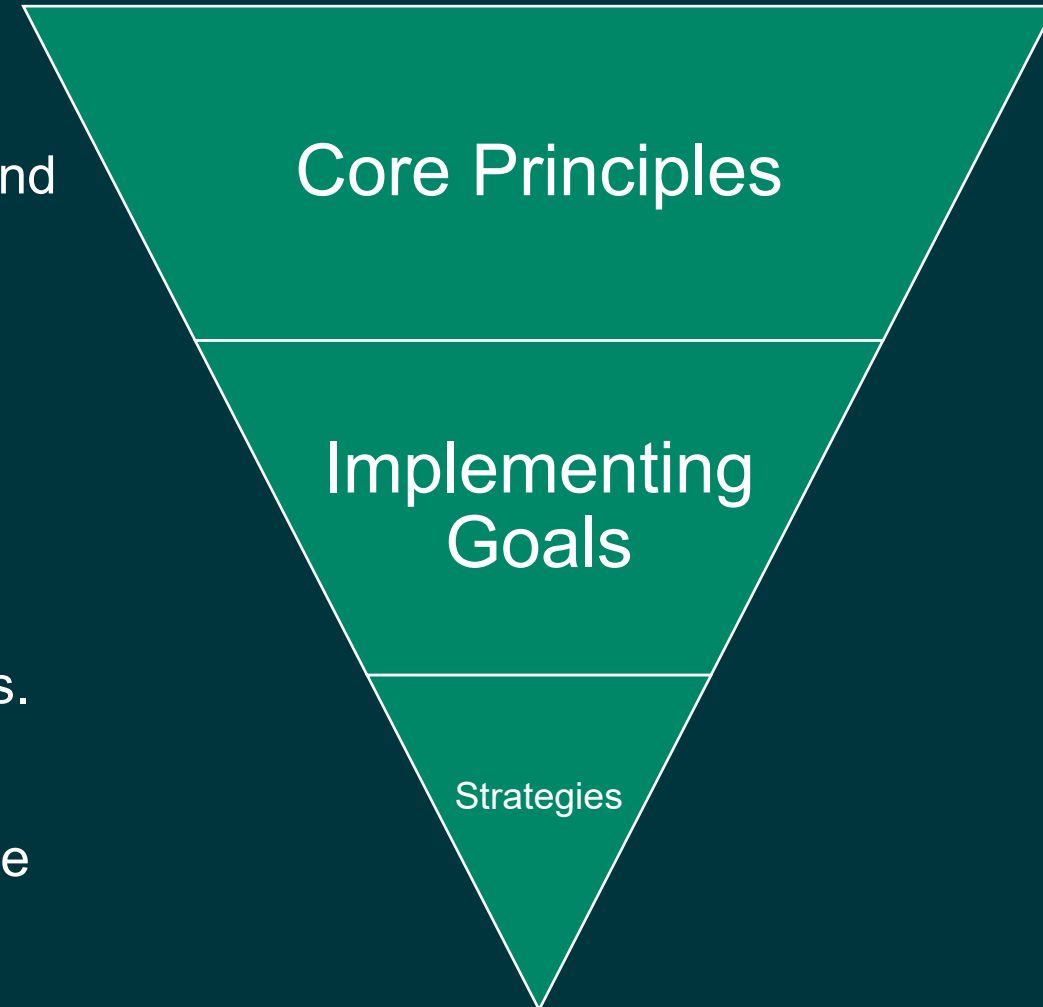
Five principles established by CA to serve as the foundation for decision-making throughout ZEV strategy development and implementation efforts.

## Implementation Goals:

Objectives established as part of A2Z development to influence decisions and shape future strategies.

## Strategies:

Actions taken to achieve one or more Implementation Goals and are consistent with intent and purpose of Core Principles. The role of A2Z Core Team may differ on various strategies and can include a primary leadership role or serving as a supporting stakeholder for other actions. Strategies should be measurable (quantitative or qualitative) as to be compared against other strategies.



# California ZEV Strategy Core Principles

- Equity in every decision
- Embrace all ZEV pathways
- Collective problem solving
- Public complements private
- Design for resilience & adaptation





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## Implementation Goals

Reduce Vehicle  
Emissions

Support  
Education and  
Collaboration

Reduce Barriers  
to ZEV Adoption

Provide  
Equitable  
Access to ZEV  
Infrastructure

Encourage  
Partnerships  
and Attract  
Investments

Innovate Utility  
Operations and  
Service

Enhance Grid  
Resiliency

Promote  
Workforce  
Development

Anticipate  
Future Growth  
and Innovation

## Next Steps



**Thank you.**



# Summary of Strategies Identified (1/2)

Gaps Identified in Gap Analysis	Strategies Identified in Gap Analysis	Strategies Identified from New Plans	Strategies Identified from Best Practice Plans	AECOM Team Best Practice Strategies
<b>Vehicles</b>				
ZEV cost premium	<ul style="list-style-type: none"> <li>Need to lower upfront costs</li> </ul>	<ul style="list-style-type: none"> <li>Create a regional electric vehicle incentive program</li> </ul>	<ul style="list-style-type: none"> <li>Target incentives at vulnerable communities for EVs and public transit</li> <li>Offer feebate programs that incentivize removing ICE vehicles, rebates for EVs</li> <li>Incentivize EV ridesharing</li> </ul>	<ul style="list-style-type: none"> <li>Improve education of PEV technologies and available funding mechanisms to reduce barriers to entry and mitigate public concerns</li> </ul>
Certain vehicle classes are unavailable in ZEVs			<ul style="list-style-type: none"> <li>Target incentives for medium and heavy-duty vehicles</li> </ul>	
Secondary ZEV market is small	<ul style="list-style-type: none"> <li>Incentives should target new and secondary markets</li> </ul>			
<b>Infrastructure Barriers</b>				
Gap in access and availability relative to when and where fueling infrastructure is needed	<ul style="list-style-type: none"> <li>Update and expand existing SANDAG PEV Infrastructure mapping tool</li> <li>Infrastructure should be prioritized in communities of concern</li> </ul>	<ul style="list-style-type: none"> <li>SANDAG Regional Electric Vehicle Charger Program: First-come, first-serve rebate program to lower EVCS installation and purchasing costs</li> </ul>	<ul style="list-style-type: none"> <li>Strengthen partnerships with businesses, organizations, and communities to deploy charging infrastructure</li> <li>Provide public charging in higher density areas and develop anti-displacement strategy</li> </ul>	<ul style="list-style-type: none"> <li>Update building codes to newer versions of CalGreen to expedite charging infrastructure and reduce future improvement costs</li> </ul>
Limited policies and mandates		<ul style="list-style-type: none"> <li>Incentivize and/or require EV charging infrastructure in new and existing private multi-family development</li> </ul>	<ul style="list-style-type: none"> <li>Identify stakeholders to provide policy plans and oversight of infrastructure</li> <li>Require EVSE siting principles</li> <li>Building code amendments to promote EV ready buildings</li> <li>Mandate rewiring for EVSE in new multi-unit developments</li> </ul>	<ul style="list-style-type: none"> <li>Adopt policies across jurisdictions to align the prioritization of electrified transportation</li> </ul>
Lack of streamlined permitting	<ul style="list-style-type: none"> <li>Local governments should implement streamlined permitting requirements</li> </ul>	<ul style="list-style-type: none"> <li>Use pilots to help streamline the permitting process</li> </ul>	<ul style="list-style-type: none"> <li>Develop best practice permit form</li> <li>Streamline EV charger installation process with checklists and guidance</li> <li>Provide online permitting</li> </ul>	<ul style="list-style-type: none"> <li>Streamline permitting processes of charging stations to reduce cost and time of developments</li> </ul>
Limited land and space				
Uncertainty in technology advancements			<ul style="list-style-type: none"> <li>Improve education of PEV technologies</li> </ul>	



# Summary of Strategies Identified (2/2)

Gaps Identified in Gap Analysis	Strategies Identified in Gap Analysis	Strategies Identified from New Plans	Strategies Identified from Best Practice Plans	AECOM Team Best Practice Strategies
<b>End-User Barriers</b>				
Purchasers need readily available, easy-to-navigate information		<ul style="list-style-type: none"> <li>• Increase outreach and engagement</li> <li>• Position EV expert service for success</li> <li>• Solve problems through EV expert service</li> </ul>	<ul style="list-style-type: none"> <li>• Improve education of PEV technologies and available funding mechanisms</li> <li>• Expand community outreach to disadvantaged communities</li> </ul>	
Property owners lack expertise to plan and install charging stations		<ul style="list-style-type: none"> <li>• Fund EV expert/consumer advocate as a regional resource</li> </ul>	<ul style="list-style-type: none"> <li>• Outreach to property managers to offer multi-unit development options</li> </ul>	
Adopters need confirmation of technology and advertised savings		<ul style="list-style-type: none"> <li>• Fund EV expert/consumer advocate as a regional resource</li> </ul>	<ul style="list-style-type: none"> <li>• Seek funding for EV/EVI awareness</li> </ul>	
Governments require granular vehicle data for infrastructure planning		<ul style="list-style-type: none"> <li>• Fund EV expert/consumer advocate as a regional resource</li> </ul>		
Confusion from multiple, overlapping stakeholder outreach efforts	<ul style="list-style-type: none"> <li>• Education campaigns should be coordinated across region to maximize impact</li> </ul>	<ul style="list-style-type: none"> <li>• A2Z Collaboration efforts</li> </ul>	<ul style="list-style-type: none"> <li>• Enhance collaboration between stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>• Enhance collaboration between stakeholders such as private developers, utilities, and other jurisdictions or government agencies to improve planning and identify barriers early in the process</li> </ul>
<b>Workforce Barriers</b>				
ZEV medium and heavy-duty trucks and fleet vehicles are still new and drive differently			<ul style="list-style-type: none"> <li>• Develop education and outreach campaign for large fleet owners</li> </ul>	
Vehicle maintenance and service workers need to expand skill sets to work on ZEVs	<ul style="list-style-type: none"> <li>• Partner with original equipment manufacturers and local maintenance shops</li> </ul>		<ul style="list-style-type: none"> <li>• Develop regional EVI task force to share best practices and track metrics</li> </ul>	
Installers of ZEV infrastructure need to be trained	<ul style="list-style-type: none"> <li>• Electric Vehicle Infrastructure Training Program (EVITP) provides training and certification programs</li> </ul>		<ul style="list-style-type: none"> <li>• Provide regional EV workforce development training</li> </ul>	