Clark County Transportation Electrification Working Group

Oct. 6, 2022

AGENDA

1. TEWG Members
2. TEWG Update
3. Model EV Infrastructure Ordinance Review
4. Clark County Clean Cities Goals
5. Q&A: Public and Interested Parties
6. Next Steps

Ford F-150 Lightning

TEWG MEMBERS

MEMBERS

- CHISPA
- City of Boulder City
- City of Henderson
- City of Las Vegas
- City of North Las Vegas
- Clark County
- Clark County School District
- NAIOP
- NV Climate Initiative
- NV Department of Transportation
- NV Division of Environmental Protection
- NV Energy
- NV Governor's Office of Energy
- NV Resort Association
- NV State Apartment Association
- Regional Transportation Commission
- Southern NV Water Authority
- Southern NV Home Builders Association
- Southwest Energy Efficiency Project
- The Electrification Coalition
- Western Resources Advocates

Questions?

Post questions in the chat or raise your hand.

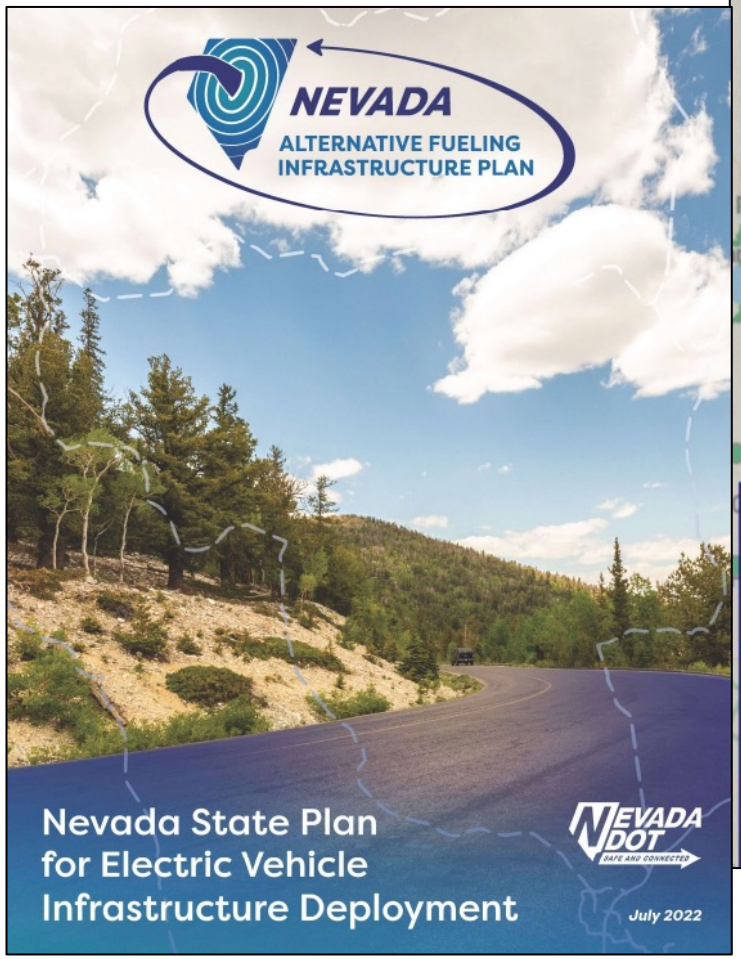
Time reserved for Q&A and discussion.

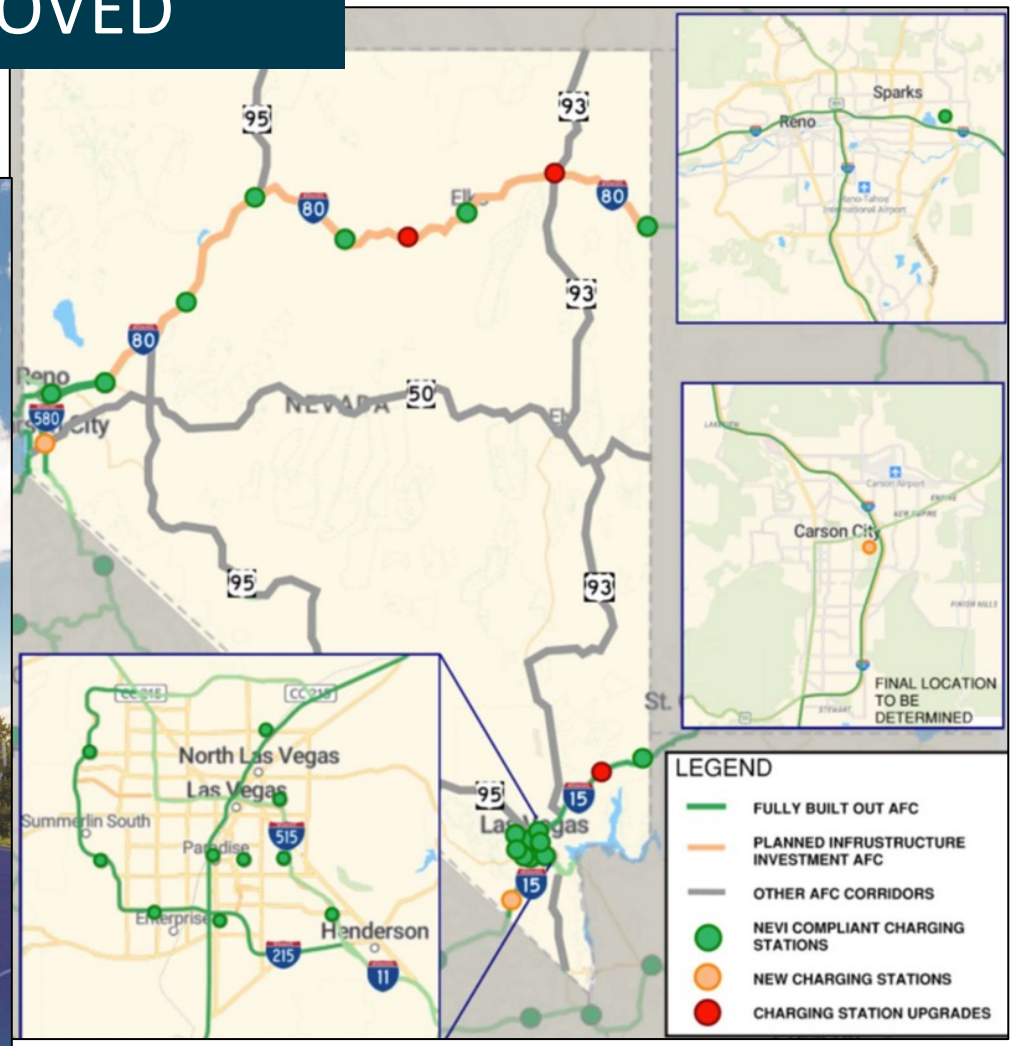
Rivian R1T

TEWG UPDATE

April Bolduc
S Curve Strategies

NV DOT PLAN APPROVED



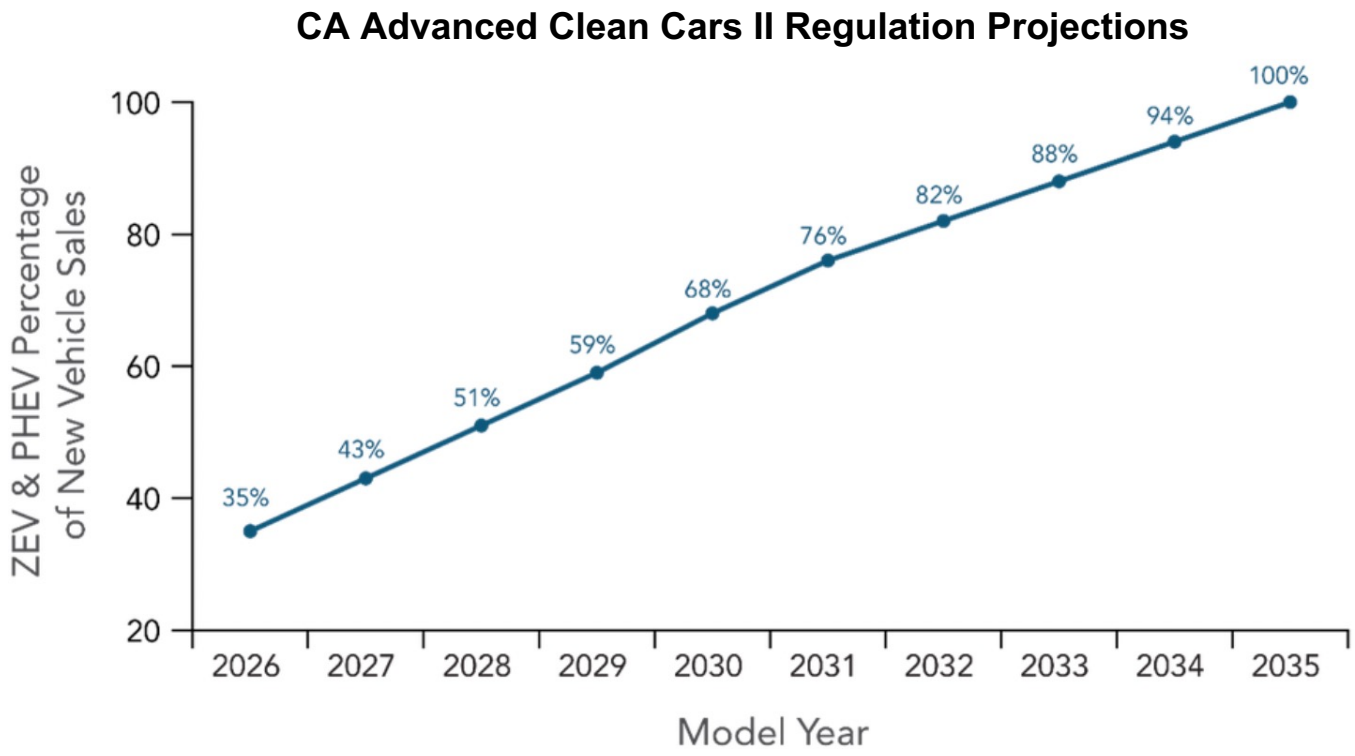


- $38M
- Charging on highway Alternative Fuel Corridors
- Clark County:
  - Upgrade at Moapa to increase fast charge ports
  - New stations at Jean and Primm
- TEWG members participated

Source: NV DOT
https://www.dot.nv.gov/home/showdocument?id=20723&t=637947099699793521

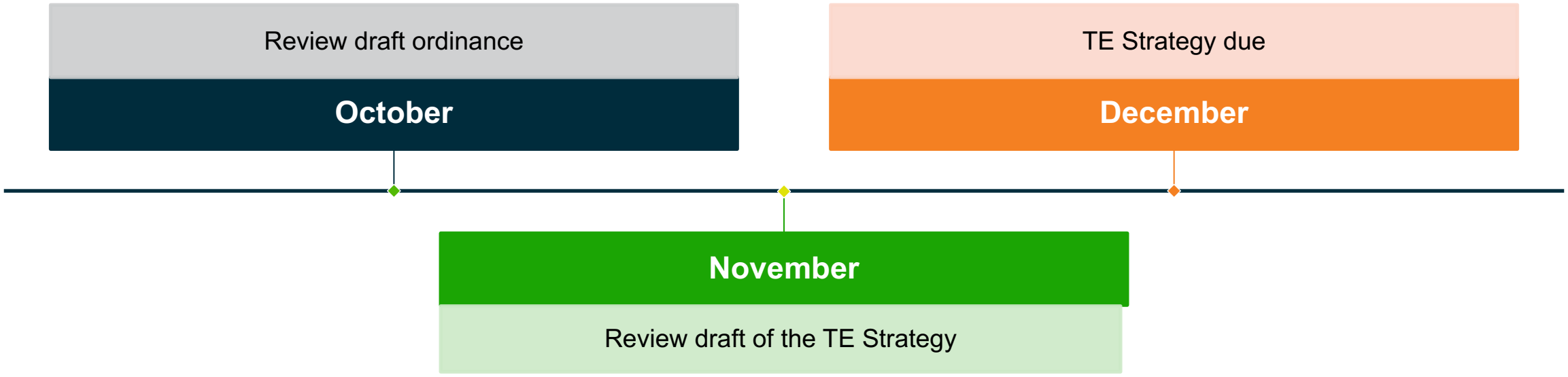
OTHER STATE ANNOUNCEMENTS

- NY will take regulatory action to phase out the sale of new gasoline, light-duty vehicles by 2035
- Joins growing cohort of states considering the policy since approval of CA new Advanced Clean Cars II regulation
- Bans the sale of new gasoline vehicles by 2035
- Used gasoline vehicles may still be sold



Source: CA Air Resources Board

TEWG TIMELINE



TE STRATEGY RECOMMENDATIONS

- Current and future projected EV adoption (COMPLETE)
- Projected charging demand for public charging, multifamily, single family, workplace, and historically-underserved communities (COMPLETE)
- Existing EV infrastructure, development needs, and installation planning (COMPLETE)
- A model EV infrastructure ordinance and the costs associated with such an ordinance (IN PROGRESS)
- PUCN recommendation – review NV Energy TE Plan (IN PROGRESS)
- Economic and workforce development efforts (COMPLETE)
- Who will oversee actionable EV goals in local governments (IN PROGRESS)
- Clark County Clean Cities Coalition goals (IN PROGRESS)

EV ROAD TRIPPING

Randy Schimka
S Curve Strategies

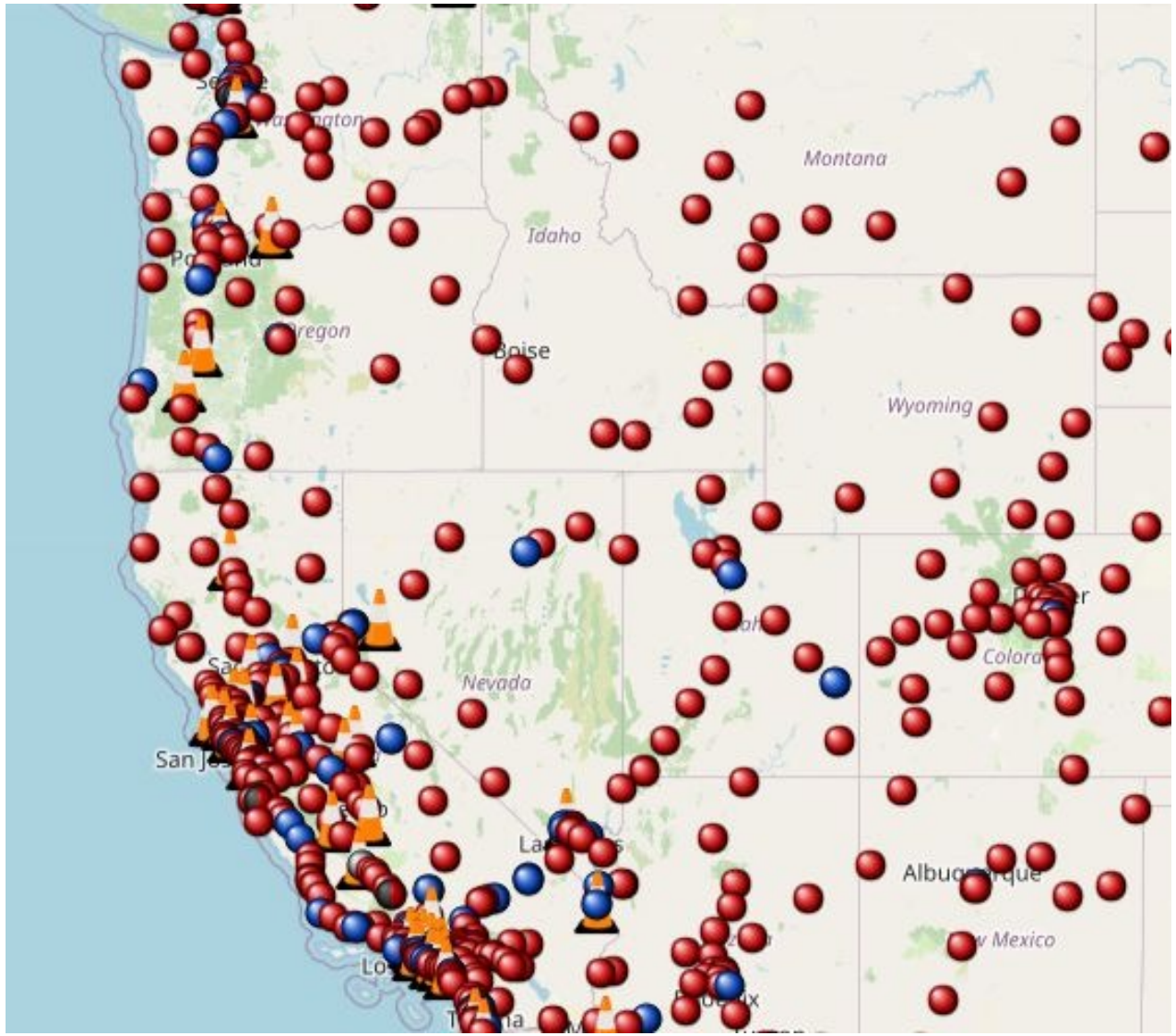
EV ROAD TRIPPING

- Randy's October 2022 All-electric Road Trip
- 2018 Tesla Model 3 Performance
- 275-mile range
- Leaving Las Vegas tonight, heading to Mead, WA (1,167 miles)

2018 Tesla Model 3

TESLA SUPERCHARGERS

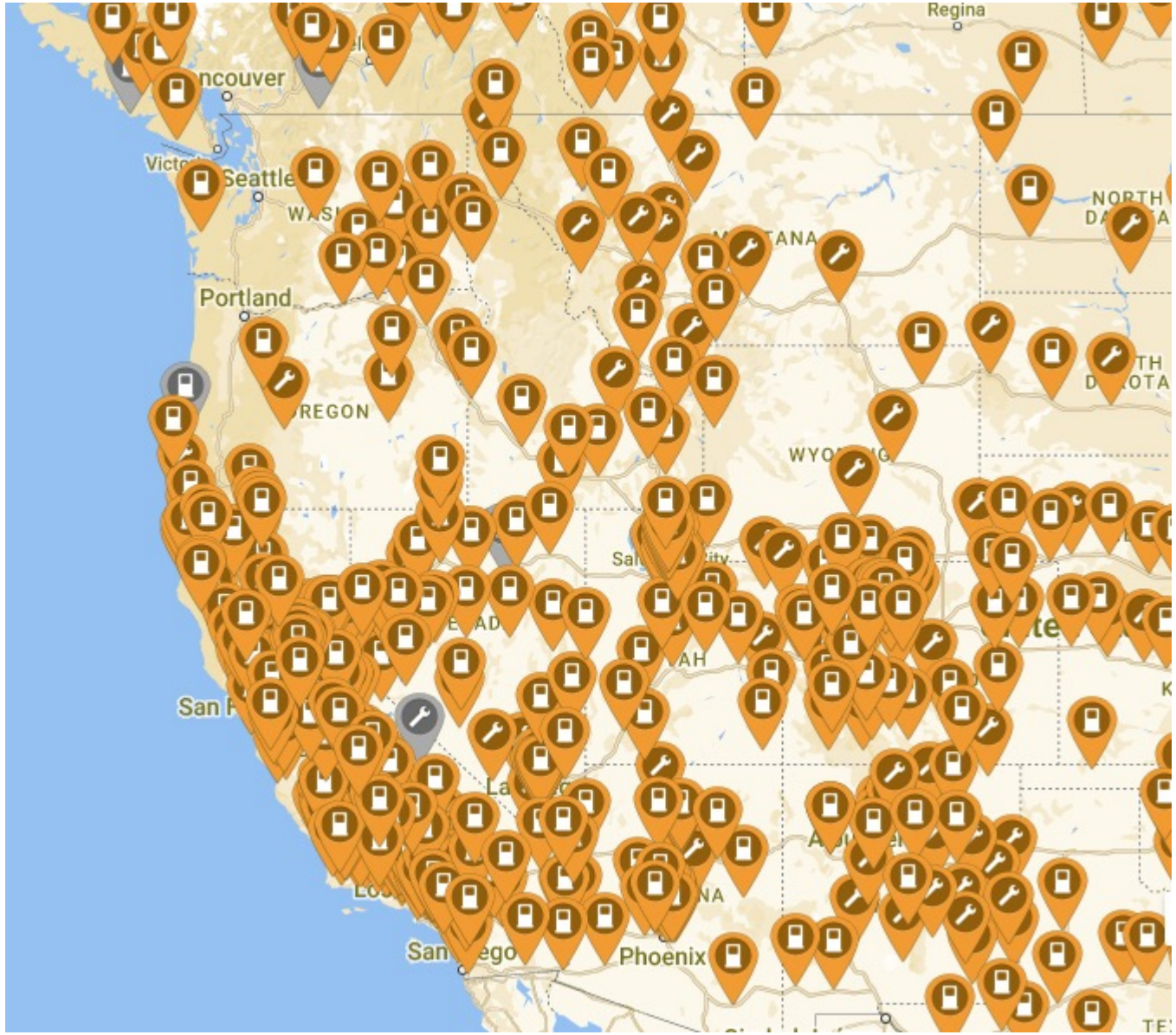
- Current Tesla Supercharger map
- Red = Installed (1,509 Sites in US)
- Traffic Cone = Construction (111 Sites)
- Blue = Permit Issued (208 Sites)



Supercharge.info website

OTHER FAST CHARGERS

- Current map from Plugshare website
- CCS and Chademo plugs



Plugshare website

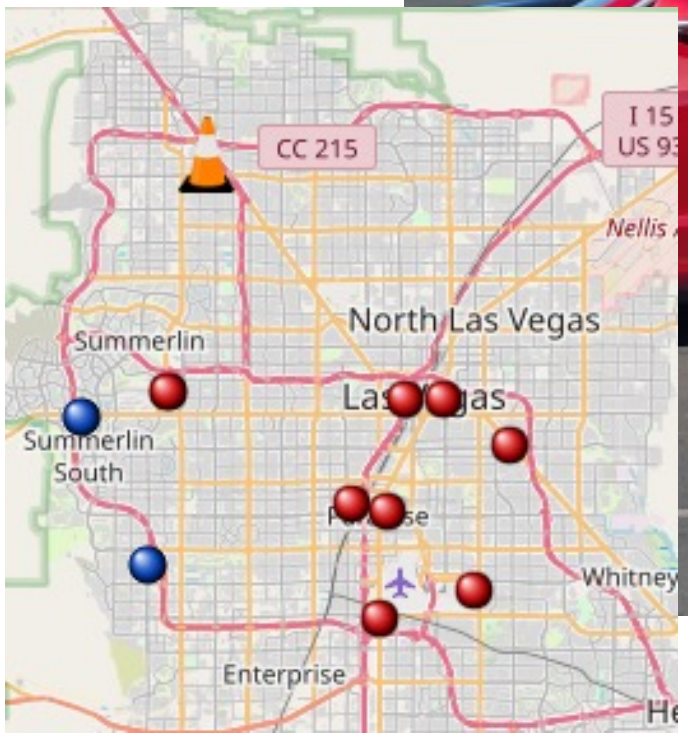
YERMO CHARGING

- 18 150 kW supercharger stalls
- 4 extra temporary 72 kW stalls

Eddie World in Yermo, CA

CHARGING IN LAS VEGAS

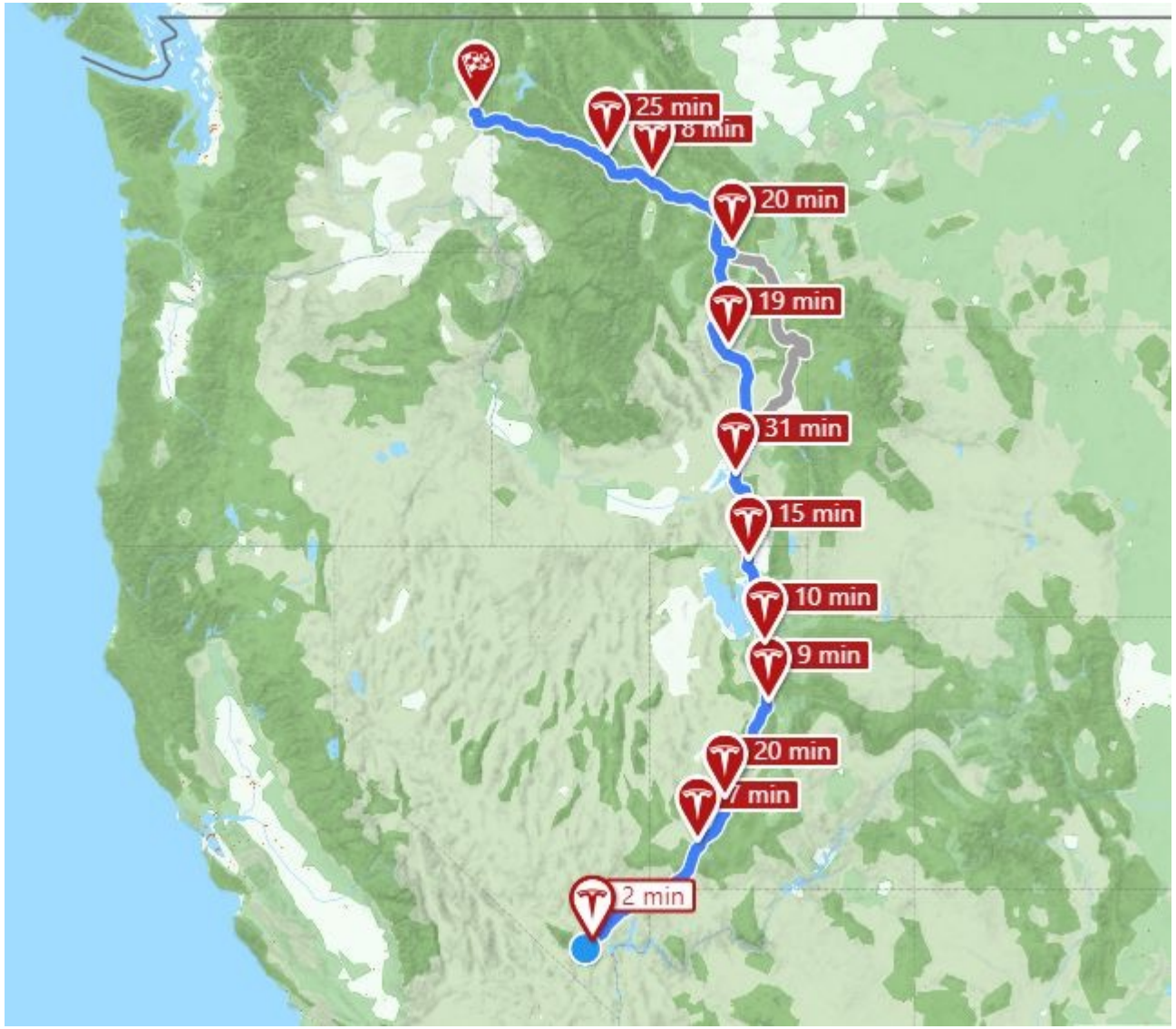
- 10 stalls full
- More coming



From Supercharge.info website

VEGAS TO MEAD, WA

- Using A Better Route Planner
- 1,167 miles
- 11 charging stops
- Some are just a few minutes, may skip



From ABetterRoutePlanner.com website

MODEL EV INFRASTRUCTURE ORDINANCE REVIEW

April Bolduc
S Curve Strategies

WHY AN ORDIANCE?

1. Prepare for growth of EV market
2. Meet state goals of net zero by 2050 to improve air quality and reduce GHG emissions
3. EV drivers want to charge at home, work, and where they visit
4. Automakers and local dealers are transitioning to electric
5. Equity is critical -- low-income households have longer commutes, need reliable charging
6. Retrofits are expensive

NV Energy charging.

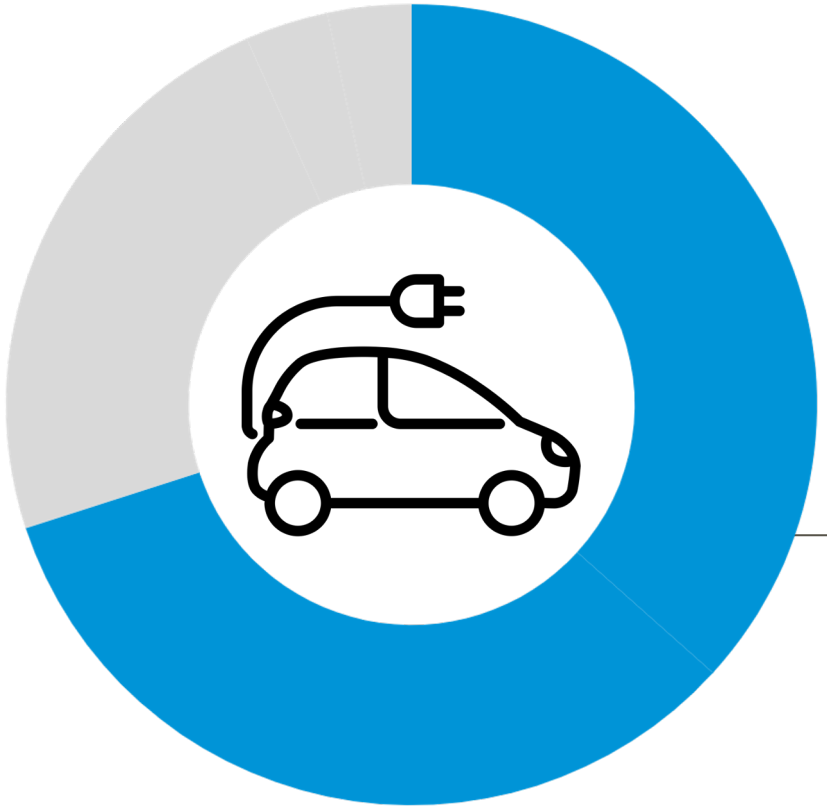
EXPENSE OF RETROFITS

EV Infrastructure Requirement	During New Construction	During Retrofit	Savings
EV-Capable (panel capacity + raceway)	$300 per space	$2,500 per space	$2,200 per space
EV-Ready (full circuit)	$1,300 per space	$6,300 per space	$5,000 per space

Source: Denver EV charging building code proposal

TE WORKING GROUP FEEDBACK

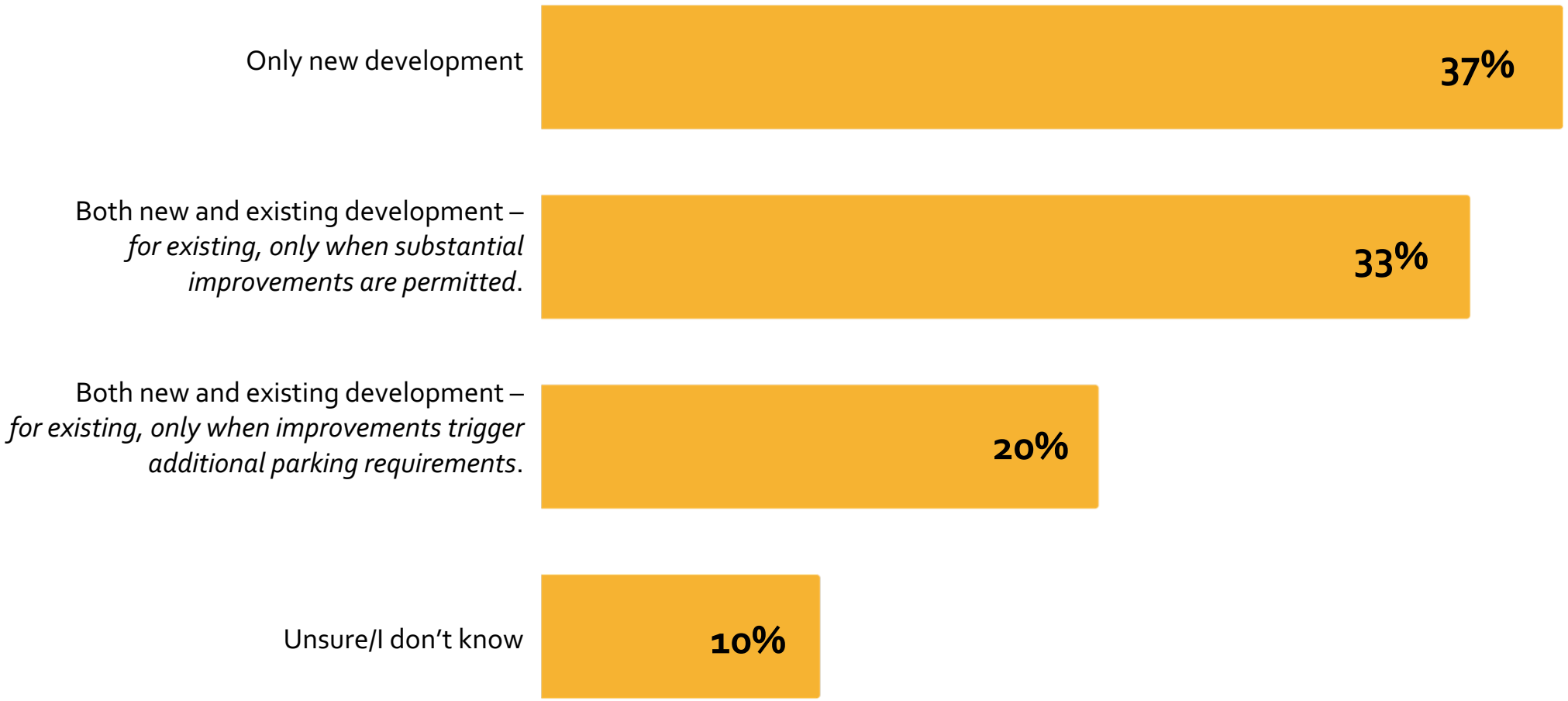
Do you agree or disagree that Clark County and the region's Cities **should adopt an electric vehicle (EV) charging infrastructure ordinance** to meet the growing demand of EVs?



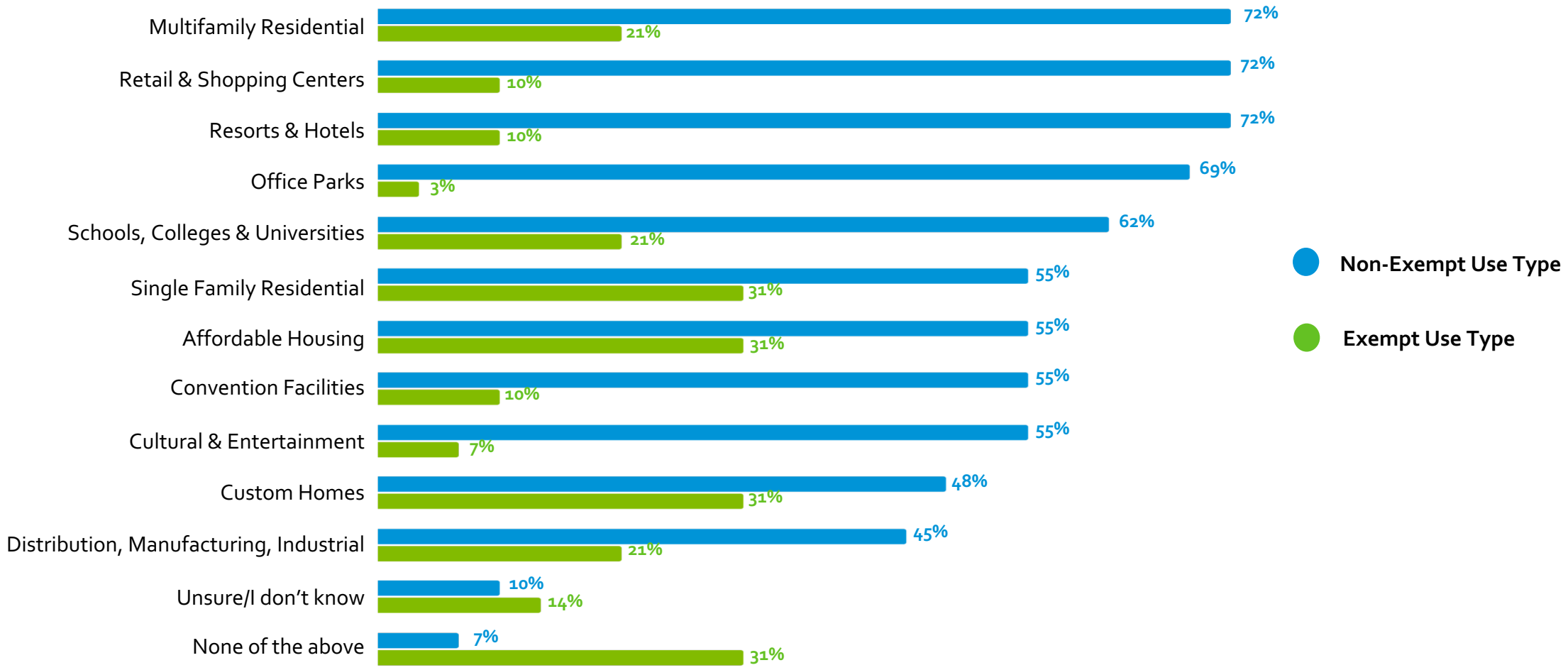
70% of respondents **strongly agree** or **somewhat agree.**

SHOULD APPLY TO NEW DEVELOPMENT

If an ordinance is enacted, should it apply only to **new development or to both new and existing development**?

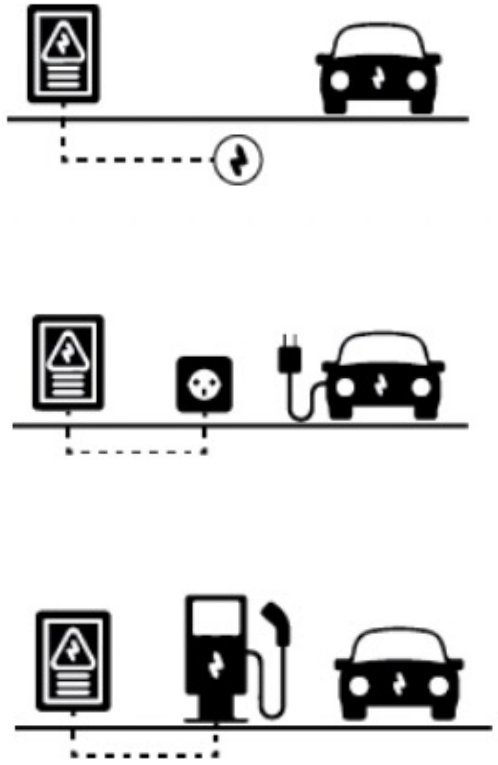


NO LAND USE TYPES EXEMPT



INFRASTRUCTURE OPTIONS

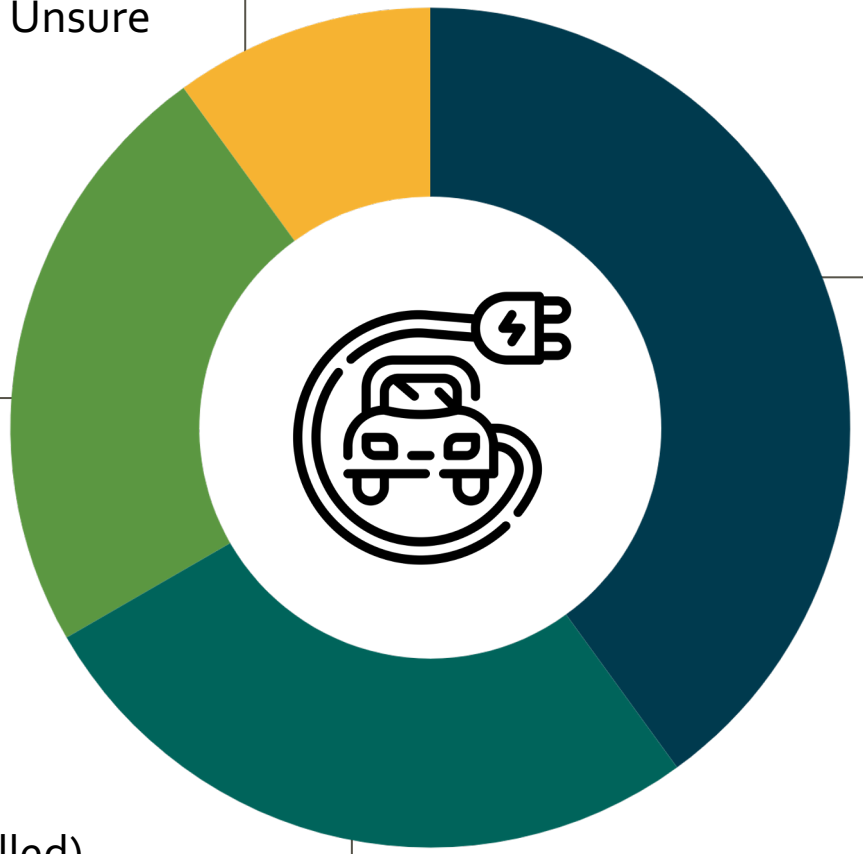
- **EV Capable Parking Space**
  - Electric panel capacity and conduit, no wires
  - Hard-to-retrofit components installed
- **EV Ready Parking Space**
  - Full circuits up to 240-volt outlet installed
- **EV Charger in Parking Space**
  - All + charging station installed



Source: SWEEP: https://www.swenergy.org/transportation/electric-vehicles/building-codes

STANDARD TYPES OF EV CHARGING

Which configuration should the ordinance require?



10%
Unsure

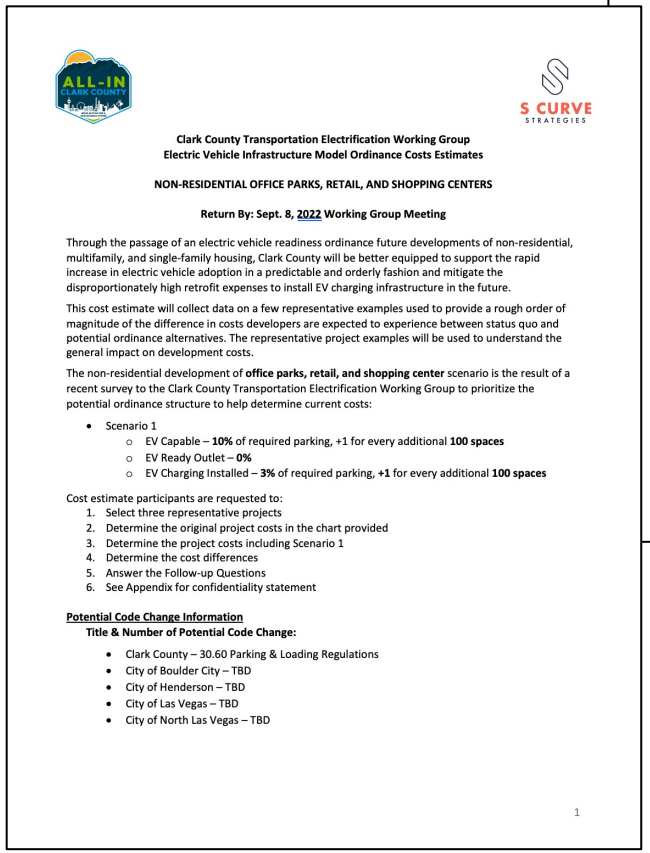
23%
EV Charger Installed

27%
EV Ready
(240-volt plug installed)

40%
EV Capable
(panel capacity + conduit)

COST ESTIMATES REQUESTED

- Requested project cost estimates for different EV charging infrastructure scenarios
- Use type categories
  - Single-family homes *(received estimates)*
  - Distribution, manufacturing, and industrial *(received estimates)*
  - Resorts and hotels, schools, colleges and universities, convention facilities, cultural and entertainment *(most did not have new development projects)*
  - Office parks, retail, and shopping centers
  - Multifamily communities



ALL-IN CLARK COUNTY

S CURVE STRATEGIES

Clark County Transportation Electrification Working Group
Electric Vehicle Infrastructure Model Ordinance Costs Estimates

NON-RESIDENTIAL OFFICE PARKS, RETAIL, AND SHOPPING CENTERS

Return By: Sept. 8, 2022 Working Group Meeting

Through the passage of an electric vehicle readiness ordinance future developments of non-residential, multifamily, and single-family housing, Clark County will be better equipped to support the rapid increase in electric vehicle adoption in a predictable and orderly fashion and mitigate the disproportionately high retrofit expenses to install EV charging infrastructure in the future.

This cost estimate will collect data on a few representative examples used to provide a rough order of magnitude of the difference in costs developers are expected to experience between status quo and potential ordinance alternatives. The representative project examples will be used to understand the general impact on development costs.

The non-residential development of **office parks, retail, and shopping center** scenario is the result of a recent survey to the Clark County Transportation Electrification Working Group to prioritize the potential ordinance structure to help determine current costs:

- Scenario 1
  - EV Capable – **10%** of required parking, +1 for every additional **100 spaces**
  - EV Ready Outlet – **0%**
  - EV Charging Installed – **3%** of required parking, **+1** for every additional **100 spaces**

Cost estimate participants are requested to:

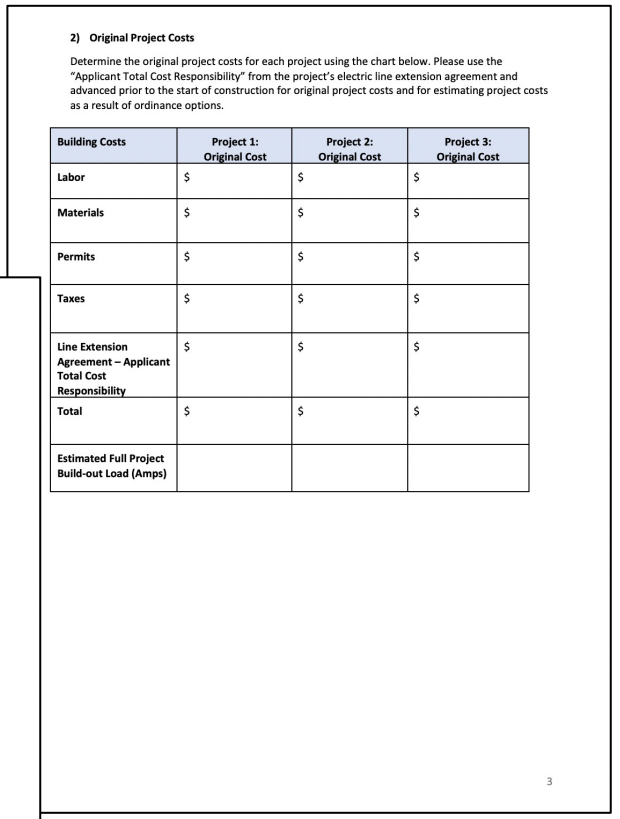
1. Select three representative projects
2. Determine the original project costs in the chart provided
3. Determine the project costs including Scenario 1
4. Determine the cost differences
5. Answer the Follow-up Questions
6. See Appendix for confidentiality statement

Potential Code Change Information

Title & Number of Potential Code Change:

- Clark County – 30.60 Parking & Loading Regulations
- City of Boulder City – TBD
- City of Henderson – TBD
- City of Las Vegas – TBD
- City of North Las Vegas – TBD

1



2) Original Project Costs

Determine the original project costs for each project using the chart below. Please use the "Applicant Total Cost Responsibility" from the project's electric line extension agreement and advanced prior to the start of construction for original project costs and for estimating project costs as a result of ordinance options.

Building Costs	Project 1: Original Cost	Project 2: Original Cost	Project 3: Original Cost
Labor	$	$	$
Materials	$	$	$
Permits	$	$	$
Taxes	$	$	$
Line Extension Agreement – Applicant Total Cost Responsibility	$	$	$
Total	$	$	$
Estimated Full Project Build-out Load (Amps)			

3

SINGLE FAMILY COST ESTIMATES

- Single family home building community provided data
- Selected three 2022 projects with approximately 50, 120 and 150 homes
- Considered two charging infrastructure scenarios
  1. 1 parking space requires a Level 2 Outlet (240-volt)
  2. 1 parking space requires a Level 1 Outlet (120-volt)

- Considered:
  - Original project costs
  - Project costs for scenarios 1 and 2
  - Cost differences for each scenario of original project and charging infrastructure installed
- Considered
  - Labor
  - Materials
  - Permits
  - Taxes
  - Total cost of line extension agreement
  - Estimated full project buildout load in Amps

SINGLE FAMILY RESULTS

LEVEL 2 OUTLET (240-volt)

PROJECT SIZE	120 homes	154 homes	50 homes
% COST DIFFERENCE TO ADD LEVEL 2 OUTLET TO 1 PARKING SPACE	0.66%	0.48%	1.18%
% DIFFERENCE IN AMPS	45%	35%	27%

LEVEL 1 OUTLET (120-volt)

PROJECT SIZE	120 homes	154 homes	50 homes
% COST DIFFERENCE TO ADD LEVEL 1 OUTLET TO 1 PARKING SPACE	0.3%	0.2%	0.56%
% DIFFERENCE IN AMPS	22%	17%	14%

Request by developers to not provide dollar figures.

SINGLE FAMILY FOLLOW UP QUESTIONS

1. Rate the probability that adding EV charging infrastructure requirements will result in construction delays.
    - *Somewhat probable*
    - *Based on current timelines NV Energy has for energizing jobsites and considerations for material delays, if additional on- and off-site infrastructure is needed we could experience significantly delays depending on the geographic area of the parcel.*
2. Rate the likelihood that adding EV charging infrastructure will result is the loss of useable space in a single-family development project.
    - *Not likely*
3. Rate the probability that adding EV charging infrastructure as proposed in the Level 1 and Level 2 scenarios will negatively impact the value of a single-family development.
    - *Not probable*

DISTRIBUTION COST ESTIMATES

- A distribution, manufacturing, and industrial facility developer provided data
- Selected three projects
  - 2021, 330,000 sf
  - 2022, 268,000 sf
  - 2023, 764,000 sf
- Considered one charging infrastructure scenario with three components
  - EV Capable – **5%** of required parking, +1 for every additional **100 spaces**
  - EV Ready Outlet – **0%**
  - EV Charging Installed – **3%** of required parking, **+1** for every additional **100 spaces**
- Considered:
  - Original project costs
  - Project costs for scenarios 1 and 2
  - Cost differences for each scenario of original project and charging infrastructure installed
- Considered
  - Labor
  - Materials
  - Permits
  - Taxes
  - Total cost of line extension agreement
  - Estimated full project buildout load in Amps

DISTRIBUTION RESULTS

- EV Capable – **5%** of required parking, +1 for every additional **100 spaces**
- EV Ready Outlet – **0%**
- EV Charging Installed – **3%** of required parking, **+1** for every additional **100 spaces**

PROJECT SIZE	330,000 sf	268,000 sf	764,000 sf
COST DIFFERENCE OF CHARGING INFRASTRUCTURE SCENARIO	$0.32/sf	$0.42/sf	$0.31/sf
FULL PROJECT BUILD OUT IN AMPS	8,000 peak	12,000 peak	16,000 peak

DISTRIBUTION FOLLOW UP QUESTIONS

1. Rate the probability that adding EV charging infrastructure requirements will result in construction delays.
   - *Somewhat improbable*
2. Rate the likelihood that adding EV charging infrastructure will result is the loss of useable space in a distribution, manufacturing, or industrial development project.
   - *Not likely*
3. Rate the probability that adding EV charging infrastructure as proposed in the Level 1 and Level 2 scenarios will negatively impact the value of a distribution, manufacturing, or industrial development.
   - *Somewhat probable*

DRAFT EV CHARGING INFRASTRUCTURE ORDINANCE

Marci Henson
Clark County

DRAFT ORDINANCE CONSIDERATIONS

- **Applicability**
  - Ordinance requirements apply to new development or any substantial changes that triggers additional parking requirements.
- **General Infrastructure Requirements**
  1. EV Capable – panel capacity plus conduit to parking space
  2. EV Charging Installed – EV charging station installed in parking space
- **Number of Spaces**
  - Parking requirements are intended to provide minimum standards.
  - EV capable and EV installed parking spaces count towards minimum parking space requirements.

DRAFT ORDINANCE CONSIDERATIONS

- **Location**
  - Placement of EV capable and EV installed parking spaces determined by the developer.
- **Accessibility**
  - A minimum of one (1) EV installed parking space is ADA accessible.
- **Signage**
  - Each EV installed space should be reserved for EV parking as indicated with signage.
  - Any sign to denote EV installed parking spaces exempt from the sign code.

DRAFT ORDINANCE

Land Use	Requirement	Applicability
Single Family	One (1) Level 2 outlet (240 volt)	N/A
Multi-Family	20% EV Capable +1 for every additional 25 spaces 3% EV Installed +1 for every additional 25 spaces	25 Parking spaces
Non-Residential – Office Parks, Retail, and Shopping Center	10% EV Capable +1 for every additional 100 spaces 3% EV Installed +1 for every 100 spaces	100 Parking spaces
Non-Residential – Resorts, Hotels, Schools, Colleges/Universities, Convention Facilities, Cultural and Entertainment	25% EV Capable +1 for every additional 50 spaces 7% EV Installed +1 for every 50 spaces	50 Parking Spaces
Non-Residential – Distribution, Manufacturing, and Industrial	5% EV Capable +1 for every additional 100 spaces 3% EV Installed +1 for every additional 100 spaces	100 Parking Spaces

CLEAN CITIES

Nicole Wargo
Clark County

CLARK COUNTY CLEAN CITIES

- First meeting Thursday, October 13, 2:00 p.m. - 3:30 p.m.
- A community to share best practices as we reduce petroleum fuel use and transition to alternative fuel vehicles
- Quarterly stakeholder meetings to exchange ideas
- Monthly educational programming
- Forming an advisory committee to guide Coalition
- RSVP to Nicole Wargo at NicoleWargo@ClarkCountyNV.gov

NEXT STEPS

NEXT STEPS

- Last two meetings virtual
  - Nov. 9
  - Dec. 1, last meeting
- The draft ordinance will be emailed to the TEWG for review on Oct. 10.
  - Email your comments to All-In Clark County at ALLIN@ClarkCountyNV.gov.
- All presentations and recordings of virtual meetings can be found on the County website:
  - Search “Transportation Electrification Working Group”

Rivian R1T

Thank you