

Transportation Electrification Working Group

April 7, 2022



AGENDA

1. Introductions
2. Overview of All-In Clark County Plan – Marci Henson, Clark County
3. Model Ordinance – All
4. Q&A: Public and Interested Parties
5. Next Steps



Credit: NJ Spotlight News

INTRODUCTIONS

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 State Apartment Association
- NV Energy
- NV Resort Association
- Ovation Development
- Regional Transportation Commission
- Southern NV Water Authority
- Southern NV Home Builders Association
- NV Division of Environmental Protection
- NV Climate Initiative
- NV Governor's Office of Energy
- NV Department of Transportation
- Southwest Energy Efficiency Project
- The Electrification Coalition
- Western Resources Advocates



INTERESTED PARTIES

Post questions in the chat or raise your hand.
Time reserved for Q&A and discussion.



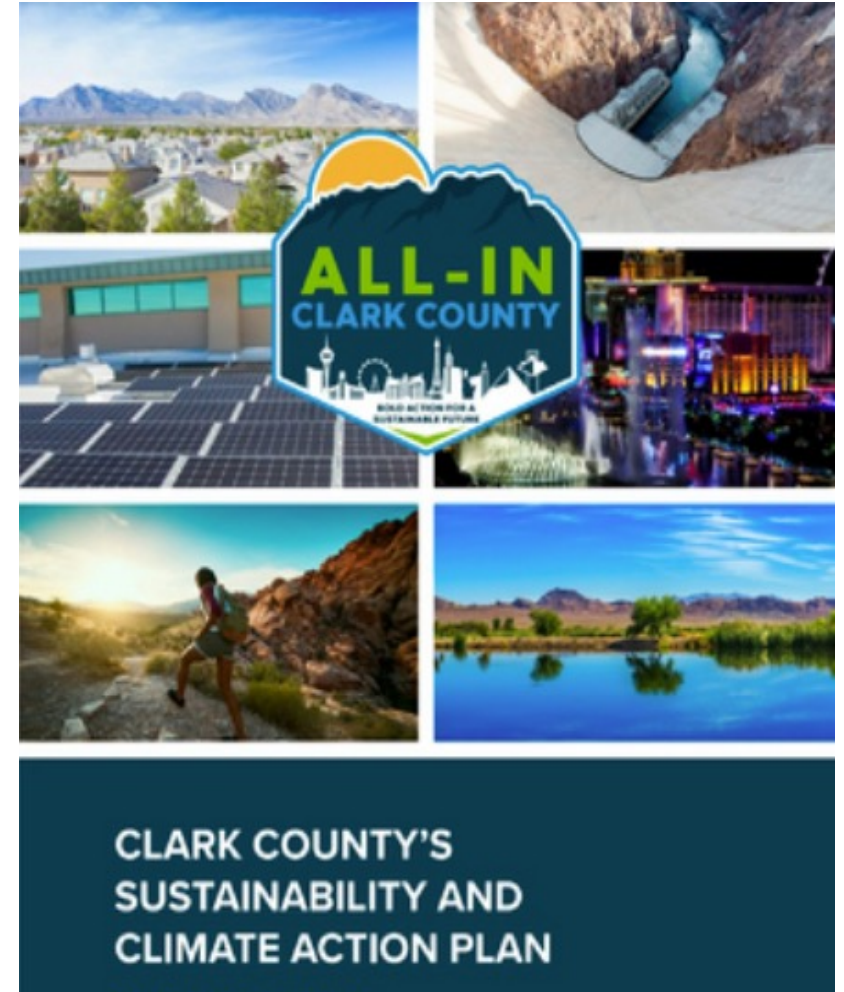
Credit: Jenny Ueberberg

ALL-IN
CLARK COUNTY
SUSTAINABILITY &
CLIMATE ACTION
PLAN

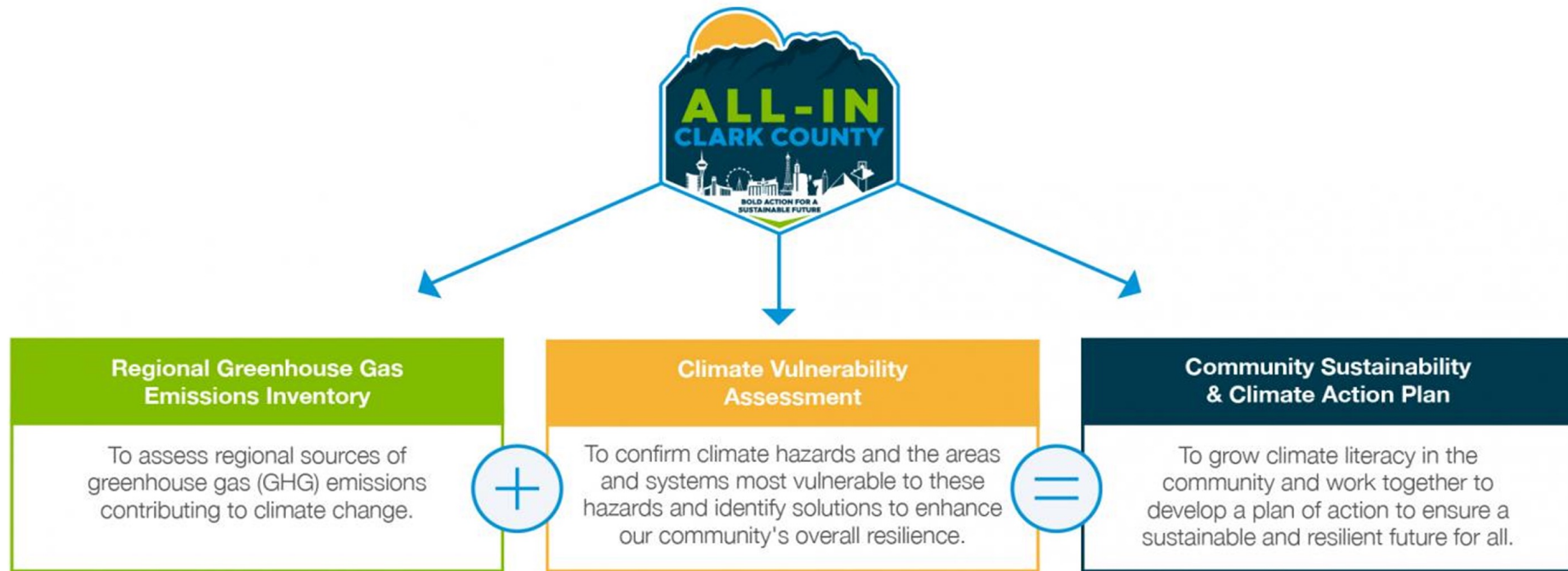
Marci Henson
Director of Environment & Sustainability
Clark County

NV EMISSIONS REDUCTION GOALS

- 28% reduction by 2025
- 45% reduction by 2030
- Net-zero by 2050



PLAN UPDATE



- COMPLETE – Regional Greenhouse Gas Emissions Inventory
- IN DRAFT – Climate Vulnerability Assessment
- UNDERWAY – Community Sustainability & Climate Action Plan

Learn more at plan.allinclarkcounty.com/get-involved.

GOVERNOR'S ANNOUNCEMENT

- On March 31, signed a multi-state agreement
- 17 states plus the District of Columbia
- All new trucks and buses sold will be:
 - 30% zero emission by 2030
 - 100% zero emission by 2050



Gov. Sisolak delivers remarks on multi-state MOU at The Electric Coalition's Clean Trucks Bootcamp on Mar. 31, 2022. Video Link: <https://youtu.be/RMSBdJF7Qqw>

States that signed MOU represent 40% of the U.S. population:

California, Colorado, Connecticut, Hawaii, Maine, Maryland, Massachusetts, New Jersey, New York, Nevada, North Carolina, Oregon, Pennsylvania, Rhode Island, Vermont, Virginia, and Washington.

2023 FOCUS ON MD/HD

- TE Working Group Outcome
 - Develop a Regional Transportation Electrification Strategy
 - as part of the All-In Clark County Sustainability & Climate Initiative
 - Phase 1: 2022 – light-duty
 - Phase 2: 2023 – medium- and heavy-duty



Source: ABB

EV CHARGING MODEL ORDINANCE

April Bolduc
S Curve Strategies

MODEL ORDINANCE DISCUSSION

- At March TEWG meeting, all were invited to participate in meeting to provide input to EV charging model ordinance discussion
- Attendees:
 - City of Henderson
 - City of Las Vegas
 - Howard Hughes/Southern NV Home Builders Association
 - NV Resort Association
- Also provided input:
 - SWEEP
 - Tesla



Source: Las Vegas Review-Journal

DISCUSSION TOPICS

- Why an EV charging ordinance?
- Consider equity
- Ordinance options
- Current ordinances
 - Request case study presentations
- Concerns and possible solutions
- Feedback and next steps



WHY AN ORDINANCE?

1. To grow EV adoption we need EV charging
2. EV drivers want to charge at home, work, and where they visit
 - If an EV driver hasn't asked you yet where to charge...they soon will
 - Most want to charge at home
3. Retrofits are expensive
 - Denver EV charging building code proposal found savings in avoided retrofit costs
4. State goals of net zero
 - Meet need of Clark County EV growth projections
5. Automakers are transitioning to electric
 - Local dealers already preparing for their lots to be a majority electric
6. Equity is critical
 - Low-income households have longer commutes and need reliable charging

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

EQUITY

- Single-family homes – most have access to 120-volt charging
 - Most don't have 240-volt access
- Multi-family communities – most no access to charging
 - Expensive to retrofit
 - Challenge to share charging among drivers overnight
- Low-income families
 - Longer commutes – 50-minute roundtrip average for Clark County*
 - Less expensive EVs with shorter ranges
 - Level 2 = 25+ miles per hour of charge**
 - Level 1 = 4 miles per hour of charge

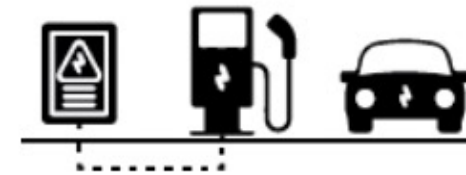
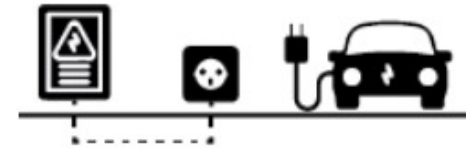
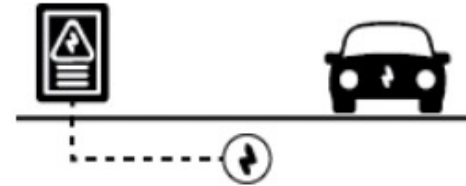


*Source: US Census Bureau: <https://www.census.gov/quickfacts/clarkcountynevada>

**Charging miles depend on charging equipment and car capability.

INFRASTRUCTURE OPTIONS

- EV Capable Parking Space
 - Electrical panel capacity and conduit, no wires
 - Provide hard-to-retrofit elements during new construction while minimizing up-front cost.
- EV Ready Parking Space
 - EV Capable + 240-volt outlet
 - Full circuits are plug ready and minimize total costs and additional barriers to installing charging.
- EV Charging Installed
 - All + charging station installed
 - Provide a visible signal that building supports EV charging and reduce future EV charger installation costs to zero.
- Existing Building Alterations
 - With 50-year lifespan for typical building, could be retrofitted during significant remodel



7 STATEWIDE ORDINANCES IN 2021

- CA – Building standards (<https://afdc.energy.gov/laws/11068>)
- OR – Building standards for new construction (<https://afdc.energy.gov/laws/11941>)
- MD – Charging policies for associations (<https://afdc.energy.gov/laws/12624>)
- NJ – 4 types
 - Charging make-ready requirements for multifamily communities (<https://afdc.energy.gov/laws/12680>)
 - Charging make-ready requirements for new developments (<https://afdc.energy.gov/laws/12679>)
 - Charging policies for condominiums (<https://afdc.energy.gov/laws/12569>)
 - Residential charging policies (<https://afdc.energy.gov/laws/12570>)
- In 2015, WA adopted EV charging building standards for new construction (<https://app.leg.wa.gov/rcw/default.aspx?cite=19.27.540>)

SINCE 2015, 30+ CITY ORDINANCES

- AZ – Flagstaff, Sedona
 - Scottsdale and Tempe in progress
- CA – Oakland, Palo Alto, San Francisco, San Jose
 - Reach codes above state requirements
- CO – 16 cities + 1 in progress
- FL – Orlando (began Jan. 2022)
- GA – Atlanta
- HI – Honolulu
- IL – Chicago
- MO – St. Louis
- UT – Salt Lake City (in progress)
- WA – Seattle
- Washington DC
- WI – Madison

City of Orlando will present at our May Working Group meeting.

CITY ORDINANCE EXAMPLES

Municipality	State	Year	Location	Single-family	Multi-family	Commercial
<u>Atlanta</u>	GA	2017	Code of Ordinances	1 EV-Capable space per dwelling unit	20% EV-Capable	
<u>Chicago</u>	IL	2020	Ordinance	-	20% EV-Ready (5+ spaces)	20% EV-Ready (30+ spaces)
<u>Denver</u>	CO	2020	IBC / IRC	1 EV-Ready space per dwelling unit	5% EV-Installed, 15% EV-Ready, 80% EV-Capable	5% EV-Installed, 10% EV-Ready, 10% EV-Capable
<u>Dillon</u>	CO	2020	IBC / IRC	1 EV-Ready space per dwelling unit	5% EV-Installed, 10% EV-Ready, 40% EV-Capable (10+ spaces)	5% EV-Installed, 10% EV-Ready, 40% EV-Capable (25+ spaces)
<u>Flagstaff</u>	AZ	2019	IBC / IRC	1 EV-Ready space per dwelling unit	3% EV-Ready	3% EV-Ready
<u>Madison</u>	WI	2021	Ordinance	-	2% EV-Installed, 10% EV-Ready (increases by 10% every 5 years)	1% EV-Installed (increases by 1% every 5 years), 10% EV-Ready (increases by 10% every 5 years)
<u>Seattle</u>	WA	2019	Ordinance	1 EV-Ready space per dwelling unit	100% EV-Ready up to 6 space, 20% for parking lots with 7+ spaces	10% EV-Ready
<u>St. Louis</u>	MO	2021	Ordinance	1 EV-Ready space per dwelling unit	2% EV-Installed, 5% EV-Ready (increases to 10% in 2025)	2% EV-Installed, 5% EV-Ready
<u>Summit County</u>	CO	2020	IBC / IRC	1 EV-Ready space per dwelling unit	5% EV-Installed, 10% EV-Ready, 40% EV-Capable (10+ spaces)	5% EV-Installed, 10% EV-Ready, 40% EV-Capable (25+ spaces)
<u>Washington DC</u>	DC	2021	Legislation	-	20% EV-Ready (3+ spaces)	20% EV-Ready (3+ spaces)

MODEL ORDINANCE CONCERNS & POSSIBLE SOLUTIONS

April Bolduc
S Curve Strategies

COST CONCERNS

- Costs to developers of new construction
- Costs to existing building owners to retrofit when permit pulled for remodel
 - This is by far was the largest concern of builders or property owners
- Overall costs of utility upgrades and line extensions
- Some segments already adding charging based on guest need
- \$100M in SB 448 incentive funding may not be enough



EV charging station installation.

POSSIBLE COST SOLUTIONS

- Look to case study best practices of like regions
- Consider phased approach
 - First residential, then later commercial
 - First 10% of parking, with higher percentage in future
 - Tie phases to demand and need
- Develop cost analysis based on real-world, local projects
- Consider in cost analysis
 - Can costs be monetized for least impact?
 - Residential (own vs. lease) and commercial
 - New build and retrofits
 - 10% EV-ready parking vs. 30%
 - Few DC fast chargers vs. numerous Level 2
 - Include materials supplies, labor, overhead vs. status quo
 - Request NV Energy run side-by-side cost analysis to benefit in current electrification analysis effort



City of Orlando code went into effect Jan. 2022 and will present at May 5 meeting.

OTHER POSSIBLE SOLUTIONS

- Governments should align model ordinance efforts as best they can
 - Target zoning code and add to it vs. change it
 - Zoning code first then building code to follow
- Parking
 - Ensure developers/owners are not penalized for reduced parking and can move forward without a waiver request
 - Parking layout to drivers is not quantity, its quality – ensure better job done of parking layouts
 - Charging equipment tends to be installed closest to the power source to minimize costs
 - EV drivers may be OK parking farther if access to charging
 - Review ADA parking requirements and create calculation on standard parking requirements



OTHER POSSIBLE SOLUTIONS

- Better understand NV Energy's
 - TE program approval requirements
 - include makes, models, inspections
 - Timing of changing Rule 9 (line extension rules)
 - If first two properties on block take up all capacity is the next responsible for the substation upgrade?
 - Sept. 1 filing
 - Impacts to energy costs for commercial
 - Capacity problem with increased energy demand
- Equity for rural communities
 - Similar costs to build for Level 1 vs. Level 2
 - Level 2 is preferred for those with longer commutes



OTHER POSSIBLE SOLUTIONS

- Present parking layout examples
 - Unclear how parking lots are impacted by those ordinances requiring 30%+ make-ready
 - Concern is less parking spaces will be available after adding EV charging (particularly with ADA requirements)
 - Ordinance case studies are unclear on if retail charging parking spots were lost



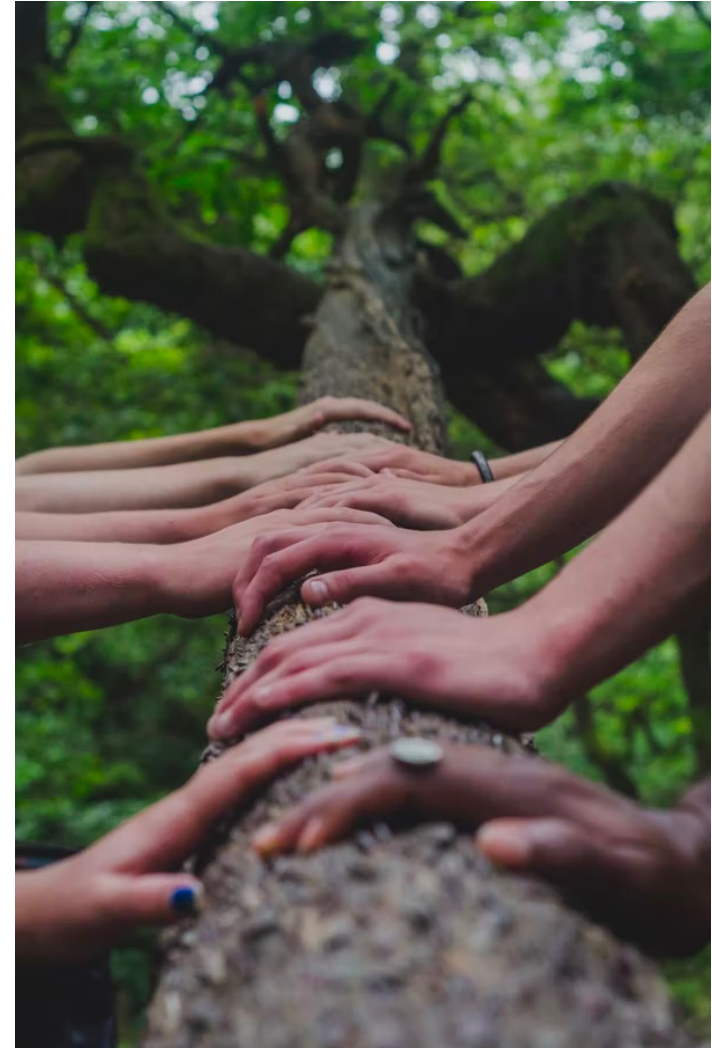
Q&A: PUBLIC & INTERESTED PARTIES

NEXT STEPS



NEXT STEPS

- May 5 TEWG Meeting
 - New City of Orlando EV Charging Ordinance
 - City of Orlando Director of the Office of Sustainability & Resilience Chris Castro
 - Best Practices in Ordinance & Utility Partnering
 - SWEEP Utility Program Manager Caryn Potter
- Ordinance
 - Determine cost analysis
 - Present parking examples
 - Cities gathering information on where ordinances may reside within their building codes



NEXT STEPS

- Clean Cities Coalition
 - Effort to re-establish the designation
 - Clark County Fellow Nicole Wargo leading the effort
 - Steps include:
 - Creating a board
 - Developing a plan for the Department of Energy
 - Interested in participating?
 - Contact: Nicole Wargo at Nicole.Wargo@clarkcountynv.gov



APPENDIX



WORKING GROUP

- Understand TE goals
 - EV and charging
- Discover current TE efforts
 - Survey
- Uncover barriers
 - Working Group, Survey, Discussions
- Provide solutions based on best practices
- Develop a model EV charging infrastructure ordinance
- Develop an equitable strategic plan that will meet goals



Credit: Michael Fousert

WORKING GROUP STRATEGY CORNERSTONE

Project EV demand and the charging infrastructure to support it

- Consider multifamily, single family, public charging, workplace, and underserved communities

Recommendations requested

- Regional EV infrastructure development needs
- Regional EV charging infrastructure installation planning
- Model EV charging infrastructure ordinance, costs and how costs are distributed
- Strategies for funding
- Input to the Nevada Public Utilities Commission
- Economic and workforce development opportunities
- Where EV goals will be housed by government collaborators and transformed into actionable policies and programs