Clark County Transportation Electrification Working Group

July 7, 2022

AGENDA

1. Introductions
2. Working Group Update
3. Ordinance Cost Estimate Survey
4. Ordinance Cost Estimate Templates
5. Q&A: Public and Interested Parties
6. Next Steps

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 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.

SURVEY RESULTS

April Bolduc
S Curve Strategies

THANK YOU RESPONDENTS

S CURVE STRATEGIES

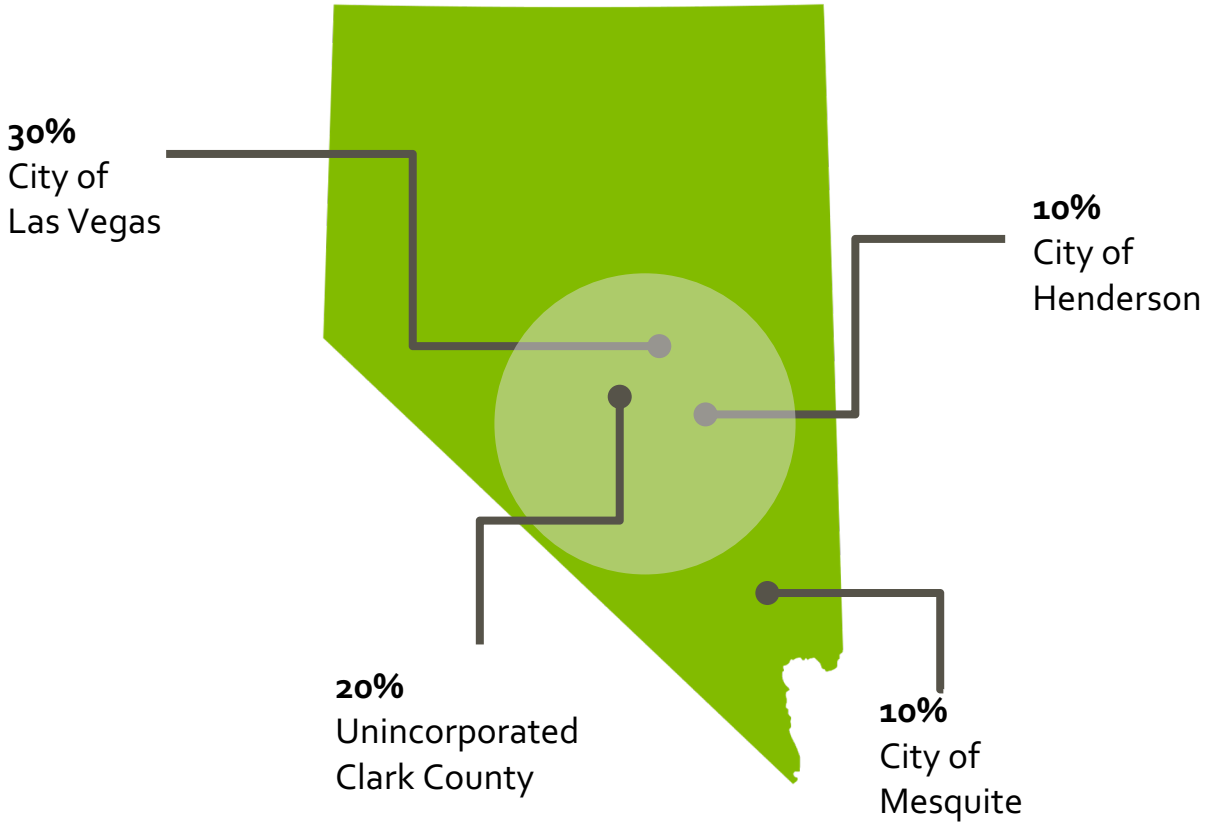
Century Communities
City of Henderson
City of Las Vegas
City of Mesquite
City of Reno
Clark County
Clark County School District
D. R. Horton
Ennovara
Majestic Realty Co.
Nevada Department of Transportation
Nevada Resort Association
Nevada Franchised Auto Dealers Association
Penn National Gaming
Pinnacle Homes
Regional Transportation Commission
Renewable Envoy
Resorts World Las Vegas
Signature Homes
Southern Nevada Home Builders Assn
Southern Nevada Water Authority
Southwest Energy Efficiency Project
Toll Brothers
Washoe County Air Quality Management Division

Survey sent 2x to all Clark County TEWG members and interested parties.
It was shared by members to their groups as well.

Of the 30 respondents, a few did not list their organization, and a few had two people from their organization respond. One came in after the deadline.

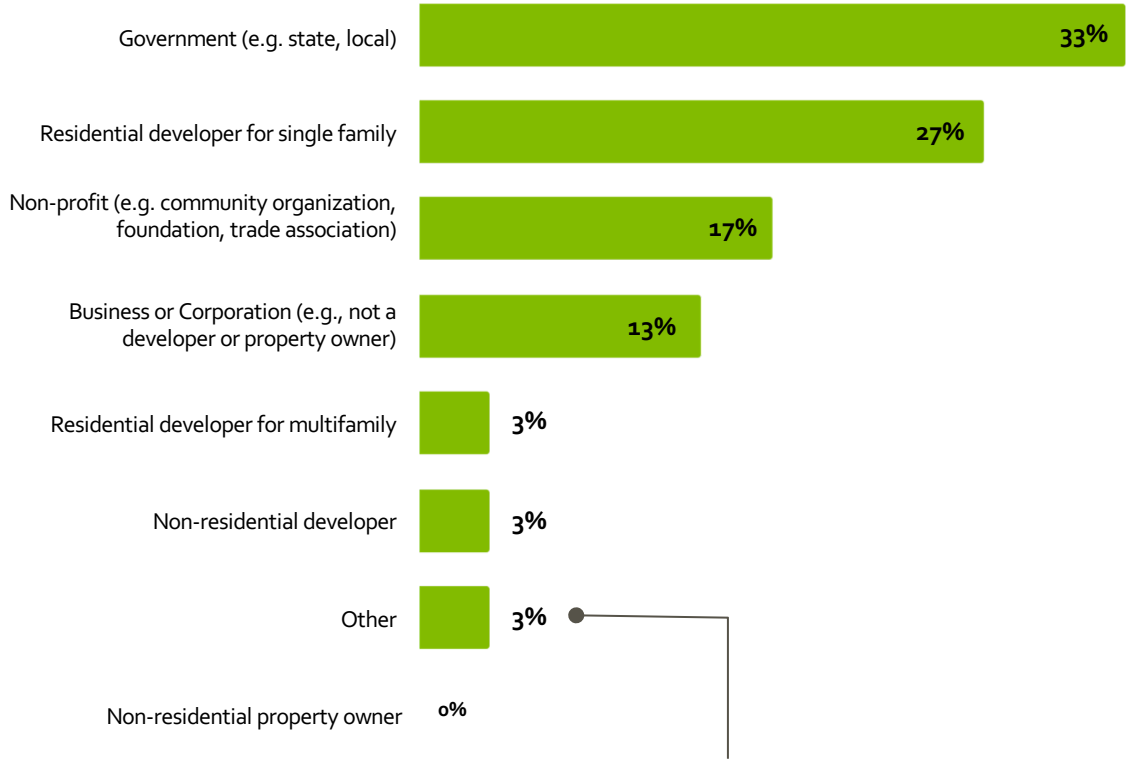
BACKGROUND

Which city is your organization located in?



***37%** Other: State, regional, more than one Clark County City, or another County or city.*

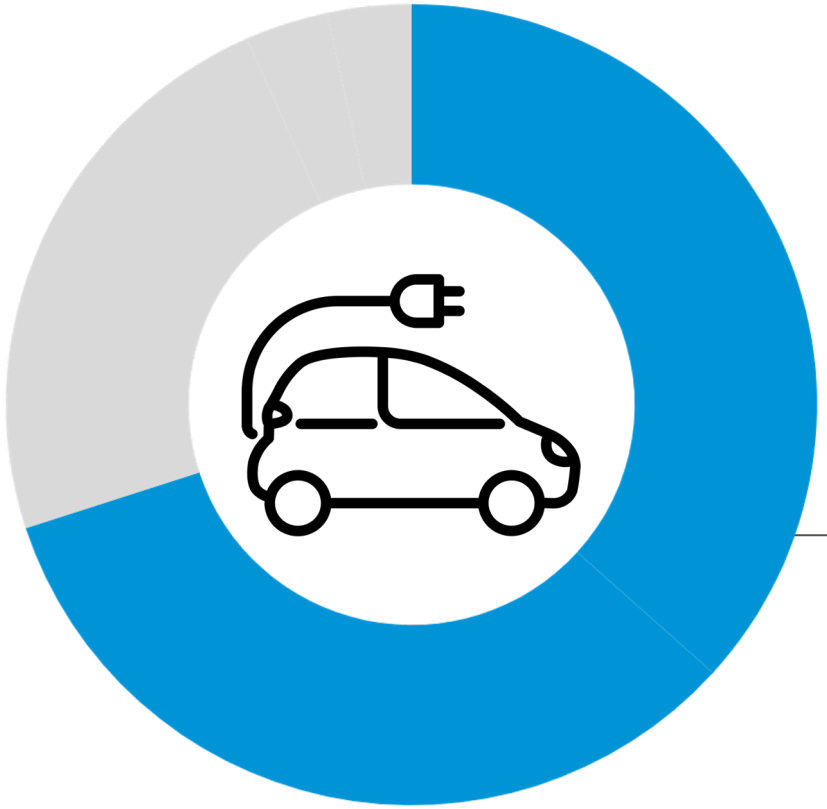
Which of the following best describes your organization?



Other: Residential single and multi family developer

LEVEL OF AGREEMENT

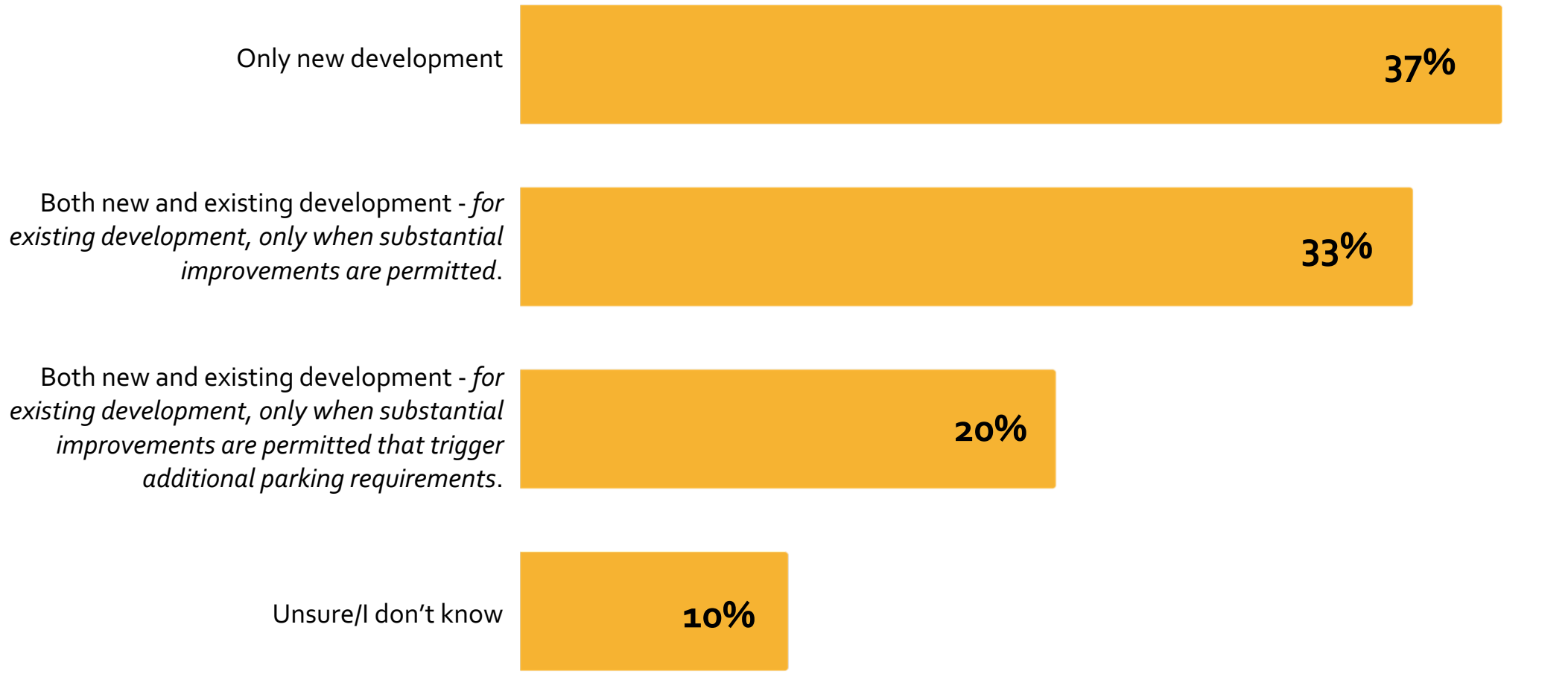
Do you agree or disagree that Clark County and the region's Cities **should adopt an electric vehicle (EV) charging infrastructure ordinance** to meet the growing demand of EVs?



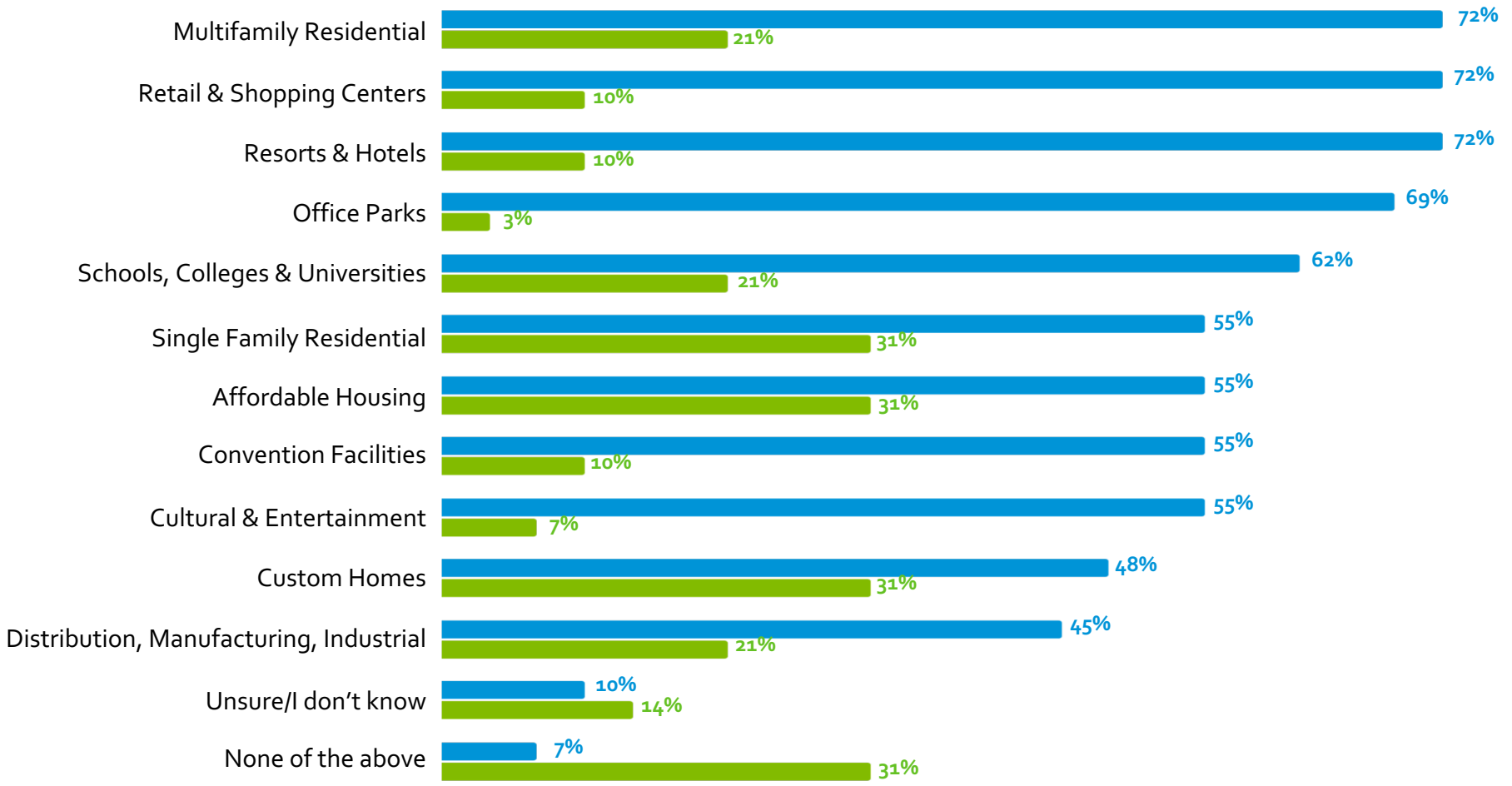
70% of respondents **strongly agree** or **somewhat agree.**

EV CHARGING - DEVELOPMENT

In your opinion, if an EV charging infrastructure ordinance is enacted, **should it apply only to new development or to both new and existing development**?



EV CHARGING - LAND USE TYPES



Non-Exempt:
Which of the following land use types **should** an EV charging infrastructure ordinance apply?

Exempt:
Which of the following land use types **should be exempt** from an EV charging infrastructure ordinance?

EV CHARGING - LAND USE TYPES

In a sentence or two, please **elaborate on why the land use(s) you chose should be exempt** from an ordinance?

*"**Cost requirements** of EV infrastructure should impact land use(s) ordinance(s)"*

*"If the owner of a custom home wants to install the appropriate infrastructure to support an electric vehicle, **it should be a choice, not a requirement** at this point."*

*"I struggle with single family, at least from the Reno perspective. **Our target would be tier 2 and 3, so more outlying areas.** It would be a difficult ask for those within the urban core. I don't think for all schools, unless for Staff only. Elementary kids don't need chargers."*

*"EV options should be offered at both SFD and Multi-family not included. Although electric cars are popular i**t should be up to the customer to choose**."*

*"The primary location that EVs will be charged will be where the owners live. **Requiring schools/universities to build the infrastructure will cost more for taxpayers for little benefit**. The other locations I chose I feel will have little benefit to drive EV adoption."*

*"The exemption(s) will **keep costs lower**."*

*"I **don't believe in government mandating** electric vehicles."*

*"EV is **bad for the environment**."*

*"Single family developments would **cause more criminal activity having to park a vehicle in a central charging area**. Schools and colleges is too broad of a spectrum I do not think K-12, charter or private should be required due to size."*

*"The choice to provide a private EV charger **should be left to the individual homeowners**."*

*"Affordable housing is already challenged by rising construction costs. Retail and Shopping are also challenged by e-commerce and **the limited time people spend in these locations seems to contradict the need to charge a vehicle**."*

*"**Only new houses** should apply the ordinance all others should not"*

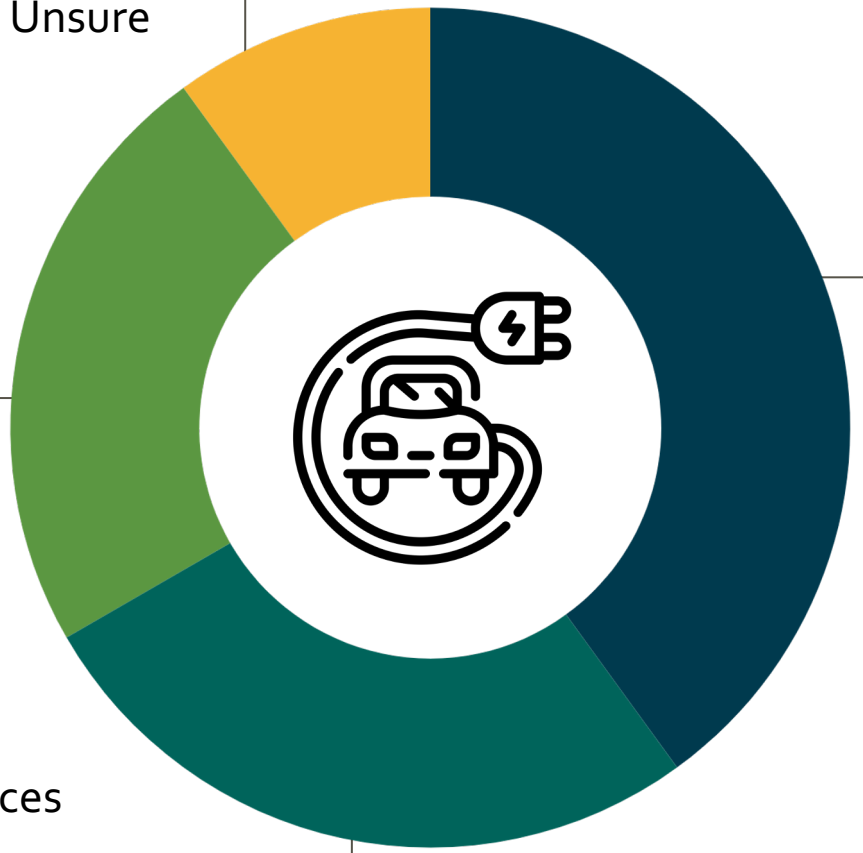
*"Public schools have **limited budgets available**. More likely to participate via Grants funding."*

*"I think it **should be limited**. Not every unit needs charging facilities"*

*"Custom homes for no other reason than they are custom. **Affordable housing projects need a rebate program of some sort in my opinion**. EV locations should generally be for density projects"*

STANDARD TYPES OF EV CHARGING

Of these three most standard types of EV charging infrastructure configurations, **which one should Clark County and the region's Cities require** in the ordinance?



10%
Unsure

23%
EV Charger Installed
(all + charger)

40%
EV Capable Parking Spaces
(conduit + circuit)

27%
EV Ready Parking Spaces
(all up to charger)

REGISTRATION DATA

Should the County and Cities **use projected EV registration data as a baseline for determining the percentage of parking spaces** impacted by the ordinance?

50%

of respondents said

'Yes'

If you selected 'No' please indicate why:

***"Projections can vary widely**; additionally, household demographics have influence EV adoption'*

*"Because **there is a large transient population of vehicles that won't be registered in Nevada**."*

*"With supply-chain constraints it is difficult to project future market share of electrification. However, Nevada's use of plug-in and plug-in hybrid electric vehicles is expanding rapidly and **there is a possibility that we will exceed the 25% level previously referenced.**"*

***"Allow the jurisdictions to set / establish** their parking standards in their zoning ordinance."*

*"I **don't believe the government should be mandating** EVs."*

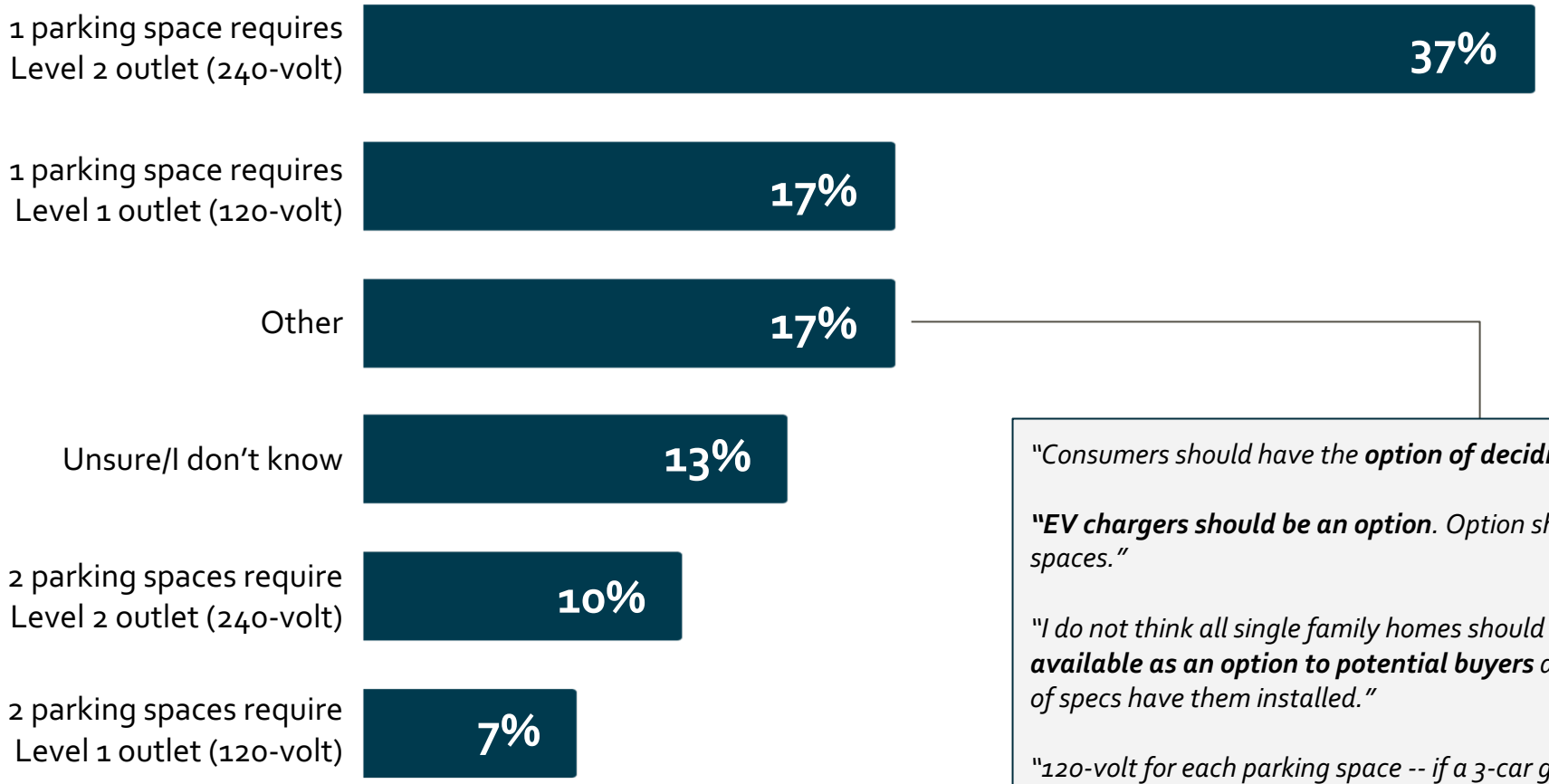
*"I believe they should do the **current guidelines based on current registration and revisit in 3 years** and up the spaces if needed at that time."*

*"We design and construct new buildings to last for 100 or more years. At the same time, we can expect light-duty vehicle sales to approach 100% EV in the next 10-15 years, so **we should future-proof buildings to include the conduit and wiring to facilitate the installation of EV charging stations,** even if that infrastructure won't be used for another 5-10 years. It doesn't make sense to mimic the exact percentage of EV fleet penetration in the EV parking requirements when the infrastructure needs will exceed those provisions almost immediately."*

*"I believe the **infrastructure needs to be in place and accessible** if it is determined the homeowner wants it installed. But the **homeowner needs to pay** for the connection and hookup not the developer or builder. For businesses I believe EV charging should be considered in the same fashion as handicap spots. I **do not think it is a businesses responsibly** to make sure every EV owner can charge while at their place of business."*

EV CHARGING - PARKING SPACES

For single-family home garages, choose your preferred EV charging ordinance structure from which the Working Group will develop cost estimates for discussion.



*"Consumers should have the **option of deciding**."*

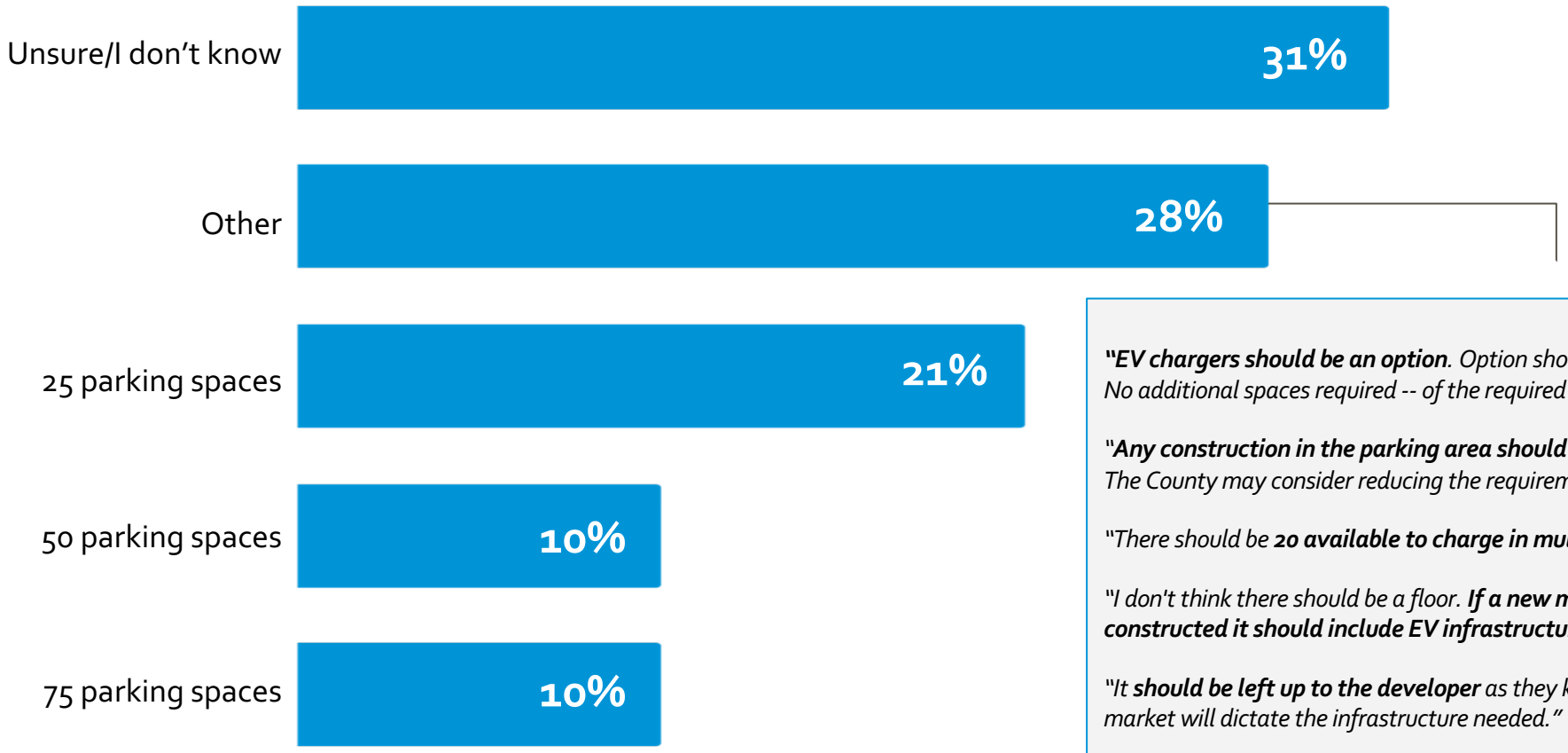
***"EV chargers should be an option**. Option should include level 2 for 2 parking spaces."*

*"I do not think all single family homes should be required but **it should be available as an option to potential buyers** and potentially a select number of specs have them installed."*

*"120-volt for each parking space -- if a 3-car garage then 3 120-volt outlets. **The homeowner can decide if they want charging connected or not, but it should be available**."*

EV CHARGING - PARKING SPACES

For multifamily communities, what additional number of new parking spaces should trigger an EV charging infrastructure ordinance?



***"EV chargers should be an option**. Option should include Level 2 for 2 parking spaces. No additional spaces required -- of the required parking, x spaces shall be designated."*

*"**Any construction in the parking area should trigger EV infrastructure requirements.** The County may consider reducing the requirements for renovations to minimize costs."*

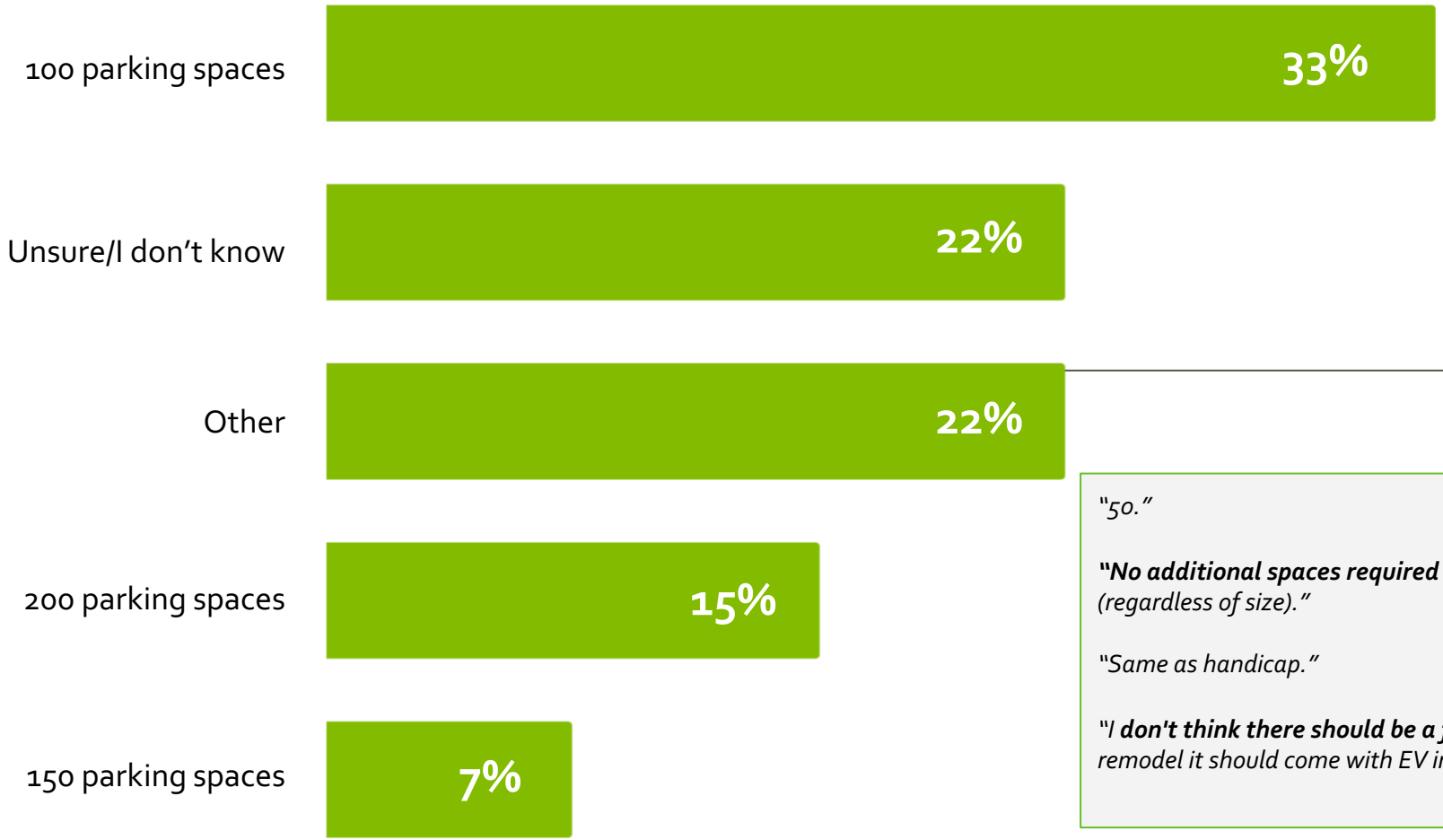
*"There should be **20 available to charge in multifamily** dwellings."*

*"I don't think there should be a floor. **If a new multifamily development is being constructed it should include EV infrastructure**."*

*"It **should be left up to the developer** as they know what their customer desires. The market will dictate the infrastructure needed."*

EV CHARGING - PARKING SPACES

For non-residential development of office parks, retail, and shopping centers, at what point should a project trigger the EV charging infrastructure ordinance?



"50."

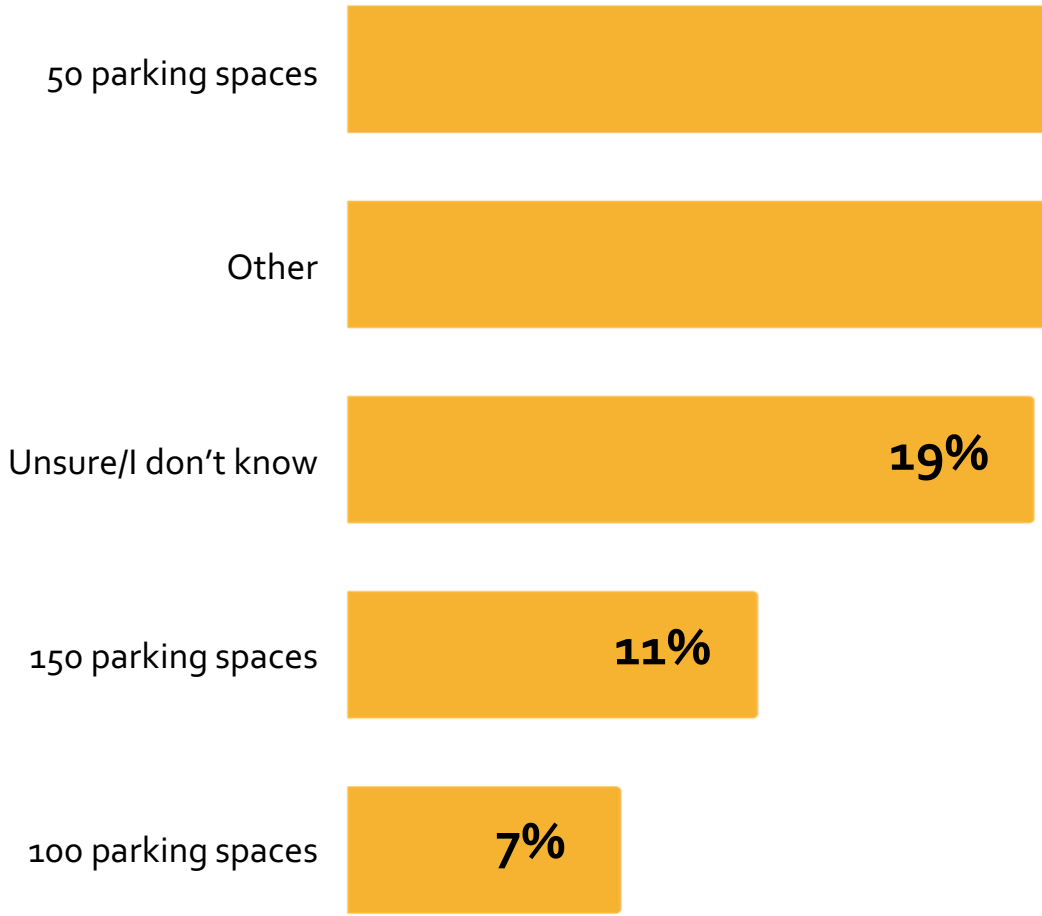
***"No additional spaces required** - of the required parking, x spaces shall be designated (regardless of size)."*

"Same as handicap."

*"I **don't think there should be a floor.** If there is a new development or substantial remodel it should come with EV infrastructure."*

EV CHARGING - PARKING SPACES

For non-residential development of resorts, hotels, schools, colleges, universities, convention facilities, cultural, and entertainment, at what point should a project trigger the EV charging infrastructure ordinance?



*"Number of parking spaces should be **significantly higher, based upon scope and scale of category definitions."***

*"Resorts have thousands of spaces. **Consideration should be given to the scale and time spent at resorts when considering requirements for charging stations.** It appears that Orlando eliminated the requirements for substantial improvements to existing projects. Slide 34 notes change of use, substantial improvements, and existing buildings are not required to comply. Only applies to new projects and substantial enlargements of existing projects for new parking only."*

"I think resorts/hotels should have a low threshold. Schools/Colleges/Universities I think should be exempt."

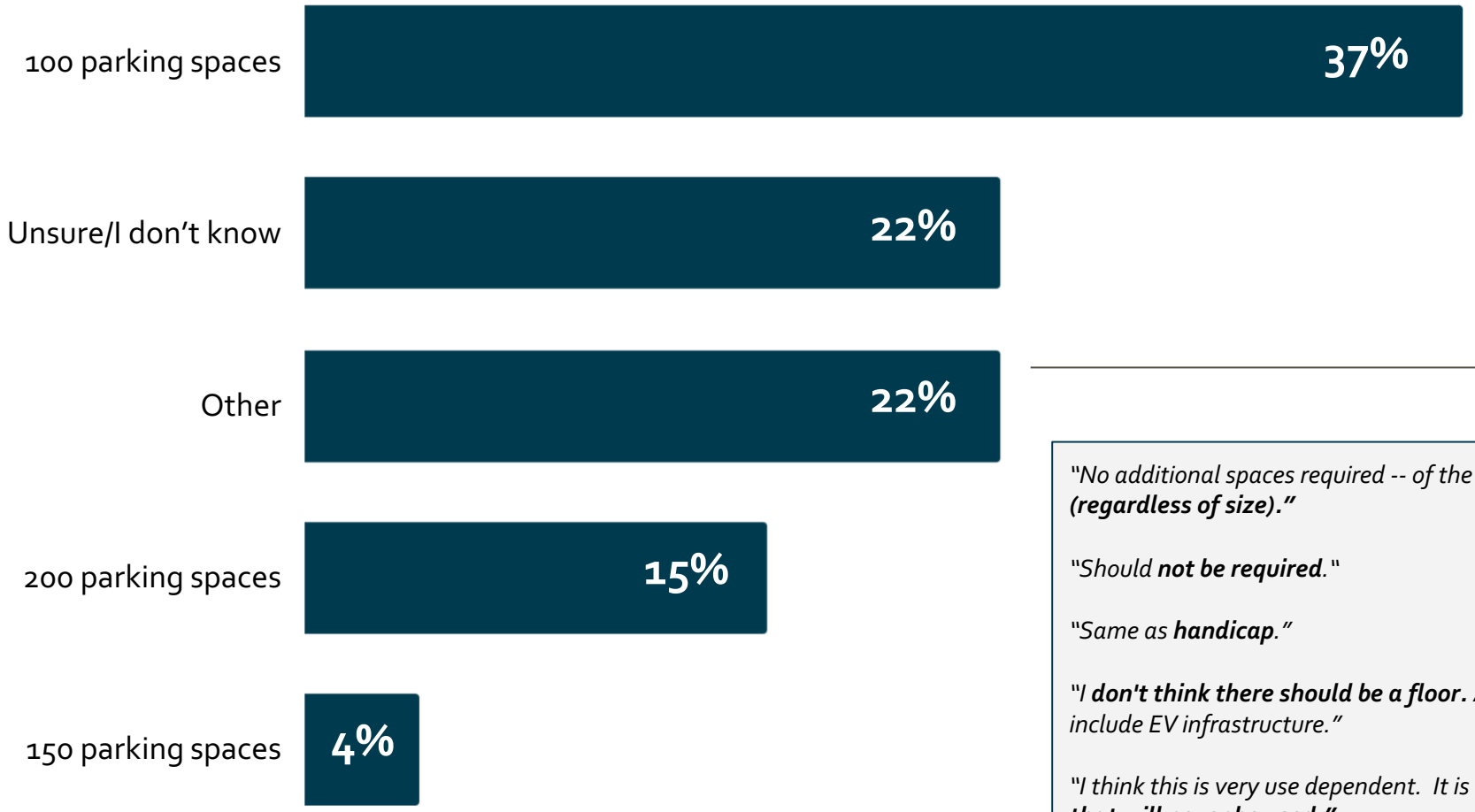
***"No additional spaces required** -- of the required parking, x spaces shall be designated (regardless of size)."*

*"Same as **handicap."***

*"I don't think there should be a floor. **If there is a new development or substantial remodel it should include EV infrastructure."***

EV CHARGING - PARKING SPACES

For non-residential development of distribution, manufacturing, and industrial, at what point should a project trigger the EV charging infrastructure ordinance?



"*No additional spaces required -- of the required parking,* ***x spaces shall be designated (regardless of size).***"

"*Should* ***not be required****.*"

"*Same as* ***handicap****.*"

"*I* ***don't think there should be a floor.*** *A new development or major remodel should include EV infrastructure.*"

"*I think this is very use dependent. It is* ***important not to over engineer infrastructure that will never be used.***"

SCENARIO 1 CHOSEN FOR ALL USE TYPE COST ESTIMATES

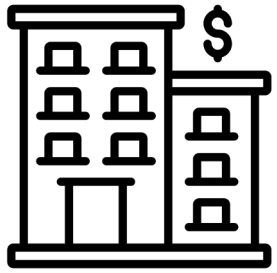
For multifamily communities

52%

EV Capable – **20%** 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**



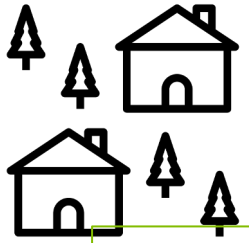
Office parks, retail, and shopping centers

44%

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**

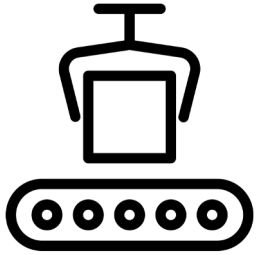


Resorts and hotels, schools, colleges and universities, convention facilities, cultural and entertainment

42% Tie

EV Capable – **20%** of required parking, **+1** for every additional **25 spaces**
EV Ready Outlet – **0%**
EV Charging Installed – **3%** of required parking, **+1** for every additional **100 spaces**

EV Capable – **30%** of required parking, **+1** for every additional **25 spaces**
EV Ready Outlet – **10%**
EV Charging Installed – **10%** of required parking, **+1** for every additional **25 spaces**



Distribution, manufacturing, and industrial

52%

EV Capable – **5%** of required parking, **+1** for every additional **150 spaces**

EV Ready Outlet – **0%**

EV Charging Installed – **3%** of required parking, **+1** for every additional **100 spaces**

SCENARIO COMBINED WITH SURVEY PARKING SPACE DATA

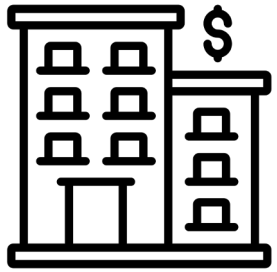
For multifamily communities

52%

EV Capable – **20%** of required parking, **+1** for every additional **25 spaces**

EV Ready Outlet – **0%**

EV Charging Installed – **3%** of required parking, **+1** for every additional **25 spaces**



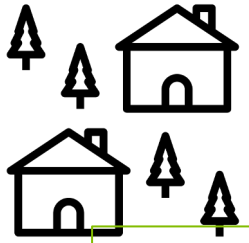
Office parks, retail, and shopping centers

44%

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**

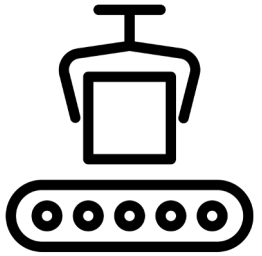


Resorts and hotels, schools, colleges and universities, convention facilities, cultural and entertainment

42% Tie

EV Capable – **20%** of required parking, **+1** for every additional **50 spaces**
EV Ready Outlet – **0%**
EV Charging Installed – **3%** of required parking, **+1** for every additional **50 spaces**

EV Capable – **30%** of required parking, **+1** for every additional **50 spaces**
EV Ready Outlet – **10%**
EV Charging Installed – **10%** of required parking, **+1** for every additional **50 spaces**



Distribution, manufacturing, and industrial

52%

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**

EV SPACE LOCATION

Should the **location of the EV parking spaces within the parking lot** be left to the discretion of the developer?

97%

of respondents said '**Yes'**

ADDITIONAL COMMENTS

Do you have **any other comments** about a model EV charging infrastructure ordinance for the Clark County region?

*"To support the demand of the new electric vehicles on the energy grid, this **ordinance should also require shaded parking with solar**."*

*"**Cost considerations -- of both charging units and electrical infrastructure** -- should be accounted for within any ordinance proposal."*

*"Resorts are fundamentally different from every other form of commercial and non-residential development. Visitors typically occupy parking spaces longer than visitors to shopping centers. Resorts have thousands of spaces in both garages and surface parking. The sheer scale is important to consider when considering mandates based on percentages alone. Also, resorts have ancillary surface level spaces for other users like delivery, valet, etc. Resorts are highly motivated to satisfy customer demand and user preferences. If not well thought out, **EV requirements may prematurely require resorts to make complicated decisions about investing in existing buildings and parking structures for EVs at a time when consumer preferences, technology, and EVs are rapidly evolving and before the distribution infrastructure is ready."***

*"**Incentives to help offset cost** would encourage including as standard versus optional."*

*"I think this **should be left to the free market.** If a company or multifamily developer wants to build EV stations to attract customers or gain support, then go ahead."*

*"It would be interesting to explore potential **incentives for developers deciding to go above and beyond the minimum requirements.** Also, would be interested in further **incentivizing solar covered parking** to support the EV charging infrastructure where possible."*

*"I would **focus on where cars spend most of their time** when charging is best for the grid and customer. In most cases this is **residential,** in the evening. In our unique destination this could also apply to **hotels/resorts**."*

*"I generally **marked "not sure" because it is impossible to determine the potential costs of the various scenarios on development**. Further, I think there should be an amalgamation of the various options. Lastly, there is nothing related to charging ordinances for governmental building construction (besides schools/universities). Why is that? **Shouldn't Clark County, City of Las Vegas, etc. be required to install the same infrastructure as private industry would be?"***

"A base ordinance with uniform standards (regionally adopted) with minimum standards would be helpful; other features that are municipally preferred or optional should also be included. Sharing the GPI Climate Ordinance database -- please take a look at the Transportation sector for EV ordinances."

*"**Incentives** should be part of the ordinance since this is a public policy with public benefit."*

ADDITIONAL COMMENTS

Do you have **any other comments** about a model EV charging infrastructure ordinance for the Clark County region?

*"Grid capacity concerns along with additional infrastructure costs. As I understand it, **even optioning one new EV charger in a single family community requires designing the entire community's electrical infrastructure as if ALL homes in the community will have EV chargers**. We include EV chargers standard where the infrastructure has capacity and does not create additional costs to the consumer beyond the in-house direct costs and would support a similar program."*

*"Fortunately, market conditions are already moving in the direction of supplying EV charging, particularly in new development. However, mandating through **ordinance seems more practical for new development that existing property retrofits.**"*

*"Have you worked with SparkCharge Mobile EV Charging? **Some condo owners say they can't hook up or install EV chargers.** I wonder if mobile EV charging is an option?"*

*"It should not be an ordinance and choice of the companies developing residential and commercial. **The power grid will not be able to handle this EV trend** and it's destroying our environment faster than normal fossil fuels just to make the tools to run EV."*

"

*"I personally own 2 EV vehicles (BMW i3 and Chevy Bolt) so this topic is near and dear to my heart. I've owned both cars for over 3 and 2 years respectively and they are our main source of transportation. I just installed a 240-volt outlets and Level 2 charger in my garage this week. Prior to this I was just using my 110 outlet and was getting by fine but had to plan my trips around the existing infrastructure. It is important not to over engineer and create a lot of wasted infrastructure. I understand the goal is to future proof the code, but the fact is technology is moving so quickly, that I would hate to see a bunch of wasted material and money on infrastructure that may be as needed as pay-phones in the next 10 years. I would **strongly encourage letting the market dictate what EV infrastructure is needed.** There is no ordinance requiring a certain number of gas stations, EV charging should be the same way. If the desire is to expedite the infrastructure to encourage early adoption, then **incentives are the best course of action."***

*"Would **prefer time was spent on creating mass transit** instead of this. Adding cost to housing while grousing about housing cost is ironic at best. This benefits the whole valley but is only being foisted on new units."*

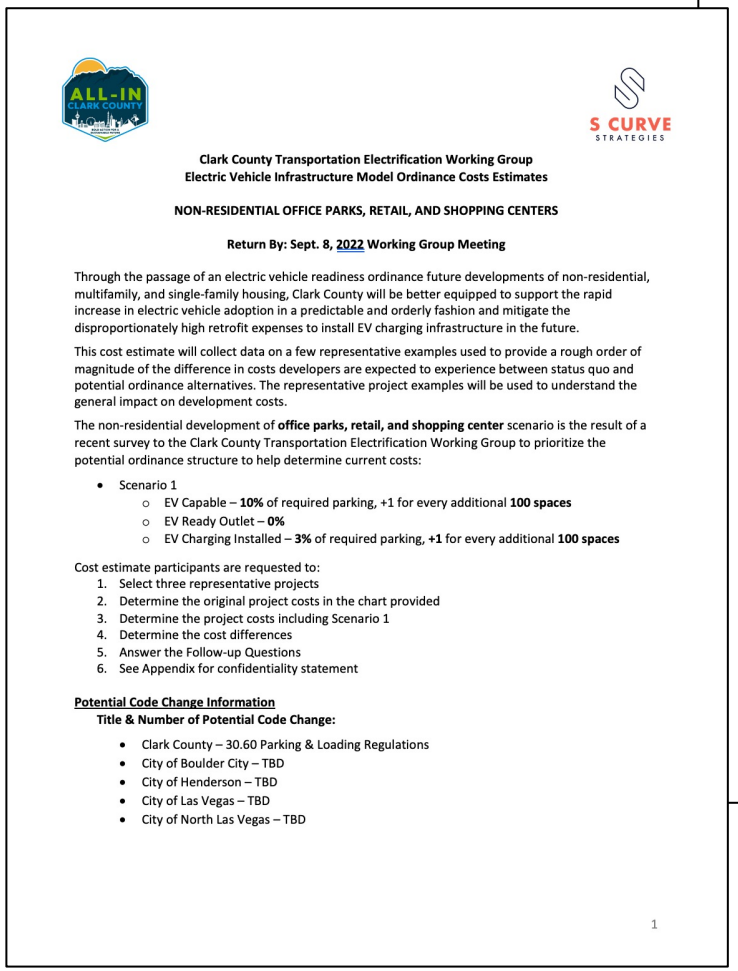
*"The additional capacity requirement in single family residential is not driven by the needs of the development but rather a public policy with public benefit. The **incentives and program requirements should be predictable to offset the cost of this increase capacity to balance affordability concerns with the need for cleaner air.** The effective date needs to be timed appropriately, in line with building code adoption and legislative action, as well as looked at holistically where we're currently making other policy decisions that affect our overall grid usage. **A grace period should be built in to acknowledge that communities could have approved designs or be under construction** when this change goes into effect."*

ORDINANCE COST ESTIMATE TEMPLATES

April Bolduc
S Curve Strategies

COST ESTIMATE TEMPLATES

Please contact April Bolduc of S Curve Strategies for the cost estimate templates at abolduc@scurvestrategies.com.



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:

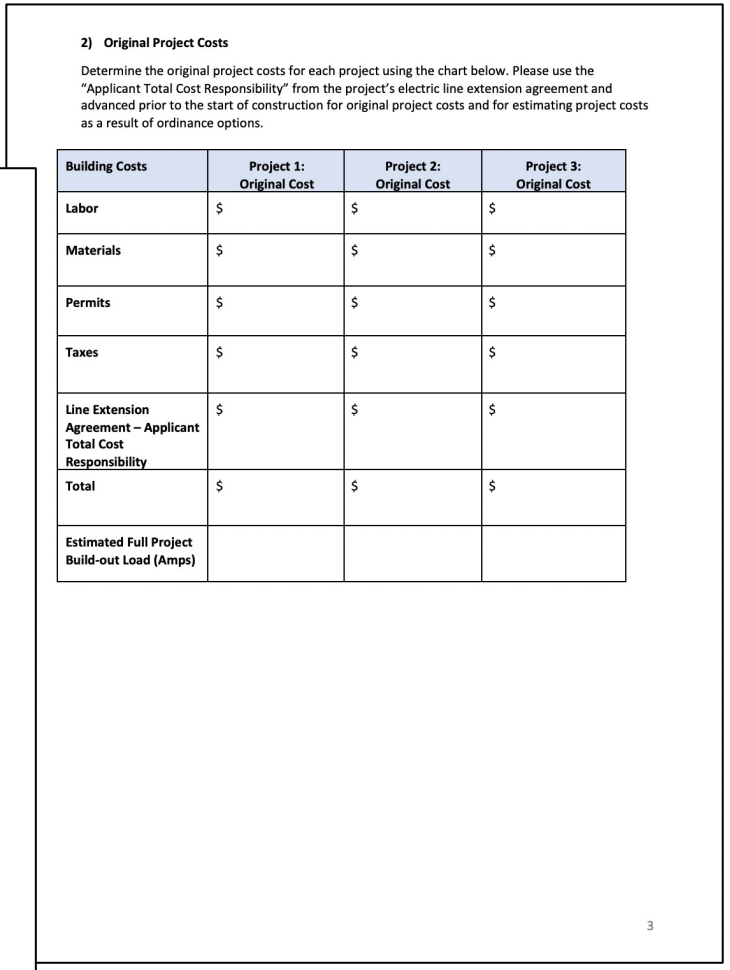
1. Select three representative projects
2. Determine the original project costs in the chart provided
3. Determine the project costs including Scenario 1
4. Determine the cost differences
5. Answer the Follow-up Questions
6. See Appendix for confidentiality statement

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

NEXT STEPS

NEXT STEPS

- Next Meeting: Aug. 4
- Return cost estimate sheets by the Sept. 8 Working Group meeting to April Bolduc of S Curve Strategies at abolduc@scurvestrategies.com

Thank you