



## **CITY COUNCIL SUSTAINABILITY AND TECHNOLOGY SUBCOMMITTEE MEETING**

Friday, November 8, 2024  
10:30 a.m.

Chandler City Hall  
5th Floor Large Conference Room  
175 S. Arizona Ave., Chandler, AZ

Pursuant to Resolution No. 4464 of the City of Chandler and to A.R.S. 38-431.02, notice is hereby given to the members of the Chandler City Council Sustainability and Technology Subcommittee and to the general public that the Chandler City Council Sustainability and Technology Subcommittee will hold a meeting open to the public on Friday, November 8, 2024, at 10:30 a.m. at Chandler City Hall, Fifth Floor Large Conference Room, 175 S. Arizona Avenue, Chandler, Arizona.

Persons with disabilities may request a reasonable modification or communication aids and services by contacting the City Clerk's office at 480-782-2181. Please make requests in advance as it affords the City time to accommodate the request.

Agendas are available in the Office of the City Clerk, 175 S. Arizona Avenue.

### **Agenda**

1. Turf to Xeriscape Conversion Update
2. Electric Vehicle Charging Strategy

### **Public Comment**

Public comments will be heard only for the item(s) on that published meeting agenda. Up to 15 minutes will be allotted for public comments on the agenda item(s) at the end of the agenda and each speaker will be allocated up to three minutes at the discretion of the Presiding Officer or designated parliamentarian.



## City Council Subcommittee Memorandum

**Date:** 11/08/2024  
**To:** Council Subcommittee  
**From:** Tera Scherer, Executive Management Assistant  
**Subject:** Turf to Xeriscape Conversion Update

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### Attachments

Presentation

# Turf to Xeriscape Program

Sustainability and Technology Subcommittee  
November 8, 2024



## 2023-2025 Strategic Framework

- **Neighborhoods**
  - Well-maintained public infrastructure promotes neighborhood aesthetics, safety and community vitality
- **Sustainability and Technology**
  - Leading in the sustainability of water infrastructure and conservation.
  - Managing urban forestry and green space assets in a way that enhances livability while respecting the desert environment.





# Agenda

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- Why and What is Xeriscape
- WIFA Grant Overview
- Public Outreach
- Public Responses
- Turf to Xeriscape Options
- Staff Recommendations
- Timeline for Phase 1
- Phase 2 Project

## Why Convert Grass Retention Basins to Xeriscape?

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Chandler's 2023-2025 Strategic Framework described the city's intention to embrace water sustainability and be a leader in water conservation. The average Chandler stormwater retention basin with grass uses between three and six million gallons of irrigation water each year. That is roughly equivalent to the annual water use for 30-60 homes.





# What is Xeriscape?

Xeriscape is a type of landscape design that uses minimal irrigation by incorporating drought tolerant trees, shrubs and native grasses.



## More than just rocks







# Why now?

Chandler has always been committed to water conservation and has a long history of water conservation programs designed to encourage xeriscape landscaping. However, turf to xeriscape conversions of large grass areas are quite expensive. This past year, the State of Arizona offered grant funds to implement water conservation programs such as turf to xeriscape conversions.

## WIFA Grant Funding

- Chandler was awarded a grant of \$3M dollars with a 25% match in city funding for xeriscaping city owned drainage basins.
- Council approved the design contract on February 22, 2024, using \$110,223 local funds and \$330,666 grant funds.

### Timing for Grant Spending Milestones:

- December 2, 2024 - \$200,000
- December 31, 2025 - \$2,000,000
- March 31, 2026 - \$3,000,000
- Project Completion - \$4,000,000





# Is There Savings When You Xeriscape ?

## Potential Savings with Planned Xeriscape Conversions:

- Substantial Utility Bill Cost Savings of **\$83,667/yr total**
- Substantial Gallons of Water Savings = **26.9 million gal/yr total**

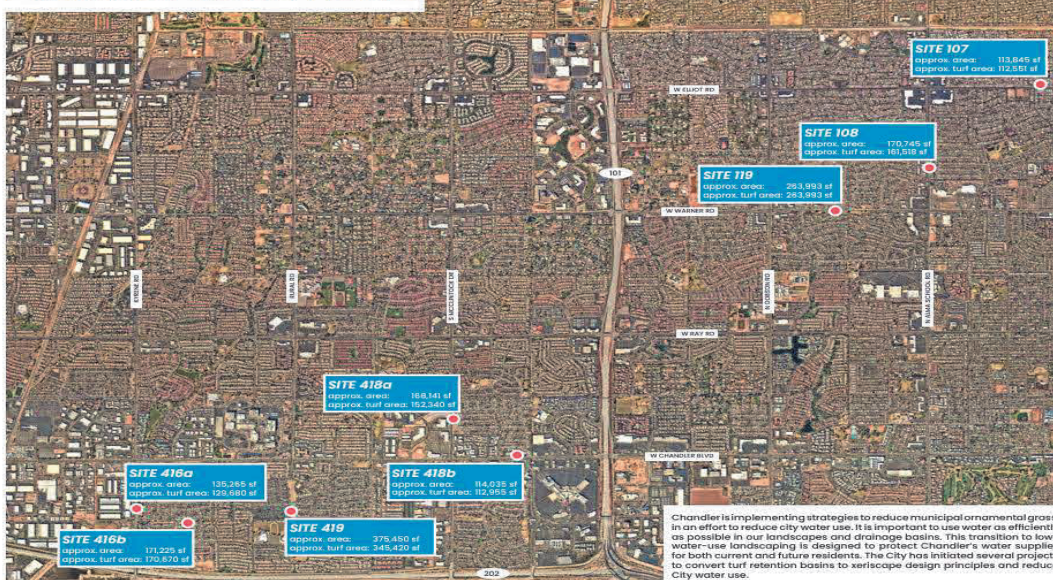
## Maintenance Costs per Acre:

- May Increase Slightly When Xeriscape Complete Due to Higher Number of Trees and Shrubs But We Will Make Every Effort to Keep Costs Flat.
- Current Citywide Landscape Contract Term is 5 yrs, With Options to Adjust Costs Per Year Until August 2028



## Phase 1 Xeriscape Locations – Sites for Public Meeting #1

### PROJECT LOCATIONS



### Xeriscaped Site Examples





# Public Involvement

- Postcards mailed to 3,500 residents who live near the retention basins
- First public meeting was held on May 30, 2024
- Website – [chandleraz.gov/TurfToXeriscape](http://chandleraz.gov/TurfToXeriscape)
- Online survey
- Calls and emails

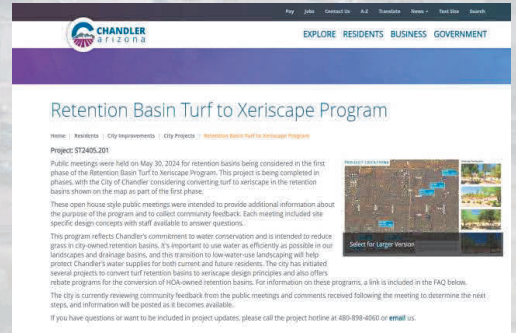


## Chandler's Turf to Xeriscape Program

Project No. ST2405.301

Chandler is implementing strategies to reduce municipal ornamental grass, in an effort to reduce city water use. It is important to use water as efficiently as possible in our landscapes and drainage basins. This transition to low-water-use landscaping is designed to protect Chandler's water supplies for both current and future residents. The city has initiated several projects to convert turf retention basins to xeriscape design principles and reduce city water use.

If you live adjacent to a retention basin planned for conversion (see map below), please provide your comments.



# Public Involvement – Feedback Received

Site #	Feedback	Summary
107	<ul style="list-style-type: none"> <li>• 1 survey response</li> </ul>	Resident looking for shade cover for walks. This project will add trees along the sidewalk to help provide shade for walks.
108	<ul style="list-style-type: none"> <li>• 3 open house comments</li> <li>• 5 survey responses</li> </ul>	Residents were concerned about drainage issues, which will be addressed as part of the project; concerned about providing a play area for kids and dogs, which is available at the nearby park.
119	<ul style="list-style-type: none"> <li>• 2 open house comments</li> <li>• 5 survey responses</li> </ul>	Residents were concerned about noise, wildlife, heat effect, and added dust. These concerns will be addressed as part of the project.
416a	<ul style="list-style-type: none"> <li>• 2 open house comments</li> <li>• 7 survey responses</li> <li>• 1 call/email</li> </ul>	Comments regarding basin Site 416a and 416b together. Minimal resident concerns specific to Site 416a.
418a	<ul style="list-style-type: none"> <li>• 6 open house comments</li> <li>• 2 survey responses</li> </ul>	Comments regarding basin Site 418a and 418b together. Only one of the residents uses this basin for dog walking and playing with kids.
416b	<ul style="list-style-type: none"> <li>• 3 open house comments</li> <li>• 7 survey responses</li> <li>• 1 call/email</li> </ul>	Comments regarding basin Site 416a and 416b together. Many residents highlighted current usage for sports, dog walking and family activities.
418b	<ul style="list-style-type: none"> <li>• 3 open house comments</li> <li>• 2 survey responses</li> </ul>	Residents use this basin for recreational purposes. This basin has areas that can be xeriscaped and still provide the residents with an area that meets their needs.
419	<ul style="list-style-type: none"> <li>• 10 open house comments</li> <li>• 18 survey responses</li> <li>• 2 calls/emails</li> </ul>	Many residents noted that parts of the basin are heavily used for all different types of activities.



# Positive Feedback Received – Area 107

ELLIOT RD. & SUMMIT PL.

BEFORE



AFTER



Utility Bill Cost Savings  
\$10,000/yr

Gallons Savings  
3.3 Million Gallons/yr

Xeriscape Maintenance Cost  
Currently \$446/acre. Cost  
Increases are possible when  
sites are reevaluated by  
contractor but we will make  
every effort keep costs flat



0' 30' 60'

## QUANTITIES

Approx. site area: 113,845 SQ. FT.  
Approx. turf removed: 112,551 SQ. FT.

## OPINION OF PROBABLE CONSTRUCTION COST

\$ 730,902.99

# Positive Feedback Received – Area 108

ALMA SCHOOL RD. & PALOMINO DR.

BEFORE



AFTER



Utility Bill Cost Savings  
\$15,000/yr

Gallons Savings  
5.0 Million Gallons/yr

Xeriscape Maintenance Cost  
Currently \$446/acre. Cost  
Increases are possible when  
sites are reevaluated by  
contractor but we will make  
every effort keep costs flat

## QUANTITIES

Approx. site area: 170,745 SQ. FT.  
Approx. turf removed: 161,518 SQ. FT.

## OPINION OF PROBABLE CONSTRUCTION COST

\$ 1,001,631.50



0' 30' 60'

# Positive Feedback Received – Area 119

WARNER RD. & PENNINGTON DR.

BEFORE



AFTER



Utility Bill Cost Savings  
\$8,000/yr

Gallons Savings  
2.6 Million Gallons/yr

Xeriscape Maintenance Cost  
Currently \$446/acre. Cost  
Increases are possible when  
sites are reevaluated by  
contractor but we will make  
every effort keep costs flat

## QUANTITIES

Approx. site area: 263,993 SQ. FT.  
Approx. turf removed: 263,993 SQ. FT.

## OPINION OF PROBABLE CONSTRUCTION COST

\$ 1,666,704.95



# Positive Feedback Received – Area 416A

KYRENE RD. & CHICAGO ST.

BEFORE



AFTER



Utility Bill Cost Savings  
\$10,000/yr

Gallons Savings  
3.0 Million Gallons/yr

Xeriscape Maintenance Cost  
Currently \$446/acre. Cost  
Increases are possible when  
sites are reevaluated by  
contractor but we will make  
every effort keep costs flat

## QUANTITIES

Approx. site area: 135,265 SQ. FT.  
Approx. turf removed: 129,680 SQ. FT.

## OPINION OF PROBABLE CONSTRUCTION COST

\$ 807,862.58





# Positive Feedback Received – Area 418A

MCCLINTOCK DR. & GALVESTON ST.

BEFORE



AFTER



Utility Bill Cost Savings  
\$10,000/yr

Gallons Savings  
3.2 Million Gallons/yr

Xeriscape Maintenance Cost  
Currently \$446/acre. Cost  
Increases are possible when  
sites are reevaluated by  
contractor but we will make  
every effort keep costs flat



## QUANTITIES

Approx. site area: 114,035 SQ. FT.  
Approx. turf removed: 112,955 SQ. FT.

## OPINION OF PROBABLE CONSTRUCTION COST

\$ 940,247.03

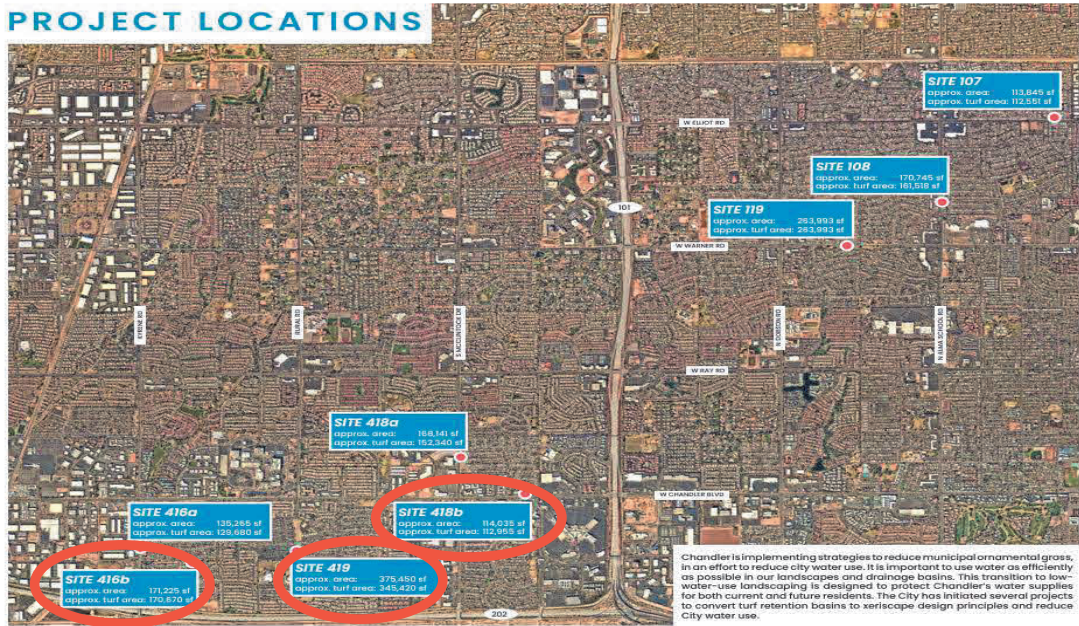
## Recommendations for Sites that Received Positive Feedback

- The following sites are proposed to be built as shown in the original Public Meeting. City staff will contact residents that had comments and answer any questions they may have.
  - Site 107 - North side of Elliot Road east of Alma School Road.
  - Site 108 - East side of Alma School north of Warner Road
  - Site 119 - South side of Warner Road east of Dobson Road
  - Site 416a - East side of Kyrene Road South of Chandler Boulevard
  - Site 418a - East side of McClintock Drive north of Chandler Boulevard



# Sites with Mixed Feedback From Public Meeting #1

## PROJECT LOCATIONS

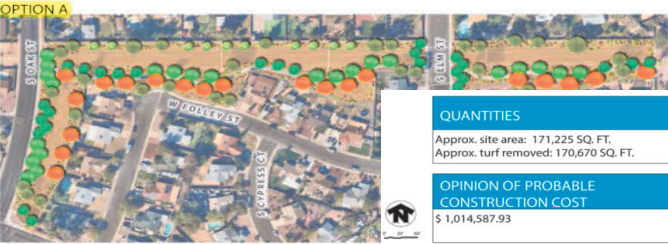


## Xeriscaped Site Examples



# Options Discussion – Area 416B

## OAK ST. & FOLLEY ST.



Utility Bill Cost Savings  
\$8,000/yr

Gallons Savings  
2.5 Million Gallons/yr

Xeriscape Maintenance Cost  
Currently \$446/acre. Cost Increases are possible when sites are reevaluated by contractor but we will make every effort keep costs flat



# Options Discussion – Area 418B

CHANDLER BLVD. & COUNTRY CLUB WY.



QUANTITIES
Approx. site area: 114,035 SQ. FT. Approx. turf removed: 112,955 SQ. FT.
OPINION OF PROBABLE CONSTRUCTION COST
\$ 706,460.25

QUANTITIES
Approx. site area: 114,035 SQ. FT. Approx. turf removed: 92,830 SQ. FT.
OPINION OF PROBABLE CONSTRUCTION COST
\$ 747,128.70

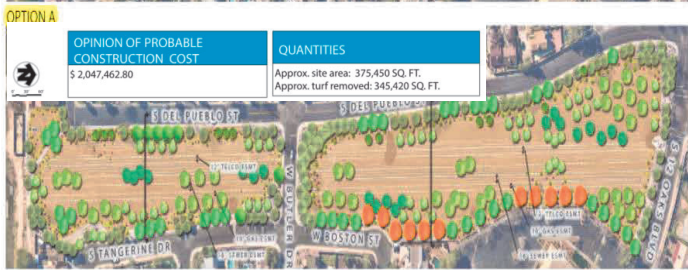
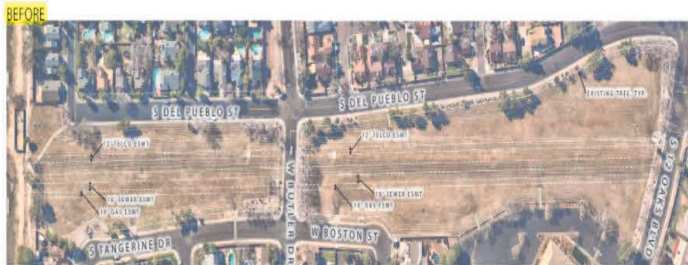
Utility Bill Cost Savings  
\$9,500/yr

Gallons Savings  
3.075 Million Gallons/yr

Xeriscape Maintenance Cost  
Currently \$446/acre. Cost Increases are possible when sites are reevaluated by contractor but we will make every effort keep costs flat

# Options Discussion – Area 419

BASINS AT BUTLER DR. & DEL PUEBLO ST.



OPINION OF PROBABLE CONSTRUCTION COST
\$ 2,002,732.08
QUANTITIES
Approx. site area: 375,450 SQ. FT. Approx. turf removed: 223,442 SQ. FT.

OPINION OF PROBABLE CONSTRUCTION COST
\$ 2,208,821.34
QUANTITIES
Approx. site area: 375,450 SQ. FT. Approx. turf removed: 315,966 SQ. FT.

Utility Bill Cost Savings  
\$13,167/yr

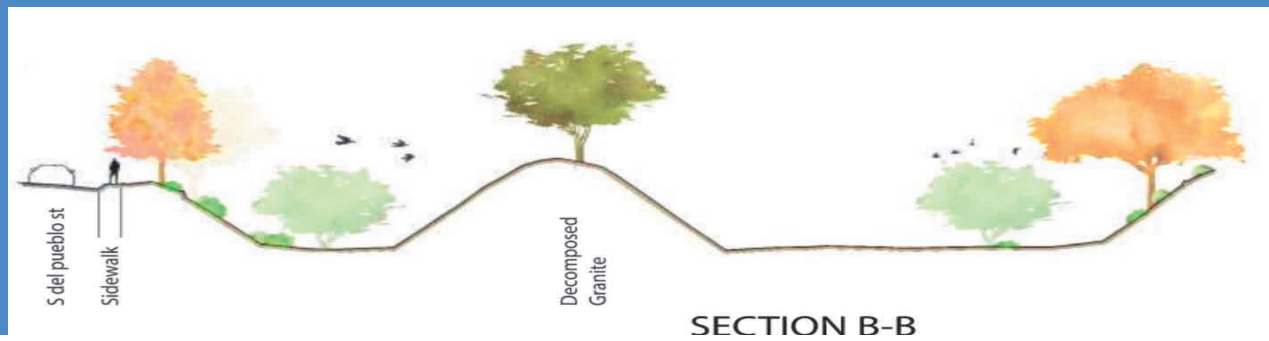
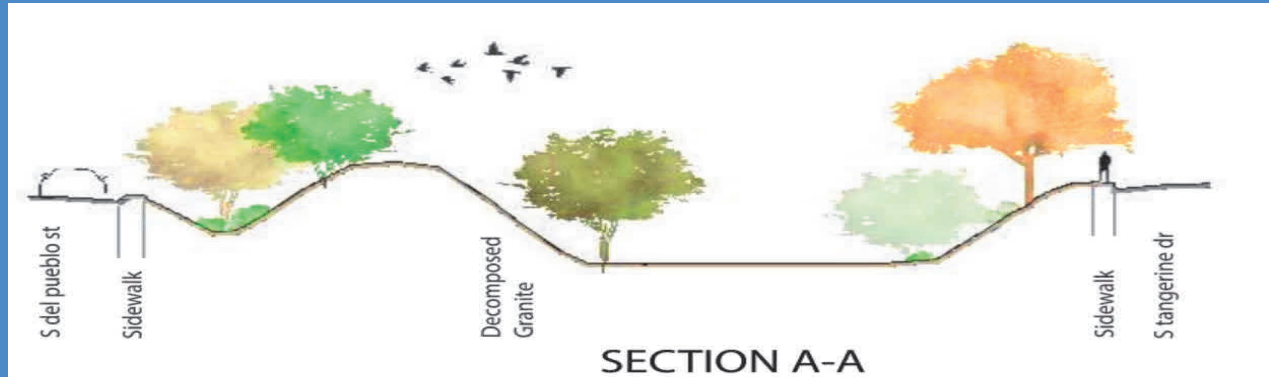
Gallons Savings  
4.167 Million Gallons/yr

Xeriscape Maintenance Cost  
Currently \$446/acre. Cost Increases are possible when sites are reevaluated by contractor but we will make every effort keep costs flat



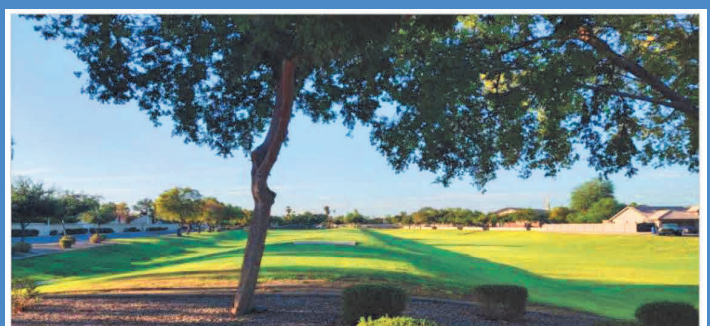
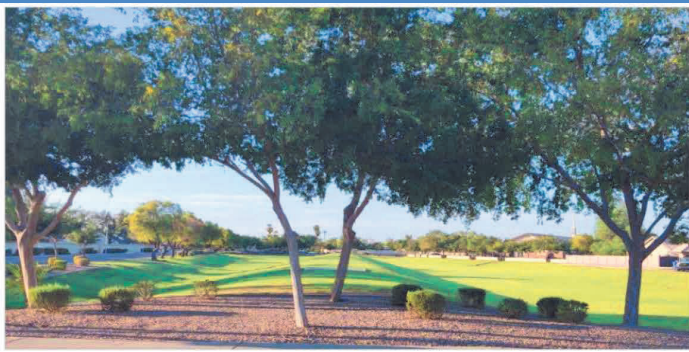
# Options Discussion – Area 419

## Cross-Sections



# Options Discussion – Area 419

## Existing Photos



# Recommendations for Sites That Received Mixed Feedback

- The following sites will be modified to address neighbors' questions, suggestions, and concerns. City staff will contact each resident that had a comment and discuss how we incorporated their ideas into the design.
  - Site 416b – South of Chandler Boulevard and east of Kyrene Road within the neighborhood.
    - Staff recommends Option A, full xeriscaping to match adjacent HOA basins as shown at the public meeting.
  - Site 418b – North side of Chandler Boulevard east of McClintock Drive
    - Staff recommends Option A, full xeriscaping as shown at the public meeting.
  - Site 419 – South of Chandler Boulevard within the 12 Oaks Community
    - Staff recommends Option C, leaving grass in the northeast quadrant per residents' recommendation.

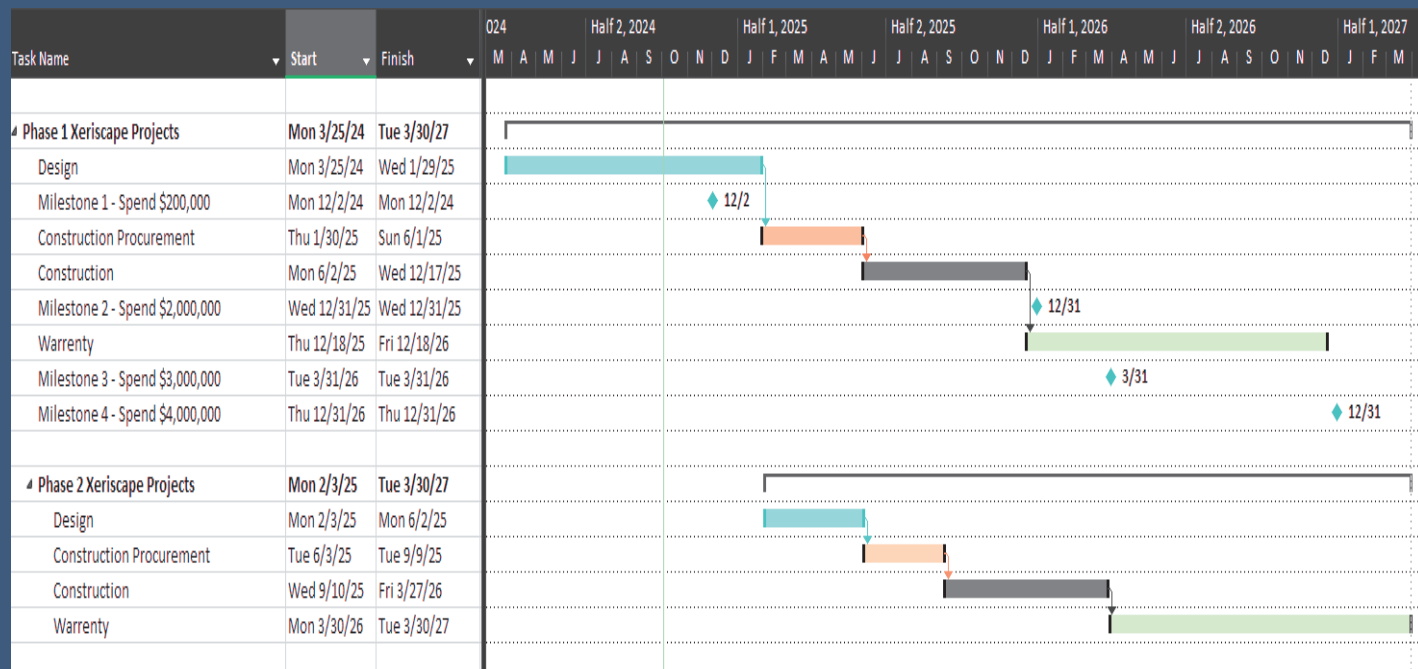
## Site Conversion Totals Shown Per Staff Recommendations

### Phase I Sites Proposed Conversion Totals

Site	Area Total (SF)	Area Converted (SF)	Estimated Const. Cost (\$)	Water Volume Saved (MGAL/YR)	Water Bill Savings (\$/YR)	*Maintenance Bill Savings (\$/YR)
<b>Positive Feedback Sites</b>						
107	113,854	112,531	\$730,903	3.3	\$10,000	\$0
108	170,745	161,518	\$1,001,632	5.0	\$15,000	\$0
119	263,993	263,993	\$1,666,705	2.6	\$8,000	\$0
416A	135,265	129,680	\$807,863	3.0	\$10,000	\$0
418A	114,035	112,955	\$940,247	3.2	\$10,000	\$0
	<b>797,892</b>	<b>780,677</b>	<b>\$5,147,350</b>	<b>17</b>	<b>\$53,000</b>	<b>\$0</b>
<b>Mixed Feedback Sites</b>						
416B	171,225	170,670	\$1,014,588	2.5	\$8,000	\$0
418B	114,035	112,995	\$706,460	3.1	\$9,500	\$0
419	375,450	315,966	\$2,208,821	4.2	\$13,167	\$0
	<b>660,710</b>	<b>599,631</b>	<b>\$3,929,869</b>	<b>10</b>	<b>\$30,667</b>	<b>\$0</b>
<b>Phase 1 Totals</b>	<b>1,458,602</b>	<b>1,380,308</b>	<b>\$9,077,219</b>	<b>27</b>	<b>\$83,667</b>	<b>\$0</b>

\*Xeriscape maintenance cost currently \$446/acre. Cost Increases are possible when sites are reevaluated by contractor but we will make every effort keep costs flat

# Project Timeline



## Review of Recommendations for Phase I Sites:

### Sites With Positive Resident Feedback:

- The following sites are proposed to be built as shown in the original Public Meeting.
  - Site 107 - North side of Elliot Road east of Alma School Road.
  - Site 108 - East side of Alma School north of Warner Road
  - Site 119 - South side of Warner Road east of Dobson Road
  - Site 416a - East side of Kyrene Road South of Chandler Boulevard
  - Site 418a - East side of McClintock Drive north of Chandler Boulevard

### Site With Mixed Resident Feedback:

- The following sites will be modified to address neighbors' questions, suggestions, and concerns.
  - Site 416b – South of Chandler Boulevard and east of Kyrene Road within the neighborhood.
    - Staff recommends Option A, full xeriscaping to match adjacent HOA basins as shown at the public meeting.
  - Site 418b – North side of Chandler Boulevard east of McClintock Drive
    - Staff recommends Option A, full xeriscaping as shown at the public meeting.
  - Site 419 – South of Chandler Boulevard within the 12 Oaks Community
    - Staff recommends Option C, leaving grass in the northeast quadrant per residents' recommendation.

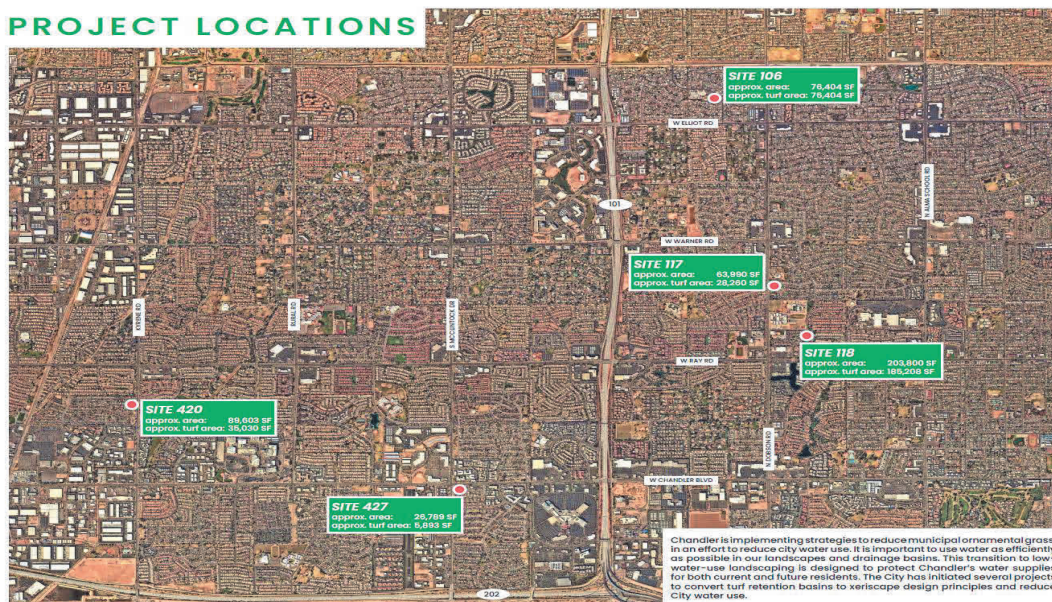


# How Will We Communicate Back to Residents?

City staff will contact each resident that had a comment by phone or email to discuss our path forward and how we incorporated their ideas into the design of the project. Final designs will also be posted on City web page for project

## Xeriscape Locations – Sites for Public Meeting #2 (Phase 2)

### PROJECT LOCATIONS



### Xeriscaped Site Examples



A photograph of palm trees and string lights at dusk. The sky is a deep blue, and the palm trees are silhouetted against it. Strings of warm white lights are strung across the scene, creating a warm and inviting atmosphere.

**Thank you!**

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**Questions?**





## City Council Subcommittee Memorandum

**Date:** 11/08/2024  
**To:** Council Subcommittee  
**From:** Tera Scherer, Executive Management Assistant  
**Subject:** Electric Vehicle Charging Strategy

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### Attachments

Presentation



# Electric Vehicle Feasibility Study

November 8, 2024

SUSTAINABILITY AND TECHNOLOGY SUBCOMMITTEE



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## Strategic Goal

Taking calculated risks to explore new technologies and innovative pilot programs that promote efficiency, productivity, sustainability and connectivity while demonstrating return on investment.

### ELT Action Plan Item

Continue the replacement of aging City vehicles with electric and hybrid alternatives that generate return on investment.

\*Currently, there is not any language in a vehicle replacement policy that addresses alternative fuel vehicles and/or sustainability although Administrative Regulation updates are in process. However, staff always considers hybrid/EV options when looking at replacements on a case by case basis

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## Current Fleet Stats

4%

of City Fleet a Hybrid or  
Electric Vehicle

8

Electric Vehicles

28

\* 11 more will replace  
10 ICE vehicles in  
2025

Hybrid Vehicles

18

Public Car Charging Ports

11

Fleet Designated Car  
Charging Ports

3

## Vehicle Type Analysis

### Ford Maverick Hybrid

Mile Driven Per Year	5,000
Miles Per Gallon	42
Gallons Per Year	119.05
Cost Per Gallon	\$3.36
Cost Per Year	\$400.00
Cents Per Mile	\$0.08
Annual Savings Vs. EV	\$215.79

### Chevrolet Bolt (EV)

Mile Driven Per Year	5,000
Miles Per kWh	3.8
kW Per Year	1315.79
Cost Per kWh	\$0.14
Cost Per Year	\$184.21
Cents Per Mile	\$0.04

### Ford Maverick

Mile Driven Per Year	5,000
Miles Per Gallon	25
Gallons Per Year	200.00
Cost Per Gallon	\$3.36
Cost Per Year	\$672.00
Cents Per Mile	\$0.13
Annual Savings Vs. EV	\$487.79

\* Average installation cost per charging station ranges from \$15,000 to \$90,000+

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# Vehicle Type Analysis

Police Comparison

## Ford PIU Hybrid

Mile Driven Per Year	14,500
Miles Per Gallon	24
Gallons Per Year	604.17
Cost Per Gallon	\$3.36
Cost Per Year	\$2,030.00
Cents Per Mile	\$0.14
Annual Savings	\$835.88

## Ford PIU ICE

Mile Driven Per Year	14,500
Miles Per Gallon	17
Gallons Per Year	852.94
Cost Per Gallon	\$3.36
Cost Per Year	\$2,865.88
Cents Per Mile	\$0.20

\* Average cost per charging station ranges from \$15,000 to \$90,000+

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# Vehicle Type Analysis

Police Comparison

## Ford F-150 PPV

Mile Driven Per Yr	14,500
Miles Per Gallon	19
Gallons Per Year	763.16
Cost Per Gallon	\$3.36
Cost Per Year	\$2,564.21
Cents Per Mile	\$0.18

## Ford Lightning PPV \* If available

Mile Driven Per Year	14,500
Miles Per Gallon	1.5
kW Per Year	9666.67
Cost Per kWh	\$0.14
Cost Per Year	\$1,353.33
Cents Per Mile	\$0.09
Annual Fuel Savings	\$1210.88

\* Average cost per charging station ranges from \$15,000 to \$90,000+

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## Vehicle Type Residual Value

2024 Toyota Camry Hybrid

MSRP

**\$28,855**

Residual Value After 10 Years

**\$10,175**

2024 Toyota Camry

MSRP

**\$26,420**

Residual Value After 10 Years

**\$7,750**

2023 Chevy Bolt (EV)

MSRP

**\$26,500**

Residual Value After 10 Years

**\$3,775**

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## Vehicle Type Resale Value

2024 Ford F-150 Lightning  
(XLT SuperCrew 4WD)

MSRP

**\$57,290**

Resale Value After Six Years

**\$17,925**

2024 Ford F-150 (XLT SuperCrew 4WD)

MSRP

**\$56,540**

Resale Value After Six Years

**\$19,900**

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## Key Takeaways

- There is no one size fits all solution for fleet electrification based on type of vehicle and usage.
- Fleet electric vehicle availability to government agencies is limited.
- Current application of electric vehicle replacements is based on right sizing and vehicle replacement cycles. Current inventory replacement cycle is approximately 9 years. Converting to electric may take several years based on age of fleet and the propensity to keep vehicles longer.
- Facilities sometimes lack sufficient infrastructure and electric utility capacity to support EV charging stations resulting in higher capital infrastructure investment to upgrade utilities therefore diminishing the ROI.
- Residual value of hybrid vehicles is historically greater than both ICE vehicles and EV.
- Based on fuel and electricity costs, hybrid represents an economic and sustainable alternative to both EV and ICE vehicles. (All things being equal)
- Auto manufacture's EV strategy is changing due to evolving technology (Battery, Hybrid, and Hydrogen), shifting regulatory landscapes, and changing consumer preferences.

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# Electric Vehicle Availability

**What Ford's surprise canceling of EV production in favor of 'profitable' ICE vehicles means for industry: 'Thought that growth was going to continue'**  
Other companies and states are trying to find ways to promote buying electric vehicles to keep them cheaper and to avoid the issues associated with public charging stations.

**Auto Industry Pulls Back On EVs As Consumers Hesitate Over High Price, Inconvenience**

**Ford is cutting back F-150 Lightning electric truck production**  
*Ford Slows Its Push Into Electric Vehicles*  
The automaker said it would delay new battery-powered models and shift its focus to hybrid cars, sales of which are rising fast.

**Path to Zero Emissions: Honda Latest Automaker Focusing on Hydrogen Technology**

**Mercedes-Benz delays electrification goal, beefs up combustion engine line-up**

**Honda and General Motors Halt \$5B Plans To Develop Affordable Electric Vehicles to Rival Tesla — What Now?**

**BMW says Goodbye to Electric Cars; it has now Solved the Problem of Hydrogen Engines — MES**

**Why Volvo has pulled the plug on its electric car brand**

**Why major car manufacturers are slowing production of electric vehicles**

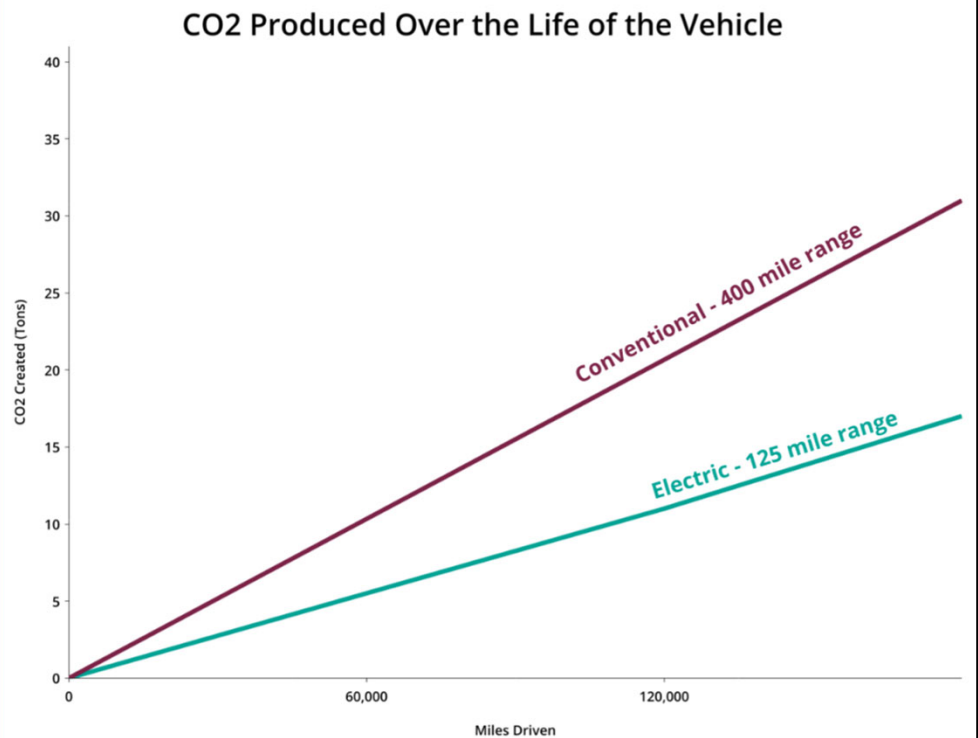
**Automakers Alter EV Plans**  
Ford and General Motors scale back electric vehicle production while the hybrid market remains hot

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## CO2 Impact

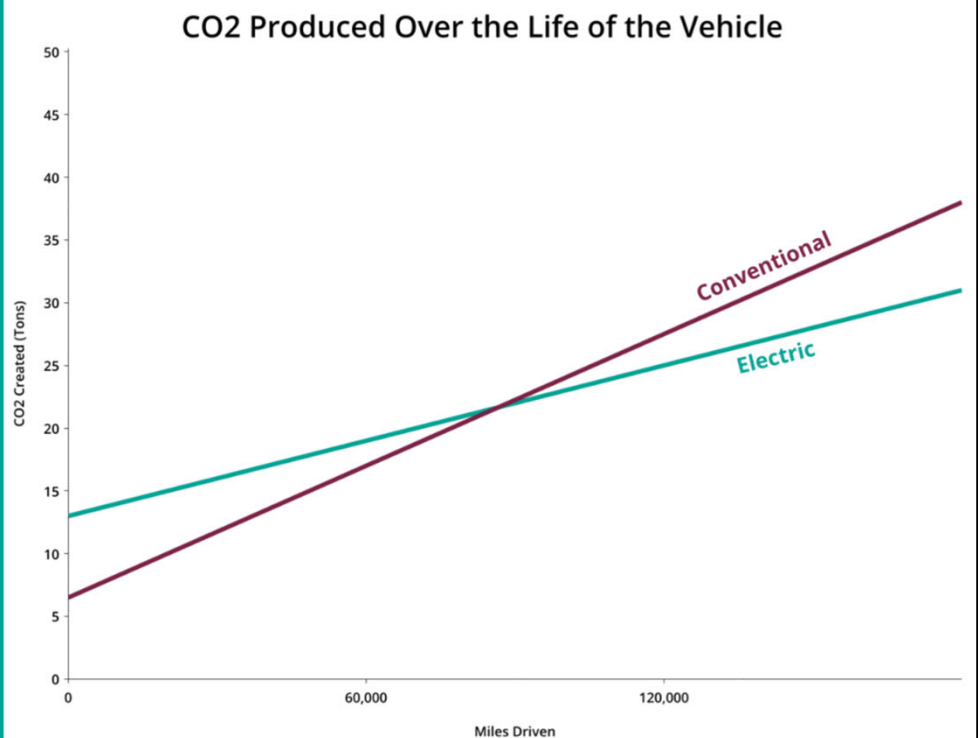
- Average age of vehicle before it's scrapped is 180,000 miles
- Average conventional vehicle produces roughly 30 CO2 tons during its use
- Roughly 30% of energy used to charge electric vehicles is from renewable energy sources
- Problem with graph is it says at zero miles driven, zero CO2 has been produced
- Have to take into account CO2 generated during production of vehicle



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## CO2 Impact

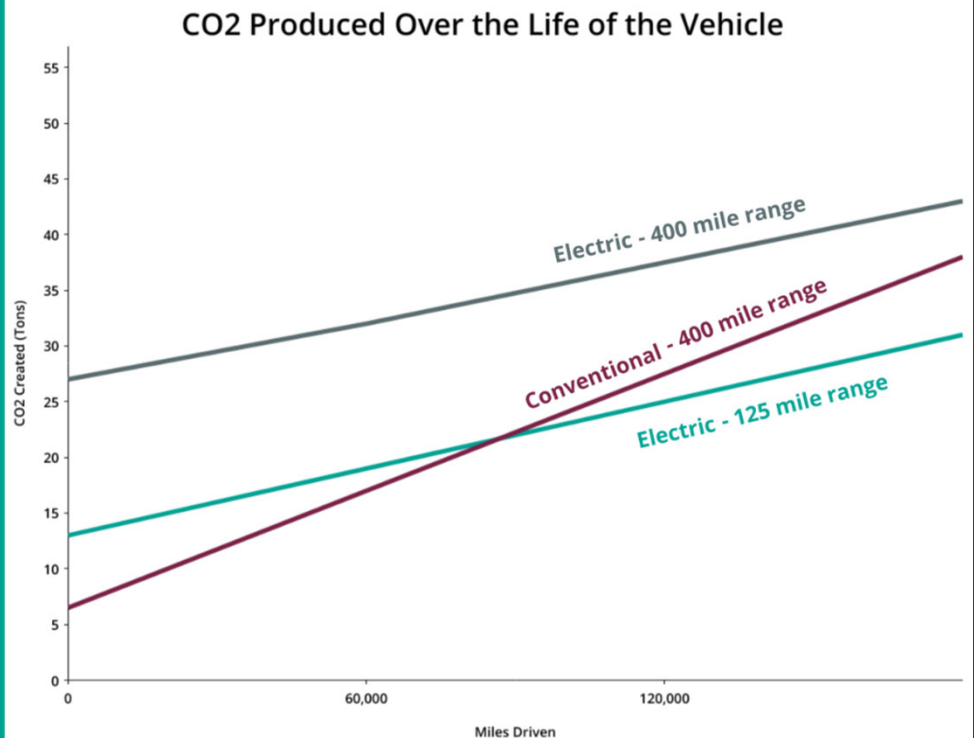
- Production of a lithium car battery requires a massive amount of energy
- Conventional vehicle comes to showroom having produced roughly six tons of CO2
- Electric vehicle comes to the showroom having produced about 12 tons of CO2
- Would have to drive electric vehicle close to 90,000 miles to offset the CO2 penalty of a conventional vehicle
- To make an accurate comparison we need to make the ranges the same



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## CO2 Impact

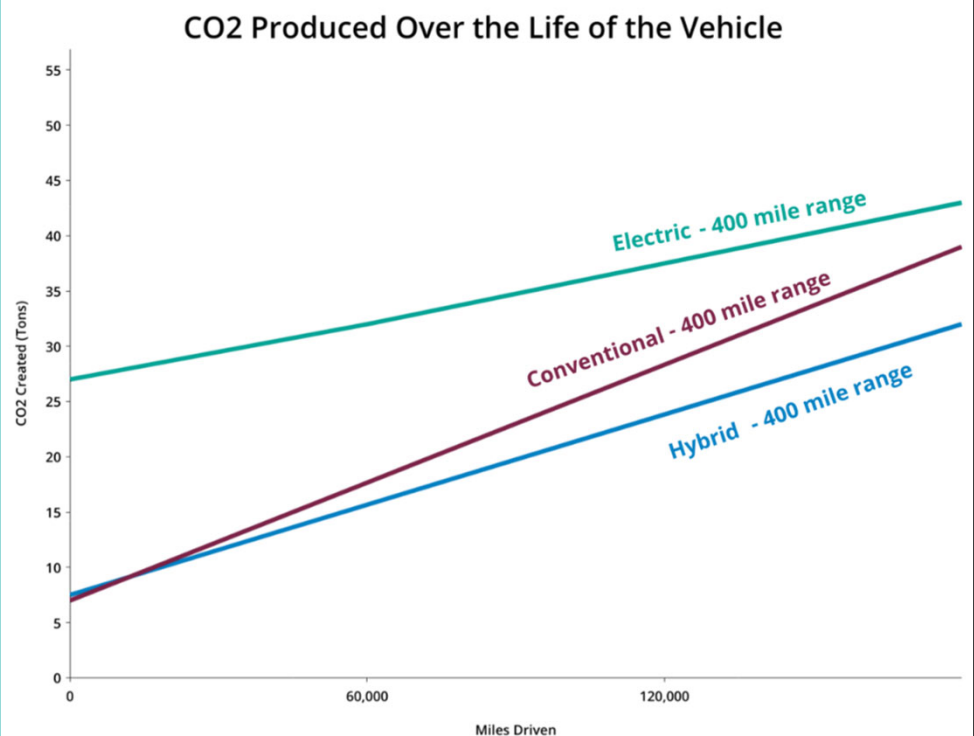
- A larger battery produces a much larger CO2 penalty
  - For every ton of mined lithium, 15 tons of CO2 are emitted into the air
- In its projected life it produces more CO2 than a conventional vehicle
- It produces more CO2 but currently we measure it as producing none from the tail pipe
- Calling these vehicles "Zero Emissions" is unproductive
- Hybrids bring flexibility and a lower CO2 impact on the environment



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## CO2 Impact

- Hybrids are far more efficient than conventional vehicles
- Hybrid vehicles have a much smaller battery so the CO2 impact is very similar to conventional vehicles while the end-of-life emissions are far lower
- To offset the CO2 produced from the electric vehicle you would have to drive a hybrid vehicle nearly 450,000 miles



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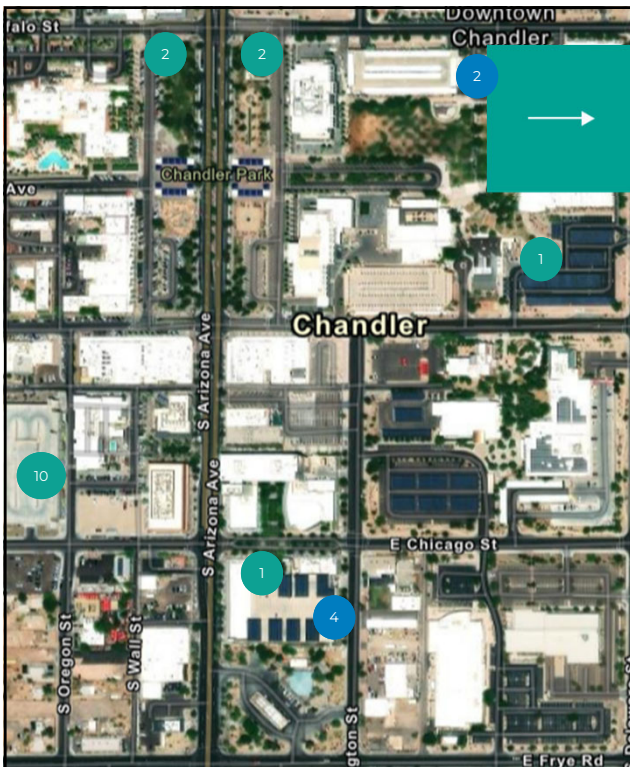
## Strategic Goal

Taking calculated risks to explore new technologies and innovative pilot programs that promote efficiency, productivity, sustainability and connectivity while demonstrating return on investment.

### ELT Action Plan Item

Complete the city's fleet electric vehicle charging study and define the municipal role for placement of charging stations in the community

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## Public Car Charging

- Staff received a grant from Salt River Project (SRP) to conduct a fleet electrification plan
  - Only considered fully electric vehicles even for heavy duty
  - Cost prohibitive
  - No hybrid or plug-in-hybrid vehicles included in the study
- Maricopa Association of Governments (MAG) Electrification Readiness Strategic Plan completed May 22, 2023
  - U.S. Department of Energy shows a surplus of 253 charging stations based on the current demand
- Grants for new car charging stations are not to meet the current demand, rather to encourage the purchase of electric vehicles and remove any potential barriers for electric vehicle ownership
- 16 public car charging stations are located downtown
  - Eight ports considered light use
  - One port considered moderate use
  - Seven ports considered heavy use
  - Heaviest use is 8:00 AM to 5:00 PM

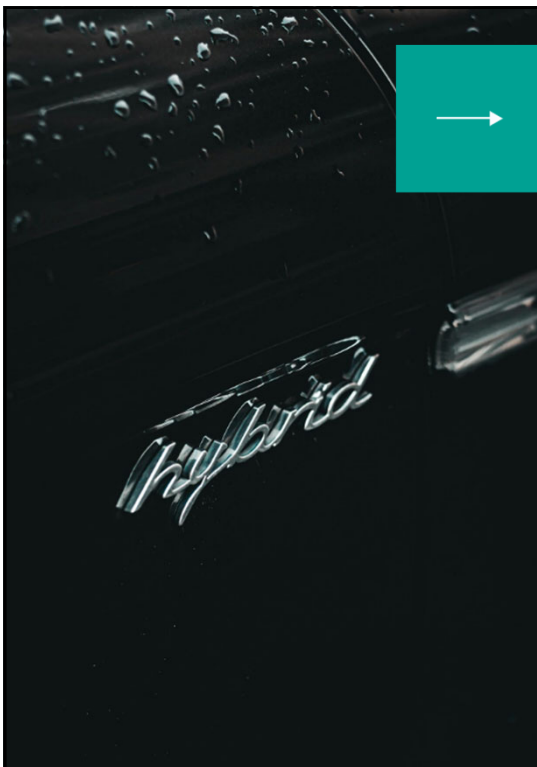
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## Public Car Charging

- Charging stations are strongly encouraged in new developments through zoning stipulations
  - Previous Council direction not to codify this
  - 167 new stations added at commercial developments
  - 124 new homes pre-wired for level two charging stations
- U.S. Department of Energy states that more than 80% of electric vehicle charging happens at home. The next highest used location for charging is at work
- Capacity has not been reached at current publicly available car charging stations downtown
  - When repairs are needed, providers are non-responsive, and parts are often on back order
- Cost of infrastructure if power is not readily available is extremely prohibitive
- Electric vehicle market will soon be changing with introduction of Hydrogen fueled vehicles and solid-state battery electric vehicles

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## Recommended Policy

- Fleet vehicle purchases will be evaluated using a Total Cost of Ownership (TCO) analysis, taking into consideration vehicle availability, intended purpose, infrastructure costs for charging stations, resale value, mileage, and cradle-to-grave CO2 emissions. The organization will prioritize the purchase of electric vehicles (EVs) when TCO analysis demonstrates cost-effectiveness and environmental benefits compared to ICE vehicles and HEVs.
- This policy will be reviewed annually to reflect technological advancements, market conditions, and infrastructure development. Adjustments will be made as necessary to maintain alignment with organizational goals and industry best practices.
- The organization is committed to reducing its environmental impact and operational costs through strategic fleet management. By utilizing TCO analysis and prioritizing EV and HEV acquisitions when feasible, we will enhance our sustainability efforts and ensure efficient and cost-effective fleet operations.
- City will require adequate charging stations at all new developments/redevelopments through developments agreements or zoning stipulations. Staff will include charging stations at new city facilities and parking lot rehabilitations where demand exists.

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# Questions?

SUSTAINABILITY AND TECHNOLOGY SUBCOMMITTEE  
NOVEMBER 8, 2024