

## **NOTICE AND AGENDA**

**AMENDED**

**HOUSING COMMISSION  
THURSDAY  
APRIL 28, 2022**

**VIRTUAL MEETING  
MICROSOFT TEAMS MEETING  
1:00 P.M.**

**ATTENTION**  
**IN-PERSON AUDIENCES AT HOUSING COMMISSION MEETINGS HAVE BEEN SUSPENDED UNTIL FURTHER NOTICE**

[Click here to participate in the online meeting](#)

The public can submit comments to [LBloom@FlagstaffAZ.gov](mailto:LBloom@FlagstaffAZ.gov). Public comment will be emailed to Housing Commissioners and will be read at the meeting by a staff member.

**1. Call to Order**

**2. Roll Call**

*NOTE: One or more Commission Members may be in attendance telephonically or by other technological means.*

ERIC DAVIS  
TYLER DENHAM  
NICOLE ELLMAN  
KAREN FLORES

SANDI FLORES  
KHARA HOUSE  
DEVONNA MCLAUGHLIN  
JACQUIE KELLOGG

MOSES MILAZZO  
ADRAH PARAFINIUK  
ROSS SCHAEFER

**3. Public Comment**

*At this time, any member of the public may address the Commission on any subject within their jurisdiction that is not scheduled before the Commission on that day. Due to Open Meeting Laws, the Commission cannot discuss or act on items presented during this portion of the agenda. To address the Commission on an item that is on the agenda, please wait for the Chair to call for Public Comment at the time the item is heard.*

**4. APPROVAL OF MINUTES**

- A.** Consideration and Approval of Minutes: Housing Commission Meeting, March 24, 2022. Approve the minutes of the March 24, 2022, Housing Commission and Sustainability Joint Meeting.

**5. GENERAL BUSINESS**

- A.** Update on hybrid (in-person and virtual option) for future Housing Commission Meetings

**6. DISCUSSION ITEMS**

**A.** Housing and Sustainability Discussion  
Discussion item.

- i. Housing and Sustainability Discussion. This material is provided by Housing Commissioner Karen Flores.  
Attached is research conducted by Commissioner Karen Flores. Please read both the email and article attached.

**B.** 2045 Regional Plan Update - With formal discussion during May's Housing Commission Meeting.

If time allows during the April Housing Commission Meeting, the City of Flagstaff's Comprehensive & Neighborhood Planning Manager, Sara Dechter will present an update on the 2045 Regional Plan. Commissioners will be asked to provide their feedback for May's meeting on their own time. If time does not allow for this presentation, Commissioners will be emailed this information and will be asked to provide feedback before the next Housing Commission Meeting.

Refer to the attached memo and PowerPoint presentation.

**7. INFORMATIONAL ITEMS TO/FROM COMMISSION MEMBERS, STAFF, AND FUTURE AGENDA ITEM REQUESTS**

**A.** Update from Housing Staff

**B.** Update from Housing Authority Commission Member

**C.** Update from Housing Commissioners and other informational items

**8. ADJOURNMENT**

CERTIFICATE OF POSTING OF NOTICE

The undersigned hereby certifies that a copy of the foregoing notice was duly posted at Flagstaff City Hall on \_\_\_\_\_, at \_\_\_\_\_ a.m./p.m. This notice has been posted on the City's website and can be downloaded at [www.flagstaff.az.gov](http://www.flagstaff.az.gov).

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 2022.

\_\_\_\_\_  
Leah Bloom, Housing Section



## **Housing Commission**

**4. A.**

**From:** Leah Bloom, Housing Project Manager

**DATE:** 04/28/2022

**SUBJECT:** Consideration and Approval of Minutes: Housing Commission Meeting, March 24, 2022.

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### **STAFF RECOMMENDED ACTION:**

Approve the minutes of the March 24, 2022, Housing Commission and Sustainability Joint Meeting.

### **Executive Summary:**

Minutes of Commission meeting are the requirement of Arizona Revised Statutes and, additionally, provide a method of informing the public of discussions and actions taken by the Housing Commission.

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### **Attachments**

Housing Commission & Sustainability Commission Joint Meeting Minutes

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# MINUTES

**CITY OF FLAGSTAFF  
HOUSING & SUSTAINABILITY  
COMMISSION JOINT MEETING  
THURSDAY  
March 24, 2022**

**ONLINE MEETING  
MICROSOFT TEAMS  
HOUSING & SUSTAINABILITY 4:30–5:30PM  
SUSTAINABILITY 5:30–6:30PM**

**Vision:** The City of Flagstaff is a culture and community that thrives in response to the Climate Crisis.

**Mission:** To advise Sustainability Section Staff on matters related to climate and sustainability, support community projects through Neighborhood Sustainability Grants, and provide feedback to the City Council on sustainability issues.

## **1. Call to Order the Joint Meeting of the Sustainability Commission and the Housing Commission**

Chair House called the joint meeting of the Sustainability Commission and the Housing Commission held March 24<sup>th</sup>, 2022, to order at 4:31 pm.

## **2. Roll Call**

*NOTE: One or more Commission Members may be in attendance telephonically or by other technological means.*

### Sustainability Commission

<u>  X  </u> Chair McCain	<u>    </u> Commissioner Dailey
<u>  X  </u> Vice Chair White	<u>  X  </u> Commissioner Konkel
<u>  X  </u> Commissioner Steiger	<u>  X  </u> Commissioner McCormick

### Housing Commission

<u>  X  </u> Chair Khara House	<u>    </u> Devonna McLaughlin
<u>  X  </u> Vice Chair Tyler Denham	<u>  X  </u> Moses Milazzo
<u>  X  </u> Eric Davis	<u>  X  </u> Ross Schaefer
<u>  X  </u> Karen Flores	<u>  X  </u> Sandi Flores
<u>  X  </u> Jacquie Kellogg	<u>    </u> Adrah Parafiniuk
<u>  X  </u> Nicole Ellman	

Others present: Lee Bryant (Minutes), Marissa Molloy (Staff Liaison), Jenny Niemann (Presenter), Leah Bloom (Presenter), Ramon Alatorre (Presenter), Nicole Antonopoulos (Presenter), Sarah Darr (Presenter), Justyna Costa (Presenter), Steven Thompson (Presenter), Jacob Raatz (Presenter), Becky Daggett (Councilmember Liaison)

## **3. Land Acknowledgement**

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The Flagstaff City Council humbly acknowledges the ancestral homelands of this area's Indigenous nations and original stewards. These lands, still inhabited by Native descendants, border mountains sacred to Indigenous peoples. We honor them, their legacies, their traditions, and their continued contributions. We celebrate their past, present, and future generations who will forever know this place as home.

**4. Public Comment**

Public Participation enables the public to address the Commission on any subject within their jurisdiction that is not scheduled before the Commission on that day. Due to Open Meeting Laws, the Commission cannot discuss or act on items presented during this portion of the agenda. To address an item that is on the agenda, please use the Teams Chat function: simply type in 'public comment' to indicate to the Chair that you would like to comment. The Chair will then recognize you when it is time for public comment, and staff will unmute your microphone if needed.

Emily Melhorn, City of Flagstaff Water Conservation Specialist, informed commissioners of the City's activities as part of the upcoming Water Awareness Month in April, including Flagstaff's seventh year participating in the Mayor's Water Pledge Challenge. Ms. Melhorn asked commissioners to spread the word regarding activities and to email Water Services if they would like to participate in public outreach.

**5. Business**

**A. Climate Action and Housing – Opportunities for Collaboration (60 minutes)**

Jenny Niemann, Climate Program Manager, Leah Bloom, Housing Project Manager, Ramon Alatorre, Climate & Energy Coordinator, Nicole Antonopoulos, Sustainability Director, Sarah Darr, Housing Director, City of Flagstaff

Requested Action: Informational and Discussion

Chair House invited Chair McCain to share the background of the joint meeting and a personal statement. Chair McCain thanked Sustainability Staff for initiating the collaboration and stated that the housing and climate emergency declarations pointed to a larger wellbeing emergency in Flagstaff. He was excited to be with those present to explore the synergies between the work on the housing and climate crises and was looking forward to charting a course toward wellbeing for all. Chair House echoed Chair McCain's excitement to collaborate and engage in

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### City of Flagstaff Sustainability Commission

meaningful partnership towards two major City priorities and understand the interconnectedness of addressing the housing and climate emergency declarations. Chair House thanked Housing and Sustainability Staff members for their time and guidance in this important conversation.

Nicole Antonopoulos introduced herself and the presentation then opened the floor to Sarah Darr. Ms. Darr said that while this was the start of formal collaboration, Housing and Climate Staff had been collaborating when possible and proposed increased collaboration, such as annual joint Commission meetings and bi-annual Commission Chair presentations. Ms. Darr noted that the 10-Year Housing and Carbon Neutrality plans offered opportunities for collaboration as did ongoing conversations regarding incentives, bond packages, and policy alignment.

Ms. Antonopoulos provided background information on the Climate Emergency Declaration adopted unanimously by the Flagstaff City Council on June 26, 2020 and outlined the eight commitments of the declaration. This declaration fueled the development of the 2021 Carbon Neutrality Plan. Ms. Darr provided background information on the Housing Emergency declaration adopted by the Flagstaff City Council on December 2, 2020, which fueled development of the 10-Year Housing Plan.

Ms. Darr framed housing issues by defining affordable housing and compared it to housing that is affordable. She reviewed local data regarding housing costs and income levels. Forty-five percent of all households in Flagstaff are housing cost burdened, 47% of all households in Flagstaff are low-income, and local housing costs are 29% higher than the national average. Ms. Darr reviewed what families in Flagstaff could afford regarding home costs and the basic housing continuum that many individuals move through.

Leah Bloom detailed the 10-Year Housing Plan development, guiding questions, and overall goal. Ms. Bloom outlined how the Housing Plan supported the Carbon Neutrality Plan, developed through collaboration between Housing and Climate Staff. Ms. Darr said that Flagstaff was not alone in dealing with housing and climate issues.

Jenny Niemann reviewed how the Carbon Neutrality Plan supported the Housing Plan by anticipating and preparing for change, focusing on

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vulnerable community members, addressing density, infill, and complete neighborhoods, and seeking affordability through lower transportation costs and lower home energy costs. Flagstaff is and will continue experiencing climate migration and visitation that will further affect climate and housing issues in the City. Ramon Alatorre discussed resources for Commissioners that addressed the economic implications of energy efficiency in housing development.

Ms. Darr discussed future collaboration between the Housing and Sustainability Commissions and funding possibilities to support both the 10-Year Housing and Carbon Neutrality Plan, such as a review of existing City code alignment and a Land Availability and Suitability Study to inform housing, sustainability, and economic vitality initiatives.

Chair House asked if Housing Commissioners would like to maintain quorum for questions. Ms. Darr offered that Housing and Climate staff could attend future Commission meetings to answer questions. Chair House suggested returning to questions at a future meeting as she and Ms. Darr confirmed that Housing Commissioners could not make quorum to continue.

Chair McCain thanked the Housing Commissioners for attending and asked all Sustainability Commissioners to email staff with questions.

**6. Adjournment of the Joint Meeting of the Sustainability Commission and the Housing Commission**

Chair McCain adjourned the joint meeting of the Sustainability Commission and Housing Commission on March 24<sup>th</sup>, 2022, at 5:36 pm.



## **Housing Commission**

**6. A. i.**

**From:** Leah Bloom, Housing Project Manager

**DATE:** 04/28/2022

**SUBJECT:** Housing and Sustainability Discussion. This material is provided by Housing Commissioner Karen Flores.

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### **STAFF RECOMMENDED ACTION:**

Attached is research conducted by Commissioner Karen Flores. Please read both the email and article attached.

### **Executive Summary:**

Informational material was provided by Housing Commissioner Karen Flores for discussion.

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### **Attachments**

Sustainability and Housing Research

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**From:** [Karen Flores](#)  
**To:** [Leah Bloom](#)  
**Subject:** RE: April 28th Housing Commission Meeting - Housing and Sustainability Discussion  
**Date:** Monday, April 25, 2022 9:26:57 AM  
**Attachments:** [image002.png](#)  
[image005.png](#)  
[image006.png](#)  
[Electric article.pdf](#)

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Hi Leah,

I realize I am past the date to get this to you so if it is too late I can just reference it on the call.

I have attached an article of a study that was done to determine electric costs upfront and monthly. This study contradicts the information presented by the sustainability commission in regards to upfront costs and monthly savings in utility costs with electricity. Their study found that in colder climates (they used Denver and Minneapolis) the upfront and monthly utility cost is actually higher in an all electric home.

I also have spoken with one of the large builders in Flagstaff who had a study conducted by E3 to determine the cost of going all electric in their new builds. (The builder is already building Net Zero). The study found that on an 1800 SF home, it would add \$13,000 in upfront costs (directly passed to the consumer) and would actually increase the monthly utility cost by 57%, compared to a home that had a mix of electric and gas. They mentioned that when they are working with buyers, the buyers want a choice of both electric and gas and most of their buyers chose gas stoves, gas heat, and water heaters. It was also pointed out that APS currently generates their electric power 25% by coal and 25% by natural gas. I realize they are looking to change that but when do they foresee that being feasible? There will be extra cost to have wind or solar power generation and that all gets passed on to the consumer through utility costs.

While we all know that the council has declared both a climate and housing emergency, the surveys that have been done indicate that our citizens feel affordable housing is the most important and concerning factor to them. There are many things that impact that affordability, but we should be cognizant of added costs that are going to further keep homes from being affordable from not only an upfront cost, but as new cost.

Has the sustainability commission met with and discussed their goals with a majority of the builders in the community? And not just the large production builders but small builders as well? Having their feed back and input is vital to determine the impacts on affordable housing.

Thanks,

Karen Flores

# How Much Does Whole-Home Electrification Cost?

Filed in [Codes and Standards](#), [Environment](#), [Sustainability and Green Building](#) on March 11, 2021 • [43 Comments](#)

<https://nahbnow.com/2021/03/how-much-does-whole-home-electrification-cost/>

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As policymakers look for ways to curtail the use of fossil fuels, new initiatives are being proposed to address not just how much energy is consumed but also how energy is generated and the types of equipment and appliances installed in a home.

Electrification is a strategy for decarbonizing the economy by drawing down the use of fossil fuels in transportation, buildings, and electricity generation. With this type of transition, renewable energy sources are envisioned to continue their growth at utility and community levels, along with an increase in energy storage and expansion of demand management solutions.

## **Electrification in Residential Buildings**

For residential buildings, proposed electrification strategies typically include:

- Replacing gas furnaces with air source heat pumps or ground source heat pumps;
- Replacing gas water heaters with heat pump water heaters;
- Replacing gas ranges with induction or conventional electric ranges;
- Adding electric vehicle charging capabilities to the building or parking spaces; and
- Replacing gas dryers with electric counterparts (conventional or heat pump).

[Home Innovation Research Labs](#) recently released a [new study](#) on the impact of electrification on an average-size single-family home. The study evaluates construction costs and annual energy use costs when compared to a house with gas equipment and appliances in Houston (CZ2), Baltimore (CZ4), Denver (CZ5), and Minneapolis (CZ6). The analysis was conducted for several basic electrification scenarios without onsite generation or storage and using local utility rates. Annual energy use costs were modeled using DOE/NREL-developed BEopt software.

Several themes were highlighted in the study (also see cost tabulations below):

- **Climate zone** had a strong influence on both construction costs and energy use costs. In colder climates (CZ 5 and 6), heat pumps with variable refrigerant flow rated for operation during low outdoor temperatures are needed. Often referred to as cold climate heat pumps, these systems are more expensive: \$8,000-\$9,000 more compared to a gas furnace. The total

added cost for an all-electric package modeled in the study ranged from \$10,886 to \$15,100 in colder climates (Denver and Minneapolis).

- **Annual energy use costs** were found to be higher in colder climates (by about \$275 in Denver and by \$650 in Minneapolis). Therefore, unlike electric cars which have a higher price tag but are less expensive to “fuel,” all-electric homes in these locations are more expensive to operate.
- **In warmer climates** (like Houston, CZ 2) where heating is less of a factor and standard heat pumps can be used, the incremental cost of constructing an all-electric house ranged from \$4,000 to \$11,200, and the energy use costs were on average comparable between a gas and an all-electric house.
- **In moderate climates** (Baltimore, CZ 4), the study evaluated costs for a range of heat pump options including variable refrigerant flow and standard systems. The specific heat pump choice affects the cost and the heating performance of the system during colder months.
- A larger capacity **heat pump water heater** (80 gallon) with a mixing valve is needed to match the performance of a gas water heater, particularly in mixed or cold climates. These HPWH units can cost as much as \$2,800 more compared to a standard gas water heater.
- Adding a **single Level 2 circuit for an EV charger** costs about \$600-650 to the consumer on average, not including the cost of the charger/connector. The price will be higher for homes where the electric panel is located more than 50 feet from the charging receptacle and/or when the electric panel needs to be upsized.
- An **induction range** could add \$1,000 to the price of the house compared to a gas range, plus the cost of compatible cookware. The induction range is intended to provide cooking performance more resembling a gas range.
- There are potential savings in all-electric homes by avoiding **community gas infrastructure**. Other studies noted in the report estimated average savings of about \$1,400 per house. These costs can vary significantly depending on the local utility tariffs.
- With the higher electric demand, an **upgrade in the electric service** on the utility side may be needed. Depending on the local utility tariffs, these costs may be significant and need further evaluation.

#### Range of Electrification Construction Costs Relative to a Baseline Gas Reference House

Electric Reference House Component	Houston		Baltimore		Denver		Minneapolis	
	Low	High	Low	High	Low	High	Low	High
Heat Pump	\$2,114	\$5,528	\$1,901	\$8,655	\$8,259	\$9,088	\$7,866	\$8,655
Heat Pump Water Heater	\$1,257	\$2,632	\$1,295	\$2,711	\$2,516	\$2,791	\$2,397	\$2,658
Electric Vehicle charger circuit(s)	\$617	\$2,040	\$635	\$2,102	\$654	\$2,163	\$623	\$2,060
Induction cooktop range	\$0	\$997	\$0	\$1,027	\$0	\$1,057	0	\$1,007
<b>Total added construction cost, \$</b>	<b>\$3,988</b>	<b>\$11,196</b>	<b>\$3,832</b>	<b>\$14,495</b>	<b>\$11,430</b>	<b>\$15,100</b>	<b>\$10,886</b>	<b>\$14,381</b>
Electrical service upgrade surcharge	Varies by Utility Territory							
Community gas infrastructure savings	Varies by Utility Territory							

#### Incremental Annual Energy Use Savings for Electrified Homes

	Houston	Baltimore	Denver	Minnesota
<b>Electrified Package 1:</b> Heat Pump 14 SEER/ 8.2 HSPF & 80g HPWH (3.75 UEF)	\$57	(\$14)		
<b>Electrified Package 2:</b> Heat Pump 2-stage 18 SEER/ 9.3 HSPF & 80g HPWH (3.75 UEF)	(\$10)	(\$127)		
<b>Electrified Package 3:</b> Heat Pump with variable speed inverter 19 SEER / 10 HSPF & 80g HPWH (3.75 UEF)	\$78	(\$23)	(\$274)	(\$650)
<b>Electrified Package 4:</b> Heat Pump with variable speed inverter 20 SEER / 13 HSPF & 80g HPWH (3.75 UEF)			(\$238)	(\$583)
<b>Electrified Package 5:</b> Ductless Heat Pump 19 SEER / 11 HSPF + 80g HPWH (3.75 UEF)	\$85	(\$105)	(\$408)	(\$630)

\*Electric Package 1 is compared to 80AFUE/13SEER furnace/AC and 50 gal 0.58 UEF water heater; other electric packages are compared to 96AFUE/16 SEER furnace/AC and 0.93 UEF tankless water heater.

\*\* Red values in parenthesis indicate more energy is used. Green values indicate energy savings.

Based on study findings, all-electric homes cost more upfront in comparison to gas homes. Electric homes in cold climates were also found to have higher ongoing utility costs. Jurisdictions considering electrification should evaluate these impacts on consumers and work with stakeholders to develop supporting economic measures.

For more information on electrification in homes and other energy code issues, contact [Vladimir Kochkin](#).

#### Related

[How Can Air Source Heat Pumps Help Reduce Greenhouse Gas Emissions Even in Cold Climates?](#) June 24, 2021 In "Sustainability and Green Building"

[The Impact Embodied Carbon Can Have on a Home's Environmental Footprint](#) September 29, 2020 In "Sustainability and Green Building"

[New Standard to Affect More Water Heaters](#) February 21, 2015 In "Codes and Standards"

## Comments (43)

[Trackback URL](#) | [Comments RSS Feed](#)

## Sites That Link to this Post

1. [All-Electric Future Comes At A Huge Cost – Aegis Commodities Group](#) | August 24, 2021
2. [All-Electric Future Comes At A Huge Cost - Energy News Today](#) | August 24, 2021
3. [All-Electric Future Comes At A Huge Cost - The Investors Roundtable](#) | August 24, 2021
4. [All-Electric Future Comes At A Huge Cost - Business News Analysis](#) | August 25, 2021
5. [All-Electric Future Comes At A Huge Cost - Business Market Report](#) | August 25, 2021

6. [All-Electric Future Comes At A Huge Cost - Business News Updates](#) | August 25, 2021
7. [All-Electric Future Comes At A Huge Cost - Stock News Bulletin](#) | August 25, 2021
8. [All-Electric Future Comes At A Huge Cost - Daily Stock Markets News](#) | August 25, 2021
9. [All-Electric Future Comes At A Huge Cost - Daily Business News](#) | August 25, 2021
10. ["All-Electric Future Comes At A Huge Cost" | naked capitalism](#) | August 25, 2021
11. [All-Electric Future Comes At A Huge Cost – Stock Markets News](#) | August 25, 2021
12. [All-Electric Future Comes At A Huge Cost – Voice of World](#) | August 25, 2021
13. [All-Electric Future Comes At A Huge Cost - Finance News Bulletin](#) | August 25, 2021
14. [All-electric future comes at a huge cost](#) | August 28, 2021
15. [All-electric future comes at a huge cost - Bisnis Heboh](#) | August 28, 2021
16. [All-electric future comes at a huge cost — RT Business News – NewsHunt NDNA](#) | August 28, 2021
17. [All-electric future comes at a huge cost - SAWA](#) | August 28, 2021
18. [All-electric future comes at a huge cost – TECKHACK](#) | August 28, 2021
19. [All-electric future comes at a huge cost — RT Business News – Voice Press](#) | August 28, 2021
20. [All-electric future comes at a huge cost — RT Business News - MO AFRICA NEWS](#) | August 28, 2021
21. [All-electric future comes at a huge cost | Majestic PR](#) | August 28, 2021
22. [All-electric future comes at a huge cost - Survivalnomics](#) | August 28, 2021
23. [All-electric future comes at a huge cost – PAKROOS.COM](#) | August 28, 2021
24. [All-electric future comes at a huge cost | Success Stories News](#) | August 28, 2021
25. [All-electric future comes at a huge cost Hear First, here](#) | August 28, 2021
26. [All-electric future comes at a huge cost — RT Business News](#) | August 28, 2021
27. [All-electric future comes at a huge cost – newshere.org](#) | August 29, 2021
28. [All-electric future comes at a huge cost – Newsaroundworld.org](#) | August 29, 2021
29. [All-electric future comes at a huge cost — RT Business News - Media Box Pakistan](#) | September 9, 2021

1.



**Armando Cobo** says:

March 11, 2021 at 3:26 pm

I've been working with Builders, mostly in CZ3-4, on Zero Energy Ready homes exclusively, and their costs increases are between 0% and 2%. I do realize that most of the homes I design are between 4k-6k sf, with the occasional larger home. Interestingly, the longer the Builder works on ZER homes, the lower the cost increases. Reading your study, I find that most of the electrification equipment is a high-end, not necessarily needed, especially with middle priced homes.

A more efficient package: Installing 2-stage heat pumps, 16 SEER, plus an 80 gal. Energy Starr WH, with recirculating pump, with a trunk and branch system. Induction cooktops, require much smaller exhaust fan than gas cooktops, and possibly not having to install a make-up air system. This could be huge savings. No gas lines.

All Energy Star plumbing, appliances, equipment, and lighting.

For a different opinion on costs, the Rocky Mountain Institute's study, published late 2018.

See: <https://rmi.org/insight/economics-of-zero-energy-homes>

[Reply](#)

○



**NAHB Now** says:

March 16, 2021 at 9:10 am

Armando: The Home Innovation study evaluates a range of equipment scenarios, including minimum efficiency heat pumps (single-stage 14 SEER – see Tables 1 and 7 in the report). This allows the reader to understand the relationship between various levels of equipment efficiencies and the corresponding degree of improvement in energy use. The study also evaluates 50-gallon and 80-gallon heat pump water heaters. A 50-gallon HPWH is not going to be acceptable to a family of four, particularly in locations outside of warm climates, and cannot be viewed as a default replacement for a 50-gallon gas water heater. Selection of a rangehood can be influenced by many factors, including cooking preferences, the size of the range, capacity of the burners, number of burners, location of the range in the kitchen, etc. All these factors come into play for either electric or gas range, with design choices available for both range types. The report does take into consideration savings from not installing gas piping in the house and potential savings from avoided gas infrastructure. Finally, the report provides a complete level of detail regarding the methods used and scenarios analyzed such that the results can be replicated and compared to other studies in a consistent manner.

[Reply](#)

2.  **Chris West** says:

March 12, 2021 at 11:57 am

I assume that the homes we are vtalking about are based code homes aka the worst home you can build and not break the law. If this study was performed to also include high performance homes these numbers change. Importantly the cost of utilities for CZ 5 and 6.

I would also argue that an additional \$10k is not a deal breaker for most consumers who have little knowledge of home prices. If you just show them a price for all electric homes w/o comparison to fossil fuel homes they wouldn't blink

Electric homes are also safer, having fewer fire events and zero CO death events. Important metrics not considered in this article.

[Reply](#)

○  **CG Covey** says:

March 23, 2021 at 2:56 pm

Where did you hear that there are less fire events in all electric homes? I've always heard that many home fires are caused by faulty/aged wiring or issues related to electrical appliances. It made sense to me when I heard it and just did a quick search to cite something. Found this list showing sources of house fires, many being electrical related – <https://www.realinsurance.com.au/home-insurance/home-safety/the-most-common-causes-of-house-fires>

[Reply](#)

▪  **Doug Farr** says:

April 26, 2021 at 8:44 am

The NFPA's five leading causes of fire (link below) were not summarized to clarify the relative fire risk of all- electric buildings. Nonetheless they cite the leading cause of fire is cooking where induction must be safer than gas cooking simply because of the absence of a flame.

<https://www.nfpa.org/Public-Education/Fire-causes-and-risks/Top-fire-causes>

Reply

3.  **Jason La Fleur** says:

March 15, 2021 at 12:38 pm

BeOpt is useful for these comparisons in new construction and I agree with the important earlier comment that the analysis above would be for code-compliant construction, not for those pursuing more advanced high-performance construction, which may change the value proposition.

One note is that the analysis applied to existing homes could be even more costly if not coupled with building envelope improvements to constrain operating cost impacts in the long term. Also, additional costs for upgrading electrical service line to an existing home (eg. commonly 60 or 100 amps upgraded to 400 amps) to accommodate electrification is another important cost consideration. Depending on location, the electrical utility may cover some of these service line increases, but in other areas these costs fall entirely on the building owner. I added EV load for my own home and maximized my 100 amp panel, but would not be able to change other end uses (space heating / water heating) without incurring significant out of pocket costs for upgrading service capacity.

Thanks to HIRL for doing this important analyses and sharing the results.

Reply

4.  **Susanna** says:



March 15, 2021 at 6:55 pm

So you want zero fossil fuels. I ask what is the source of fuel for electricity. I have noted the driver for these options are the electricity companies. ... of course! I don't recall reading about the cost of utilities to the client. We provide our clients hi efficiency gas options. Cost of equipment is less than electric equipment. Cost of operation w gas is very significantly less. I do agree geothermal is a good option.

Reply

○



**Ron Jones** says:

March 16, 2021 at 6:07 pm

Respectfully, first cost is not full cost and the traditional balance sheet never takes into account pollution, carbon emissions and long term impacts on human health, the environment and/or climate. If only it was that simple.

There will be no resolutions to the global issues we are having to deal with and the kind of world we are leaving to future generations as long as we are looking at them through the lens of one house at a time or one appliance at a time. The building industry must take on accountability just like all the other major sectors, and our impact is immense.

The journey to net zero will be long and difficult but we will never get there unless we start in earnest.

Reply

▪



**NAHB Now** says:

March 17, 2021 at 2:14 pm

Ron: Development of effective and equitable public policy requires that all relevant information be part of the discourse. Cost is an important consideration because it directly

and immediately impacts consumers, with a disproportionate effect on some segments of the market. Carbon reduction strategies must evaluate these impacts and offer solutions that minimize economic disruption on families, prioritize options that achieve maximum balance of benefit vs. impact, help overcome valuation and financing barriers, and emphasize market incentives that support a broad range of programs.

[Reply](#)



▪ **Ron Jones** says:

March 17, 2021 at 4:00 pm

Thank you for making my argument for me. No one has suggested that the impacts of cost be ignored. Fundamentally we are in agreement. Where we differ is that the considerations of costs do not terminate at the closing of a sale and reach far beyond the bottom line of the builder. It follows through the entire serviceable life of the residence, which has potential implications not only for multiple families as owners and occupants but for the larger community as well. The accountability I speak of spans a far more complex range of priorities to achieve that “maximum balance of benefit vs. impact” you allude to.

[Reply](#)



○ **Janice Romanosky** says:

April 22, 2021 at 8:28 am

As the country moves toward electrification, those relying on gas will eventually bear an increasingly larger proportion of the cost of maintaining that infrastructure. As such, gas will become less affordable over time and the cost to convert to all electric will be beyond the reach of most homeowners. Viewed from the perspective of the end user, this alone might be reason enough to avoid fossil fuels in new construction.

[Reply](#)

5.  **Griffin Hagle** says:

[March 16, 2021 at 5:08 pm](#)

Lots of focus on upfront costs in this analysis and none on the benefits that are driving massive interest in beneficial electrification (which is generally coupled with envelope upgrades). Why?

I live in CZ 7 (Alaska) and have few qualms about electrifying my 70-year-old home since our remodel will reduce its design heating load nearly 70% percent. I'm glad to pay more for energy per delivered unit since my absolute usage will be much lower. Give me the 6 oz filet mignon over the pound of hamburger any day.

I can't say the same about leaving the current gas infrastructure in there. I live in a seismic area of a state that is second in the country in carbon monoxide poisoning and I've personally felt the percussive wave of a house being blown off its foundation by a fossil gas leak from over a mile away. Not keen to experience that firsthand.

<https://www.safewise.com/blog/states-carbon-monoxide-poisoning/>

[http://www.thearcticsounder.com/article/2011explosion\\_destroys\\_house\\_in\\_utqiagvik](http://www.thearcticsounder.com/article/2011explosion_destroys_house_in_utqiagvik)

"The induction range is intended to provide cooking performance more resembling a gas range."

According to whom? My wife and I chose induction because it's a far superior experience to a gas range.

[Reply](#)

6.  **Susan McFaddin** says:

[April 23, 2021 at 11:11 am](#)

Was there any analysis of the social cost of carbon?

[Reply](#)



**NAHB Now** says:

[April 29, 2021 at 4:53 pm](#)

The study focuses primarily on construction costs and energy costs. You can find the [complete analysis here](#).

[Reply](#)

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## **Housing Commission**

**6. A.**

**From:** Stacy Fobar, Deputy City Clerk  
**DATE:** 04/28/2022  
**SUBJECT:** Housing and Sustainability Discussion

---

### **STAFF RECOMMENDED ACTION:**

Discussion item.

### **Executive Summary:**

A follow-up discussion from March's Housing and Sustainability Joint Commission Meeting.

---



## **Housing Commission**

**6. B.**

**Co-Submitter:** Sara Dechter, AICP, Comprehensive Planning Manager

**From:** Leah Bloom, Housing Project Manager

**DATE:** 04/28/2022

**SUBJECT:** 2045 Regional Plan Update - With formal discussion during May's Housing Commission Meeting.

---

### **STAFF RECOMMENDED ACTION:**

If time allows during the April Housing Commission Meeting, the City of Flagstaff's Comprehensive & Neighborhood Planning Manager, Sara Dechter will present an update on the 2045 Regional Plan. Commissioners will be asked to provide their feedback for May's meeting on their own time. If time does not allow for this presentation, Commissioners will be emailed this information and will be asked to provide feedback before the next Housing Commission Meeting.

Refer to the attached memo and PowerPoint presentation.

### **Executive Summary:**

Refer to the attached information.

---

### **Attachments**

Regional Plan Memo

Regional Plan Presentation

---



## MEMORANDUM



**Date: April 21, 2022**

**To: Housing Commission**

**Cc: Leah Bloom, Housing Project Manager**

**From: Sara Dechter, Comprehensive Planning Manager**

**Subject: Flagstaff Regional Plan Update Scoping**

---

The Flagstaff Regional Plan is a policy guide, serving as the general plan for the City of Flagstaff and an amendment to the Coconino County Comprehensive Plan. The plan covers a range of topics with information on current conditions, our vision for the future carefully developed goals and policies to realize the future vision. The Flagstaff Regional Plan will be developed over four years, corresponding to four different phases of public participation and development (see slides for graphic).

At the May Housing Commission meeting, the project team will engage the Commission in a SWOT Analysis. SWOT stands for Strengths, Weaknesses, Opportunities, and Threats and during this exercise, the board members will be asked to enter in their assessment of the current Flagstaff Regional Plan 2030 related to housing affordability and neighborhoods and to consider what opportunities or threats could be foreseen in the update process.

To participate in this activity, members of the Housing Commission will need to fill out the digital whiteboard by May 16, 2022, at 5 pm. Staff will send the link to commissioners Monday, April 25 and will consolidate your input to prevent duplication. At the May meeting, staff will take you through a facilitated process of rating the ideas exchanged among members. We also ask that you have a laptop, tablet, or phone with internet access during the meeting. This activity will only be available during the meeting and members of the Commission can prepare by reviewing the attached slides and the chapters of the current Flagstaff Regional Plan provided. If you would like to review the entire Flagstaff Regional Plan 2030, it can be found online at [www.flagstaff.az.gov/regionalplan](http://www.flagstaff.az.gov/regionalplan).

If you would like to provide other comments to the Regional Plan Update team, you may email Sara Dechter at [sdechter@flagstaffaz.gov](mailto:sdechter@flagstaffaz.gov).



1

## Today's Presentation

- What is the Regional Plan?
- What is in the Flagstaff Regional Plan 2030?
- What is being done to update the Regional Plan?
- Strengths, Weaknesses, Opportunities, and Threats (SWOT)

2



3

**Why is it a “Regional Plan”?**

**City of Flagstaff**

- Serves as the General Plan
- Must be ratified by voters every 10 years
- Supports land use decisions, policy making, the 100-year water supply designation and transportation planning plus many other efforts

**Coconino County**

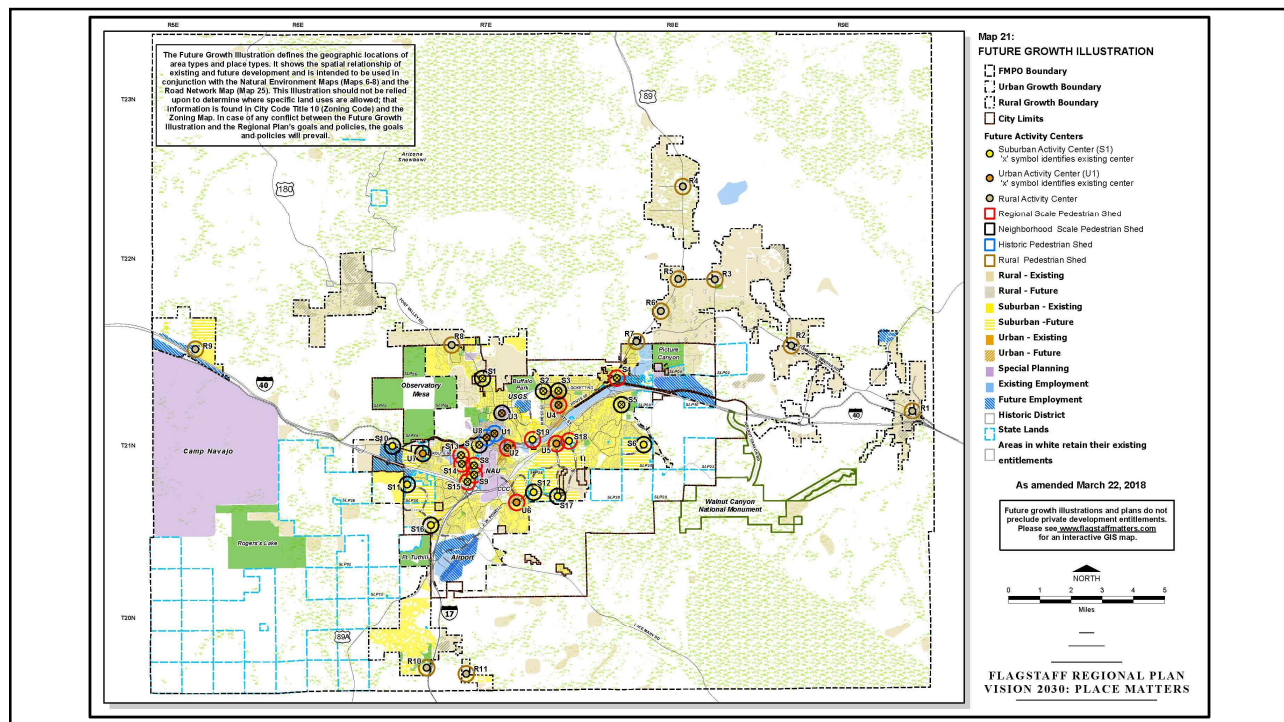
- Is an amendment to the County Comprehensive Plan\*
- Adopted by the Board of Supervisors as a Major Amendment
- Provides a map of area and place types that is further refined by area plans

\*The Comprehensive Plan has no land use map.

**TEAM FLAGSTAFF WE MAKE THE CITY BETTER**

4





5

## What did the public want the Flagstaff Regional Plan 2030 to do?

- Hold government accountable for publicly derived policy outcomes and goals
- Guide physical and economic development
- Establish priorities for public action
- Direction for complementary private decisions
- Encourage predictable decision making



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# Overview of Current Plan



## Flagstaff Regional Plan 2030

- More emphasis on goals and policies than maps
  - 97 goals
  - 508 policies
- Generalized land use map with clearly identified activity centers based on scenario planning
- Robust basis for transportation modeling with Metroplan based on background data
- Multimodal transportation emphasis
- Foundation for 100-year water supply designation by Arizona Department of Water Quality

7



# Related Vision and Goals



***In 2030, we continue to build and improve healthy and diverse neighborhoods, while maintaining affordability and connectivity to the greater region.***



8



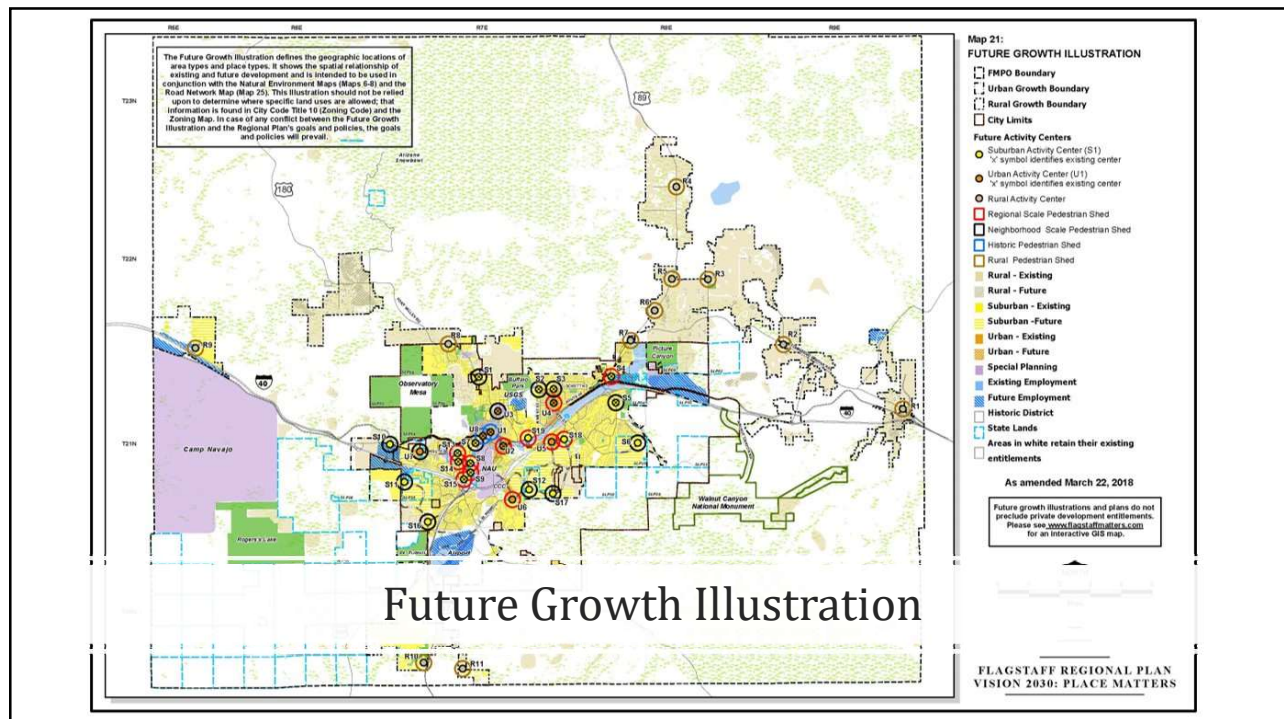
# Key policies



## NEIGHBORHOODS, HOUSING, AND URBAN CONSERVATION

- Goal NH.1. Foster and maintain healthy and diverse urban, suburban, and rural neighborhoods in the Flagstaff region
- Goal NH.2. Look to downtown Flagstaff as the primary focal point of the community character.
- Goal NH.3. Make available a variety of housing types at different price points, to provide housing opportunity for all economic sectors
- Goal NH.4. All housing is safe and sanitary
- Goal NH.5. Eliminate homelessness
- Goal NH.6. Neighborhood conservation efforts of revitalization, redevelopment, and infill are compatible with and enhance our overall community character.

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## Flagstaff's 10-Year Housing Plan



Create housing options for households at all income levels and family sizes occupied by local residents.

- **Create 2:** Ensure that the Flagstaff Regional Plan includes robust affordable housing goals and policies.
  - Update the Regional Plan policies to support increased density related to affordable housing.
  - Identify suburban areas to support greater density and intensity of development
  - During the update of the Flagstaff Regional Plan, revise the Community Character chapter for goals and policies to include cost saving methods that reduce the conflict between affordable housing, historic preservation, and urban design.

11



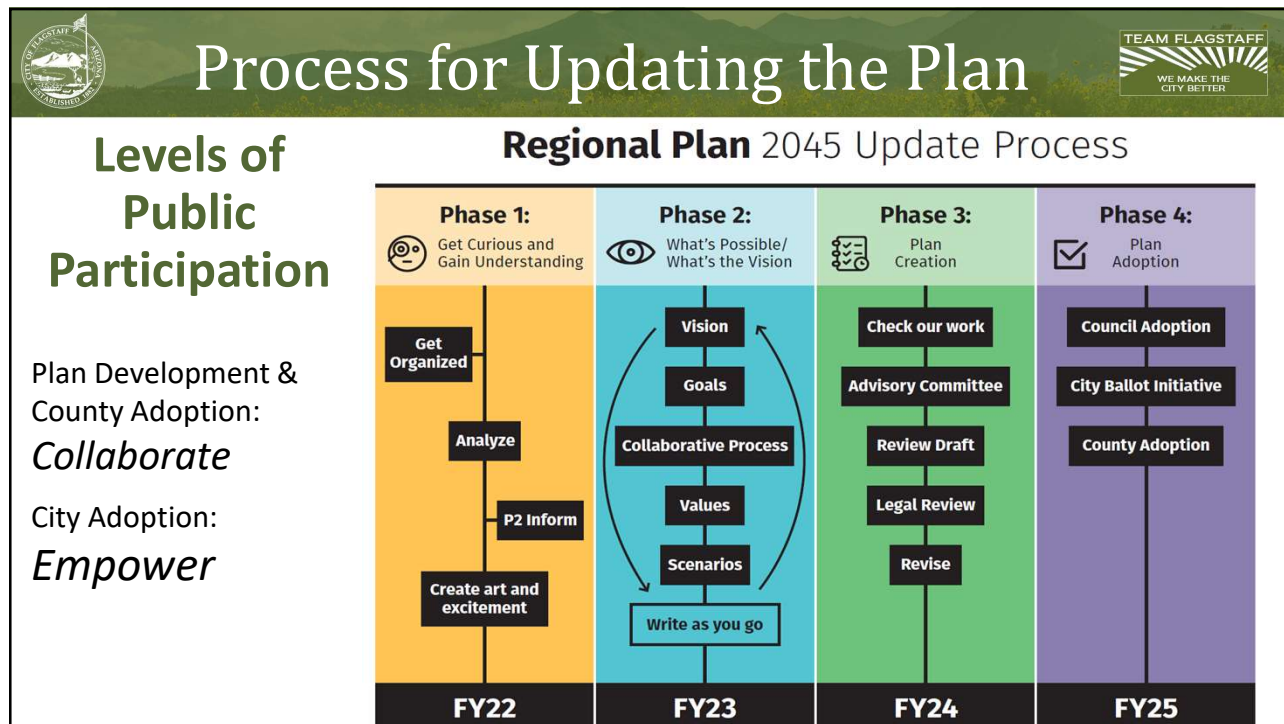
## Flagstaff's 10-Year Housing Plan



- **Preserve 1:** Encourage the adaptive reuse of buildings
  - Review the Land Use Goals and Policies in the Regional Plan, Specific Plans, and City code to remove barriers to adaptive reuse for the creation of affordable housing.
- **Protect 2:** Ensure affordable housing is a part of every Flagstaff neighborhood and work to address disparate impact as part of any development or redevelopment.
  - Encourage diversity in housing options in all neighborhoods, understanding that exclusive communities are incompatible with the City of Flagstaff's mission to protect and enhance the quality of life for all.

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# The Next Regional Plan



## Guiding Process Principles

*Based on:*

- *Lessons Learned*
- *Practice from specific and area plans*
- *Feedback from partners and staff*

- Right People, Right Agenda, Right Timing
- Experts and Public Work Together
- Need for Outside Facilitation
- Equity and Inclusion
- Clear Expectations for Endorsement

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## Project Team Contacts

City of Flagstaff Contact  
Sara Dechter, (928) 213-2631  
sdechter@flagstaffaz.gov

Coconino County Contact  
Melissa Shaw, (928) 679-8868  
mshaw@coconino.az.gov




## Commission SWOT Analysis

**Strengths** - What are the strengths of the Flagstaff Regional Plan 2030?

**Weaknesses** - What are the weaknesses of the Flagstaff Regional Plan 2030?

**Opportunities** - As we are revising the Flagstaff Regional Plan, what opportunities do we have that we did not in the past?

**Threats** - What could negatively impact the creation or implementation of an updated Regional Plan?

Link to Digital Whiteboard in the meeting chat. **For Commissioners only.**

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# Data Analysis and Forecasting

- Requires managing and analyzing over 180 data metrics
- Looking within and beyond the plan area
- Scenario planning and sensitivity testing ensure longevity and flexibility of plan



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## Emerging Issues



### Carbon Neutrality

- Stronger emphasis on bicycle, pedestrian and transit
- More integration of climate change into land use, economic development and housing

### Equity and Inclusion

### New Housing Affordability strategies

### Public Health

- Food Systems
- Health resources and accessibility
- Health system capacity and resiliency

### Emerging Technology

- Vehicle Automation and transportation electrification
- Broadband as an essential utility

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