Flagstaff Climate Action Update

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Agenda:
1) Flagstaff’s climate action planning progression
2) Path to carbon neutrality
3) Discussion
Flagstaff’s climate work on paper

<table>
<thead>
<tr>
<th>Year</th>
<th>Action</th>
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<tbody>
<tr>
<td>2007</td>
<td>joined the US Mayors Climate Protection Agreement</td>
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<td>2018</td>
<td>Adopted the Flagstaff Climate Action and Adaptation Plan</td>
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<td>2020</td>
<td>Council Declared a Climate Emergency</td>
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Background climate work and base-building

- US Mayor’s Climate Protection Agreement
- Energy efficiency programming
- Resilience and Preparedness Study
- Greenhouse gas inventories
Background climate work and base-building

2018 Climate Plan

- Mitigation
- Adaptation
- Equity

The Climate Emergency Declaration

September 20, 2019
Flagstaff community members gathered signatures for a petition requesting a Climate Emergency Declaration

January 28, 2020
Hundreds of well-organized community members spoke at City Council, making the case for the climate emergency declaration

June 23, 2020
The Climate Emergency Declaration Resolution 2020-09 was adopted unanimously by City Council
The Climate Emergency Declaration

1. Dramatic increase in ambition
2. City-wide mobilization
3. Educating residents and engaging youth
4. Full community participation
5. Prioritize vulnerable communities
6. Nationwide call for mobilization
7. Sets a goal of carbon neutrality by 2030
8. Calls on all governments to act
Our progression in climate work and base-building:

- **Background climate work and base-building**
- **2018 Climate Plan**
- **Climate Emergency**
- **Carbon Neutrality Plan**
- **Equity Review**
- **Resilience and Adaptation Update**

Timeline:

- 2007-2017
- 2018
- 2020
- 2021
- 2021-2022
Climate action through a regional plan

- Importance of the comprehensive / regional plan
  - Development approvals
  - Transportation planning
  - Specific plans
Our progression to date:

- 2014 Flagstaff Regional Plan
- 2018 Climate Plan
- Climate Emergency
- Carbon Neutrality Plan
- Regional Plan Amendment
- 2024 (?) Regional Plan
Climate action outside of a climate plan

- Other plans
- Investments and infrastructure
- Policies and codes
How we’ll get to carbon neutrality

- Cleaner *Electricity*
- Reducing Building *Energy* Use
- Building *Fuel* Switching
- *Materials* Management
- Transportation Shift
- *Electric* Mobility
- Carbon *Sequestration*
Carbon Neutrality

**CO₂ Emissions**

**CO₂ Reductions + Sequestration**

**TONS CO₂ / YEAR**

**OUR CARBON FOOTPRINT**
Flagstaff’s Greenhouse Gas Emissions

#1
Powering Buildings

#2
Car Emissions

Community Emissions by Sector: 2016 and 2018 Average

- Building energy: 45.1%
- Transportation: 42.0%
- Waste: 10.7%
- Water & Wastewater: 0.7%
- Process & Fugitive Emissions: 22.0%
- Process & Industrial: 1.6%
- Residential: 4.9%
Preliminary Emission Reduction Targets Needed to Achieve Carbon Neutrality
Preliminary Emission Reduction Targets Needed to Achieve Carbon Neutrality

1. Solid waste management
2. Travel mode shift
3. Clean vehicles
4. Air travel
5. Industrial energy
6. Commercial energy
7. Comm. new construction
8. Residential energy
9. Resid. new construction
10. Carbon sequestration or offsets

Total Greenhouse Gas Emissions (MTCO\textsubscript{2}e)

- Business as Usual (BAU)
- 2030 - CARBON NEUTRALITY
Carbon Neutrality Pathways

Scenario A: Transformative change
Doing everything we can to reduce emissions before relying on sequestration.
  • Disruptive, systemic shifts in transportation and land use.
  • Relies as little as possible on carbon sequestration.

Scenario B: Behind the scenes
Focus on easier changes and technological advancement. Avoids the most disruptive changes.
  • LOWER emissions reductions.
  • MORE carbon sequestration.
100% of our electricity will come from sources that do not emit greenhouse gases.

**How we get there**

- SOLAR!
  - Now the cheapest energy source in history.
  - Solar United Neighbors
  - Potential Red Gap Ranch solar project.
<table>
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<tr>
<th>What it means</th>
<th>Reducing emissions from heating, cooling and powering buildings by 80% by 2030.</th>
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</table>
| How we get there | • More efficient buildings  
• More aggressive building codes: eventually requiring net zero energy buildings.  
• Retrofitting 12,500 homes by 2030. |
**Fuel Switching**

**What it means**

Shifting from fossil fuels to electricity for water heaters, furnaces, stoves, industrial processes.

**How we get there**

- Electrify everything.
  - Retrofit 12,500 homes by 2030.
  - Electrify City-owned buildings.
- State legislation.
Materials Management

What it means

• Reducing consumption
• Diverting more materials from the landfill

How we get there

• Composting drop-off sites.
• Landfill gas collection and flare system.
• Large-scale digestion and solar installations at the landfill.
Transportation: The Big Shift

What it means

• Depending far less on cars.
• Taking many more trips by walking, biking and the bus.
• Accepting appropriate density.

How we get there

• Commitment to transformation, bold action and difficult decisions.
• 15-minute neighborhoods.
• Investment in active transportation infrastructure.
# Electric Mobility

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<th>How we get there</th>
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<td>• New electric mobility: e-bikes, e-bike share, hoverboards, scooters.</td>
<td>• Electrification is not a silver bullet: priority must be reducing car usage.</td>
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<tr>
<td>• Electric busses (Mountain Line)</td>
<td>• Welcoming new technologies and modes of travel.</td>
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<td>• Electric vehicles.</td>
<td>• Prioritizing the vehicles driving the most miles.</td>
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Carbon Sequestration

What it means

The process of capturing and storing atmospheric carbon dioxide, removing it from the atmosphere.

How we get there

• The amount of sequestration needed depends on the amount of emission reductions we achieve through climate action.
• Exploring regenerative agriculture, meadows, and forests.
• Red Gap Ranch is a possible site for an innovative sequestration project.