

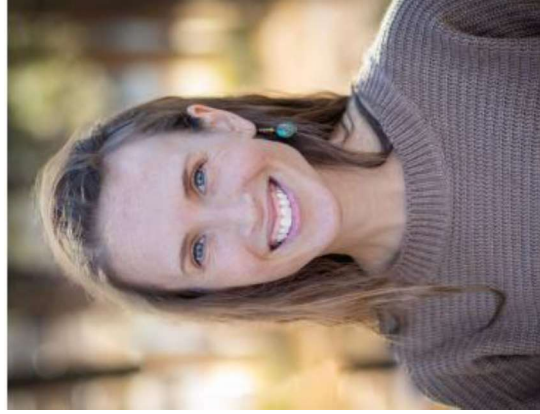
Carbon Neutrality Plan Quarterly Update

May 10, 2022





Our Team



Jenna Ortega
Equity, Resilience,
Community
Engagement



Jenny Niemann
Transportation and
Land Use, Climate
Planning



Nicole Antonopoulos
Renewable Energy,
Resilience Planning,
Energy Efficiency



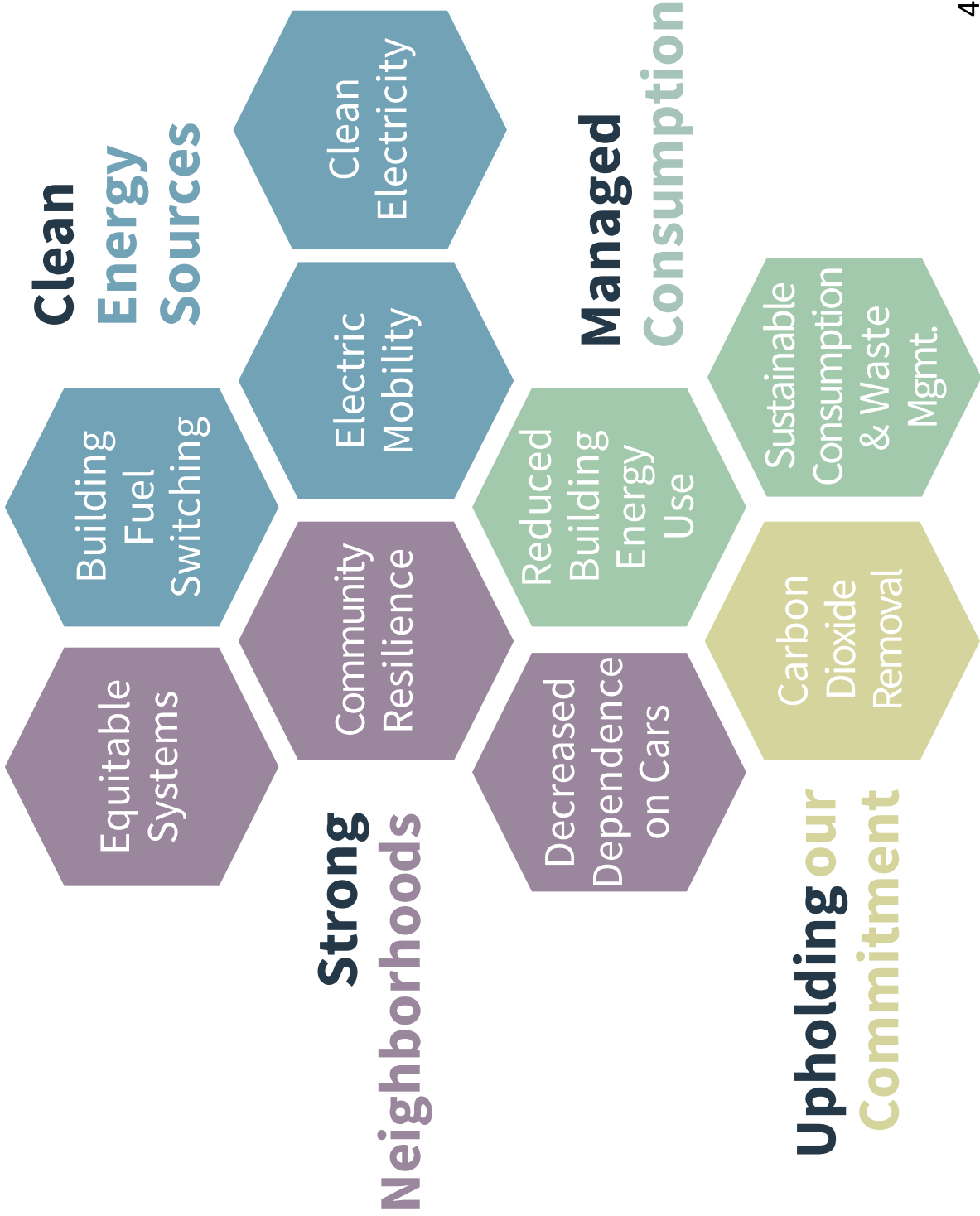
Ramón Alatorre
Greenhouse Gas
Analysis, Fuel
Switching, Carbon
Dioxide Removal 2



Today's Discussion

1. Reaching Carbon Neutrality - Action Update
 - Strong neighborhoods
 - Clean Energy Sources
 - Managed Consumption
 - Upholding our Commitment
2. CNP Annual Emission Calculations and Revisions
3. Investment Strategy

Carbon Neutrality Action Updates



Community Resilience

- National League of Cities Grant
 - Flagstaff HEPA Filter Program
 - Resilient Neighborhood Network
 - Museum Fire Flood Mitigation
- APS Grant
 - Flagstaff HEPA Filter Program
- Key Partners advancing climate planning:
 - Flagstaff Unified School District
 - Northern Arizona University – *Carbon Neutrality Commitment*

Is your home air quality impacted by forest fires?

Apply for a FREE air purifier

Application deadline:
May 21st, 2021
see below for details





Community Resilience

- Three AmeriCorps VISTA positions are currently open with our climate team!
- Youth Climate Leadership
- Clean Jobs Workforce Development
- Equitable Recovery and Resilience

JOIN OUR

CLIMATE TEAM!

YOUTH CLIMATE LEADERSHIP VISTA

Work with Flagstaff's high school and middle school students to accelerate climate action in schools. Empower Youth leaders.

CLEAN JOBS & WORKFORCE DEV. VISTA

Develop an initiative that prepares Flagstaff's workforce for the climate jobs of the future, from electric vehicles to efficient homes.

EQUITABLE RECOVERY & RESILIENCE VISTA

Build strength and resilience in Flagstaff's neighborhoods. Build capacity to help our community recover and bounce forward.



VISTAs serve a full year term in our office - 35 hours / week.

PRIORITY application
deadline: May 1st



Apply today: www.Flagstaff.AZ.gov/Sustainability

Equitable Systems

- Climate Advisory Groups: Bringing community voices and participation into local climate action
 - **Youth** Advisory Group
 - Earth Day Celebration
 - **Business** Advisory Group
 - First meeting on May 12th
 - **Equity** Advisory Group
 - Recruitment happening now!





Equitable Systems

Community Engagement

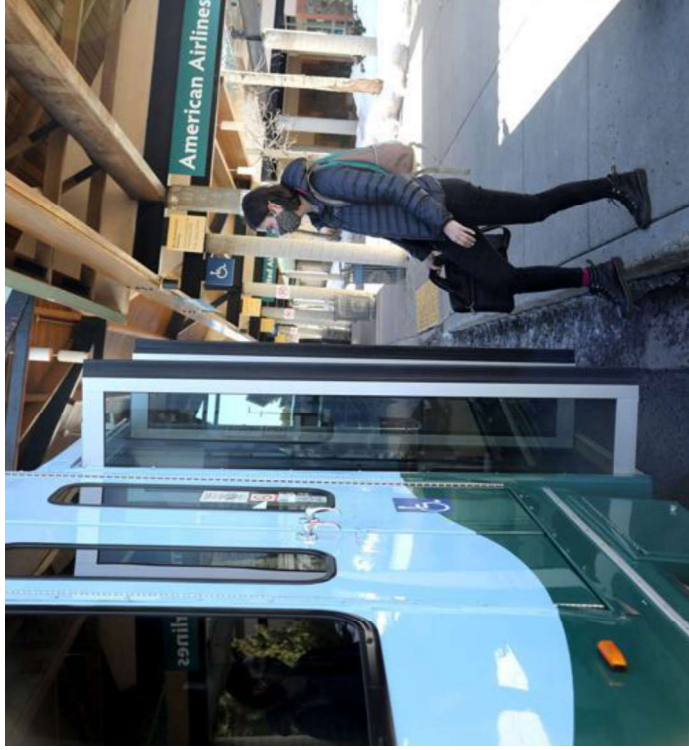
- Sustainability Leaders
- Award of Distinction by Arizona Forward
- Flagstaff Regional Plan Snapshot Series
- Climate Ambassadors
- Home Energy Efficiency Workshops
- Innovate Waste and Carbon Dioxide Removal Challenge
- Cold Weather Heat Pump Workshops
- Flagstaff Earth Day Celebration

**958 residents were
engaged in 94
climate engagement
activities from
January – April**

**PLUS ~ 1,000 Earth
Day attendees**

Decreased Dependence on Cars

- The first development took advantage of the Residential Sustainable Building Incentive, Aura:
 - reduced natural gas usage to ~ 1.5% of total building energy usage
 - is located within a 5-minute walk of transit
 - will be 15% more energy efficient than the current City code
 - will provide MORE housing than standard zoning allows, due to the incentive
- City-NAU partnership: students in the Community-University Public Inquiry (CUPI) program focused on student awareness and use of transit
- Recommendation to the Federal Highway Administration advising how the administration of Infrastructure Investment and Jobs Act (IIJA) funding can accelerate city climate action and equity priorities



Jake Bacon, Arizona Daily Sun

Decreased Dependence on Cars



The City and MetroPlan hosted a two-day Transforming Transportation Workshop:

- Over 30 transportation-related staff from the City, MetroPlan, Mountain Line, the County, ADOT, and NAU participated
- Reviewed national best practices in sustainable transportation – both big ideas and real-world examples
- Helped excite staff and support them in making the Big Shift in their work



- Electric mobility continues to grow nationally:
 - EV sales DOUBLED from 2020 to 2021
 - And still, in 2021, more e-bikes were sold than electric vehicles
- Exploring shared scooter partnerships
- Developing practical policies for the implementation of an electric fleet
- Collaborating with ADOT on its plan for EV charging infrastructure funded by the Infrastructure Investment and Jobs Act (IIJA)
- APS Take Charge AZ EV stations

Why Electric MOBILITY, not just EVs?

Electric vehicles do not assist us with:

- Reducing congestion
- Reducing roadway or parking infrastructure costs
- Improving mobility for non-drivers
- Improving public health beyond air quality
- Reducing sprawl or protecting habitat

Todd Litman, VTPI

Building Fuel Switching

Flagstaff warms up to climate-friendly heat pumps

Sean Geighly Apr 15, 2022 Updated Apr 15, 2022 1



Ramon Alatorre leans on a heat pump unit in the back garden of his Flagstaff home on Thursday. Jake Barron/Arizona Daily Sun

- The City hosted two workshops with the Electric League of Arizona:
 - Education for residents: 170 registrations! Recording available until 6/29/22
 - Technical training: 16 local contractors and building professionals
- Coming Soon: Expanded Energy Rebate Program



Join the Northern Arizona Solar Co-op!



Save money & stress by going solar in a group.

SOLARUNITEDNEIGHBORS.ORG/NAZ2022



SOLAR UNITED NEIGHBORS
501c3
nonprofit

Solar United Neighbors Round 2

- May 16 Launch
- May 24 Educational webinar #1
- June 6 RFP issued to installers
- June 20 Bids due from installers
- June 22 Educational Webinar #2
- June 28 Installer selected
- July 31 Co-op closes
- August 31 Deadline for all participants to receive a proposal
- September 30 Deadline for participants to sign a contract



Reduced Building Energy Use

- Coming Soon: Federally funded Deep Energy Retrofit Program funded to launch in fall 2022

ESCO Milestones	Estimated Date
Kickoff Meeting	Jan 2022
Planning and Logistics	Jan - Feb, 2022
Site Work	Mar - Apr 2022
Evaluation, Workshops (Scope, Finance, Legal)	Apr - May 2022
Finalize Investment Grade Audit and Energy Services Contract	Jul - Aug 2022
Council Discussion	Sep 2022
Execute Contract, Notice to Proceed	Oct 2022
Procurement, Design & Construction	Nov - Dec 2022

Sustainable Consumption & Waste Management



- **Community Gardens/ Composting**
 - Chicken Coop and Composter Rebate Program
 - Plot registration and workshop series
 - Residential Food Scraps Drop-Off
- **Waste Diversion Education**
 - Recycling QR code stickers
- **Material Recovery Facility Transition**
 - Solicitation closed, recommendation for a consultant in the coming months
- **Waste Diversion Events**
 - Fix-it Clinic (3/26/22)
 - Drop-off Day (4/30/22)

Carbon Dioxide Removal

- Innovate Waste and Carbon Neutrality Challenge with Moonshot at NACET
 - 6 exciting proposals received
 - \$31,000 in awards to Windswept Acres, Crosswalk Labs and Restoration Soils
- Carbon Dioxide Removal coalition
 - Narrowing project scope
 - Recruiting additional local governments
 - Exploring partnerships to expand the pool of eligible fiscal participants





CNP Annual Revisions

The CNP will be revised on an annual basis, to respond to the changing landscape and adjust projections

The 2022 revisions will include:

1. Updates to the wedge and emissions projections
 - Impacts of key partner organizations
2. Investment Needed
3. Incorporate CAAP resilience strategies:
 - Natural Resources
 - Water Resources
 - Public Health, Services, Facilities and Safety



Total Community Investment Analysis



Since initial conversations began on the Climate Emergency Declaration, staff has discussed the large investment that will be required

- We have built an investment analysis through careful evaluation by experts
- The numbers you'll see represent the projected costs and projected *fiscal* benefits
- The numbers do not include indirect benefits including public health, greenhouse gas emissions reductions, home safety, equity, resilience, and livability

Financial Analysis Methodology

To quantify, design, and create funding strategies around specific climate action programs and projects:

1. Design Sprints

- Building Energy Retrofits
- Carbon Dioxide Removal
- Building Electrification

2. Best Practices Scan

3. Quantification

4. Program Design and Funding Strategy





Investment Analysis - Quantification

1. Strategy
2. Metric Tons Carbon Dioxide Equivalent (MTCO_{2e})
3. Investment
4. Cost per MTCO_{2e}
5. Revenue
6. Net investment
7. Net investment per MTCO_{2e}



Total Community Investment Needed

An Evolving Framework For Action Iteration 1



Total Projected Cost	Emissions Reduction	Net Benefit
\$599,389,000	857,039 MTCO2e	\$22,338,000



Total Community Investment in Perspective

1. Ann Arbor, Michigan
2. Road infrastructure projects
3. Water treatment project



A2ZERO
EQUITABLE • SUSTAINABLE • TRANSFORMATIVE

Estimated Cost	Emissions Reduction
\$1,056,409,000	2,188,950 MTCO ₂ e

Metric Tons / CO2						
Strategy	Cost	Cost/MTCO2e	Revenue	Net	Net \$/MTCO2e	
Active Transportation Master Plan Implementation	\$200,000,000	\$5,161	\$-	\$200,000,000	\$5,161	
COF-Installed EV Chargers	\$176,810	\$97	\$-	\$(176,810)	\$(97)	
COF Electric Vehicle Fleet	\$2,630,000	\$2,520	\$2,923,245	\$293,245	\$281	
Clean Energy Purchase / Project	\$38,947,334	\$2,639	\$20,237,774	\$(18,709,560)	\$(1,268)	
City of Flagstaff ESCO	\$1,500,000	\$288	\$500,000	\$(1,000,000)	\$(192)	
Electrification Rebate and Bulk Buy	\$104,967,500	\$4,175	\$305,133,005	\$200,165,505	\$7,962	
LMI Deep Energy Retrofit Programs	\$157,304,350	\$9,461	\$170,641,237	\$13,336,887	\$1,105	
Residential Loan Financing	\$6,300,000	\$222	\$105,000,000	\$98,700,000	\$3,479	
Green New Construction	\$5,440,970	\$470	\$-	\$(5,440,970)	\$(470)	
Green Building Policies	\$-	\$-	\$-	\$-	\$-	
Improved recycling & Expanded Composting	\$19,704,535	\$35,939	\$17,291,122	\$(2,413,413)	\$(4,402)	
Landfill Gas Capture	\$11,663,000	\$113	\$-	\$(11,663,000)	\$(113)	
Commercial Energy Retrofits	\$708,074	\$48	\$-	\$(708,074)	\$(48)	
Carbon Dioxide Removal	\$47,161,900	\$100	\$-	\$(47,161,900)	\$(100)	
Programs Requiring Only Staff Time	\$2,884,261	\$24	\$-	\$(2,884,261)	\$(24)	



Pause for a Breath

The Carbon Neutrality Plan is about building a stronger more resilient Flagstaff. The plan costs out significant infrastructure projects:

- Active Transportation Master Plan - \$200,000,000
- Clean energy projects – \$38,947,334
- Landfill gas capture - \$11,663,000
- Recycling and composting - \$19,704,535
- City Fleet - \$2,630,000



Moving the Needle

- **Market change**
 - Electric mobility vehicles and electric bikes
 - Rapidly changing energy markets
 - Solar Co-op “bulk purchase”
- **Technology**
 - Carbon Dioxide Removal
 - Heat pumps and home electrification
 - City of Flagstaff Energy Conservation Contract
- **Behavior change**
 - Hybrid work policies, e.g. City of Flagstaff



Total Community Investment - Funding Potential

1. Federal funds and grants
2. Philanthropic grants
3. Utility incentives
4. State funds and grants
5. General obligation bonds
6. Environmental Management Fee
7. General funds
8. **Community partner investments**

Thank you

Nantonopoulos@flagstaffaz.gov

Jniemann@flagstaffaz.gov

Jenna.Ortega@flagstaffaz.gov

Ramon.Alatorre@flagstaffaz.gov

www.flagstaff.az/climate



One A Day in May

Litter Clean-up Challenge

May 1st - May 31st

Pick up one piece of litter each day during the month of May

