### **How NAU students and faculty can help implement the Flagstaff Climate Action and Adaptation Plan**

The Flagstaff Climate Action and Adaptation Plan (the Plan) was approved via resolution by City Council on November 20, 2018. The Plan has been over a year in the making and was developed through a collaborative process among City staff, community partners, and Flagstaff residents. Now the work *really* begins to make the Plan happen, which will require action and support from the entire Flagstaff community, including NAU. This document outlines the multiple ways NAU students and faculty can help implement the Plan. We encourage students and faculty to turn applicable implementation actions into class projects for the spring 2019 semester and beyond!

This document is organized by Plan section, starting with the Implementation Strategy then moving through each focus area (Natural Environment; Water Resources; Energy; Transportation and Land Use; Waste and Consumption; Public Health; and Economic Prosperity and Recreation). Strategies and actions within each section are listed along with a **bolded key word**, indicating the general topic and/or project that could be developed to address each action. Actions are referred to by focus area, strategy number, and individual action (i.e., IM-1-D refers to Implementation Strategy, Strategy 1, Action D). For reference, the [full Plan can be found here](https://www.flagstaff.az.gov/3697/Climate-Plan) (www.Flagstaff.AZ.gov/climateplan).

Explanation of **bolded key words**:

**Financing** – focuses on developing financial systems

**Policy** – focuses on developing government or business policy

**Proposal** – project includes a proposal for implementing a new program or system

**Outreach** – focuses on community outreach programs

**Curriculum** – focuses on educational curriculum development

**Research** – focuses on natural or social science research (includes a written report or proposal)

**Business** – focuses on developing and/or implementing new business systems

**Campaign** – focuses on educational campaign for residents and/or businesses

**Technology** – focuses on implementing new technology or energy modes

If you have any questions about this document or how you can work towards addressing the listed actions through your courses, please contact:

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Thank you for making the Plan a reality and building a more sustainable future for Flagstaff!

### **Implementation Strategy**

**Strategy 1: Reinforce organizational commitments to climate action.**

* **(Financing/Policy/Proposal)** IM-1-D: Establish financing systems that facilitate investments, emergency funds, and cash-flow availability to develop climate adaptation initiatives.

**Strategy 2: Reinforce organizational commitments to climate action.**

* **(Outreach)** IM-2-C: Host a community conversation on the Global Warming of 1.5° C special report by the Intergovernmental Panel on Climate Change, to identify if City goals should be refined.

**Strategy 3. Include climate action in City Council priorities.**

* **(Policy)** IM-3-C: Identify state and federal legislative priorities that support the goals of the Plan and enable implementation of Plan strategies and actions.

**Strategy 9: Support community leadership on climate change.**

* **(Outreach/Curriculum)** IM-9-A: Develop Climate Ambassadors and climate leadership training programs.
* **(Outreach/Proposal)** IM-9-C: Create community working groups as needed to tackle challenging implementation topics or undertake work where greater community collaboration is needed.

**Strategy 10: Create climate action funding proposals through the budget process.**

* **(Outreach/Proposal)** IM-10-B: Conduct a community-wide needs assessment to understand how needs are being met and how climate change affects neighborhoods differently.
* **(Outreach)** IM-10-E: Engage community members from all income levels, races and ethnicities, political persuasions, and neighborhoods in Plan outreach efforts.

**Strategy 12: Create climate action funding proposals through the budget process.**

* **(Financing/Proposal)** IM-12-A: Develop a funding proposal that supports the success of Plan implementation, which will be considered by the City Manager’s Office and the City Council as part of the annual budget process.

**Strategy 13: Communicate with the public and maintain momentum for implementation.**

* **(Outreach/Proposal)** IM-13-A: Create a comprehensive framework that identifies diverse outreach methods.
  + *Specifically, develop an online performance dashboard to track building and City-wide sustainability performance, thereby providing accountability and increasing awareness. The dashboard would display energy and water use intensity of public buildings, schools, or businesses willing to participate in the program. The dashboard could facilitate friendly competition to see which building can reduce its energy intensity the most.*

### **Natural Environment**

STRATEGY 2. Improve forest management through collaboration with regional partners.

* **(Research/Business/Proposal)** NE-2-C: Support forest product industry innovation and the construction of a biomass-based energy facility to use the abundant forest products resulting from the thinning and restoration of regional forests.

STRATEGY 3. Educate the public on forest health risk and fire prevention.

* **(Campaign)** NE-3-A: Expand public awareness campaigns on human-caused fires including linkages between public health, quality of life, and ecological resources, targeted at both Flagstaff residents and visitors.

STRATEGY 5: Proactively manage for expected ecosystem transitions, including the potential threats to ponderosa pine forests.

* **(Research)** NE-5-A: Collaborate with the research community on projects related to assisted migration and identification of plant varieties that are more tolerant of future climate conditions.
* **(Campaign)** NE-5-C: Implement an education campaign related to climate change and ecosystem/vegetation adjustments and resulting impacts in Flagstaff’s natural areas.

### **Water Resources**

STRATEGY 3. Continue to support water conservation efforts across the Flagstaff community.

* **(Campaign)** WR-3-A: Expand public education on water conservation and the “one water” concept, which says that all water is reusable.
* **(Business/Proposal)** WR-3-B: Work with high water users within the recreational, commercial, and manufacturing customer classes to maximize water use efficiency.
* **(Business/Proposal)** WR-3-D: Evaluate the viability of introducing various water conservation requirements for new construction, such as rainwater harvesting for irrigated spaces.

### **Energy**

STRATEGY 1. Improve energy efficiency in all sectors.

* **(Financing/Proposal)** E-1-B: Develop viable financing options for energy efficiency upgrades to commercial and residential buildings, such as a revolving loan program and new service and product models that enable homeowners to participate in energy efficiency improvements without upfront costs.
* **(Financing/Research/Proposal)** E-1-C: Fund and implement a contractor training and rebate program for solar thermal, on-demand water heaters, electric heat-pump space heaters, and conversions from gas to electric appliances, based on analysis demonstrating reductions in greenhouse gas emissions.
* **(Financing/Technology/Proposal)** E-1-G: Develop and adopt a SmartReg rental licensing policy program requiring minimum efficiency standards for all housing rentals.

STRATEGY 3. Manage energy demand and consumption in residential, commercial, and industrial sectors, to reduce greenhouse gas emissions.

* **(Financing/Technology/Proposal)** E-3-A: Collaborate with large energy users, such as Northern Arizona University, on reducing energy consumption and adopting new energy-saving technologies.
* **(Campaign/Outreach)** E-3-B: Provide tools and resources to help households manage their energy use.

### **Transportation and Land Use**

STRATEGY 1. Advance land use planning that minimizes the distance people have to travel by car and that increases community resiliency.

* **(Outreach)** TLU-1-G: The City will support a city-wide, ongoing discussion about density and its implications, with clear objects and deliverables that align specifically with the Climate Plan. Community workshops and discussion forums will cover trade-offs and opportunities, while continuous educational opportunities will review the cost of free parking and other land use issues.

STRATEGY 2. Prioritize, incentivize, and promote transportation by biking, walking, and transit.

* **(Outreach)** TLU-2-M: Have a community discussion regarding the challenges and opportunities of electric bikes, scooters, and other electric-powered mobility devices and develop regulations to guide electric bike use.

STRATEGY 3. Support the use of clean, energy-efficient vehicles.

* **(Technology/Proposal)** TLU-3-A: Develop public and private partnerships, and refine regulations to streamline permitting, for the installation of fast-charging electric vehicle chargers in publicly accessible parking areas along tourism corridors, at workplaces, and in multi-family housing developments.
* **(Campaign/Outreach)** TLU 3-E: Incorporate electric vehicle information and education into transportation, energy, and green business outreach programs.
* **(Campaign)** TLU-3-G: Educate the public on existing state and federal incentives for efficient and electric vehicles, including tax incentives and at-home electric vehicle charging outlet incentives.
* **(Technology/Outreach/Proposal)** TLU-3-I: Encourage car-free living by attracting additional electric vehicle car-sharing businesses to Flagstaff, providing incentives to ensure accessibility to residents in all neighborhoods.
* **(Technology/Outreach/Proposal)** TLU-3-J: Work with leading figures—such as elected officials, Northern Arizona University leaders, and business leaders—to commit to visibly switching to electric vehicles.

STRATEGY 5. Manage transportation demand and reduce the frequency with which people drive alone.

* **(Research)** TLU-5-D: Conduct a study that evaluates options for disincentivizing single-occupancy vehicle trips.

STRATEGY 6. Increase the supply of housing that is affordable to Flagstaff residents and located in areas that support biking, walking, and transit access to goods and services.

* **(Campaign/Proposal)** TLU-6-B: Encourage the construction of accessory dwelling units to increase rental opportunities in both established neighborhoods and new development.
* **(Outreach)** TLU-6-D: Create a working group to evaluate ways to encourage the construction of housing that can be adapted to meet the needs of various demographic groups over time, including students, seniors, and families.

### **Waste and Consumption**

STRATEGY 1. Increase waste diversion.

* **(Research)** WC-1-E: Conduct a study to evaluate the costs and benefits associated with mandating waste diversion.
* **(Outreach/Business/Proposal)** WC-1-J: Promote new markets for recycled or reused materials, such as through increased local business purchasing of recycled products and increased reuse of construction materials.

STRATEGY 2. Support sustainable and accessible production and consumption.

* **(Campaign)** WC-2-A: Expand consumer education on sustainable consumption and materials management, including prevention of wasted food in households and businesses and low-carbon food consumption.
* **(Business/Outreach/Campaign)** WC-2-B: Provide outreach and education to Flagstaff businesses in reducing greenhouse gas emissions in their supply chains.
* **(Outreach/Proposal)** WC-2-C: Support “collaborative consumption” community projects like tool libraries and repair cafes through mini-grant programs.
* **(Outreach/Business)** WC-2-H: Collaborate across the community to recognize and certify businesses that reduce their waste.

### **Public Health**

STRATEGY 1. Identify and target support for at-risk populations.

* **(Research)** PH-1-A: Characterize relative fire, flood, mosquito, and other risk exposures to climate change among community groups and neighborhoods.
* **(Campaign/Proposal)** PH-1-C: Address woodsmoke, such as through a regulation that requires use of only certified wood stoves, a public education campaign, and/or rebates for wood stove buybacks or replacements.

STRATEGY 3. Increase community awareness of climate change risks and impacts and improve community capacity to respond to new or expanding risks to public health.

* **(Curriculum)** PH-3-A: Train K-12 teachers on climate change science and curriculum.
* **(Curriculum)** PH-3-B: Provide in-school lessons on climate change science and climate action in K-12 classrooms in Flagstaff.
* **(Outreach)** PH-3-C: Improve community messaging on how to respond to simultaneous heat risks and poor air quality due to smoke.
* **(Outreach)** PH-3-D: Support the development of neighborhood resiliency groups.
* **(Outreach)** PH-3-E: Provide information on what residents can do to reduce their carbon footprint and how their households can be more resilient.

### **Economic Prosperity and Recreation**

STRATEGY 1. Accelerate the transformation to a low-carbon economy that minimizes emissions and can effectively adapt as the climate changes.

* **(Business/Outreach)** EPR-1-A: Promote Flagstaff as an environmentally friendly destination by highlighting the businesses that are taking steps to reduce resource consumption.
* **(Research/Business)** EPR-1-B: With community stakeholders and partners, conduct a study and host a community conversation to identify threats to current industries, opportunities for new businesses and industries, and areas that need support.
* **(Business/Proposal)** EPR-1-C: Work with businesses to assess their climate change vulnerability and plan for the future.
* **(Campaign)** EPR-1-G: Promote Flagstaff as a car-free destination through informational campaigns for visitors.
* **(Campaign/Business)** EPR-1-I: Promote circular economy principles through education campaigns and roundtables with business leaders focused on the opportunities that a circular economy provides.

STRATEGY 2. Protect natural areas and ecosystem services that are most vulnerable to the impacts of increased visitation and climate change.

* **(Campaign)** EPR-2-B: Enhance the Flagstaff Convention and Visitors Bureau public awareness campaign that emphasizes 'treading lightly' on the land to accommodate increased visitation and impact.