

ENVIRONMENTAL & NATURAL RESOURCES

Actively manage and protect all environmental and natural resources.



Environmental & Natural Resources

AGGRESSIVELY SUPPORT EFFORTS FOR FOREST HEALTH

Point of Contact: Mark Gaillard / Paul Summerfelt

POLICY IMPLICATION	<p>Regional Plan</p> <ul style="list-style-type: none">• <u>Environmental Planning & Conservation – Vision for the Future</u>: In 2030, the long-term health and viability of our natural resource environment is maintained through strategic planning for resource conservation and protection.• Policy E&C.3.3. Invest in forest health and watershed protection measures.• Policy E&C.4.1. Assess vulnerabilities and risks of Flagstaff’s natural resources.• Policy E&C.6.1. Encourage public awareness that the region’s ponderosa pine forest is a fire-dependent ecosystem and strive to restore more natural and sustainable forest composition, structure, and processes.• Policy E&C.6.3. Promote protection, conservation, and ecological restoration of the region’s diverse ecosystem type and associated animals.• Policy E&C.6.6. Support collaborative efforts for forest health initiatives or practices, such as the Four Forest Restoration Initiative (4FRI), to support healthy forests and protect our water system.• Policy E&C.7.2. Favor the use of available mechanisms at the City and County level for the preservation of environmentally sensitive lands, including but not limited to public acquisition, conservation easements, transfer of development rights or clustered development with open space designations.• Policy E&C.10.2. Protect, conserve, and when possible, enhance and restore wildlife habitat on public land.• Policy PF.1.2. Allocate available public resources necessary for the City and County to prepare and adapt for natural and human-caused hazards so that all government operations support community resiliency.• Policy PF.1.4. Build, sustain, and leverage partnerships with local and regional stakeholders for collective investment, efficient action, and shared responsibility in the building of
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	<p>local resiliency.</p> <ul style="list-style-type: none"> • <u>Open Space – Vision for the Future:</u> In 2030, the Flagstaff region maintains a healthy system of open lands supporting the natural environment and our quality of life through stewardship by regional stakeholders. • Policy OS.1.1. Establish a Conservation Land System supported by stakeholders (federal, state, city, county, non-profit, and interested citizens) to inventory, map, update, and manage the region’s green infrastructure including open space planning, acquisition, conservation, protection, and long-term management and maintenance <p>Community Wildfire Protection Plan</p> <ul style="list-style-type: none"> • Adopted by Council in 2005, and revised in 2012, the goal of the Plan is “To protect Flagstaff and surrounding communities, and associated values and infrastructure, from catastrophic wildfire” by means of <ul style="list-style-type: none"> ○ An educated public; ○ Implementation of forest treatment projects designed to reduce wildfire threat and improve long-term forest health, in a progressive and prioritized manner; and ○ Utilization of FireWise building techniques and principles. <p>National Cohesive Strategy (Wildfire) The three goals of the Strategy are:</p> <ul style="list-style-type: none"> • Restored and resilient forests; • Protected communities; and • Safe and effective suppression efforts.
<p>BUDGET IMPLICATION</p>	<p>FLAGSTAFF FIRE DEPARTMENT</p> <ul style="list-style-type: none"> • FFD’s Wildland Fire Management program (FTE and seasonal staff, operational expenses, administrative support), Flagstaff Watershed Protection Project (FWPP) bond, and an annual service contribution to Greater Flagstaff Forest Partnership (GFFP). • Development of a sustaining revenue source for the Wildland Fire Program, particularly post FWPP, is needed – presently estimated to be \$800,000 annually. <p>FLAGSTAFF POLICE DEPARTMENT</p> <ul style="list-style-type: none"> • There is not necessarily an additional budget cost or need for FPD to reach its measures. This can be done within current budget and existing personnel, so long as public safety staffing levels are supported as outlined in the Public safety Staffing

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	Levels section of the matrix. If overall police staffing reaches critically low levels (currently down 30%), the FPD overtime line item may need to be increased. Weather itself can also impact the need to staff these additional patrols.
S.M.A.R.T Y <input checked="" type="checkbox"/> N <input type="checkbox"/> if no, explain	
EXTERNAL PARTNERS	<ul style="list-style-type: none"> • GFFP • 4FRI Stakeholders • US Forest Service (USFS) • AZ Dept. of Forest and Fire Management (ADFFM) • Coconino County • The Nature Conservancy (TNC) • Northern Arizona University (School of Forestry – School of Forestry Ecological Restoration Institute – ERI) • Community residents (e.g., passage of Bond 405 – Flagstaff Watershed Protection Project) • Volunteers • Camp Navajo • US Naval Observatory
TIMELINE	<p>FLAGSTAFF FIRE DEPARTMENT Immediate, Long-term</p> <p>FLAGSTAFF POLICE DEPARTMENT Immediate, Short-term</p>
MEASUREMENT	<p>FIRE DEPARTMENT</p> <ul style="list-style-type: none"> • Complete 500+ acres of combined treatment • Develop a sustainable revenue source for the Wildland Fire Program, to be in place prior to the expiration of the FWPP Bond (2020) – currently estimated to be \$800,000 <p>FLAGSTAFF POLICE DEPARTMENT</p> <ul style="list-style-type: none"> • Protect the city from catastrophic wildfire by conducting Woods Watch fire prevention patrols and flyovers. Our target is to increase our woods watch patrols from 23 to 30 and our flyovers from five to ten by the end of FY 18.
UPDATE	<p>The Flagstaff Police Department conducted eight (8) fly over operations and 17 woods watch patrols from May through July 2017. (DM 08/25/2017)</p> <p>Staff has prepared a Staff Summary and Presentation for a future City</p>

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	<p>Council Work Session on developing a sustaining funding source for the Wildfire Management efforts and presented it to the Budget Team. We are awaiting scheduling of a work session with City Council in 2018. (MG, 18 September 2017)</p> <p>FY 18 500 acres of combined treatment has been completed with more acreage scheduled for completion this fiscal year. (MG, 28 November 2017)</p>
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<p align="center">PRESERVE NATURAL RESOURCES</p>	
<p align="center">Point of Contact: Andy Bertelsen / Nicole Antonopoulos Woodman</p>	
<p>POLICY IMPLICATION</p>	<p>Council Action</p> <ul style="list-style-type: none"> • Resolution 2012-12: a resolution of the City Council adopting a cultural resource policy for Picture Canyon. • Resolution 2015-34: A resolution of the City Council adopting the management plan for Picture Canyon Natural and Cultural Preserve. <p>Regional Plan</p> <ul style="list-style-type: none"> • Goal E&C.6. Protect, restore, and improve ecosystem health and maintain native plant and animal community diversity across all land ownerships in the Flagstaff region. • Goal E&C.8. Maintain areas of natural quiet and reduce noise pollution. • Goal E&C.9. Protect soils through conservation practices. • Goal E&C.10. Protect indigenous wildlife populations, localized and larger-scale wildlife habitats, ecosystem processes, and wildlife movement areas throughout the planning area. • Goal OS.1. The region has a system of open lands, such as undeveloped natural areas, wildlife corridors and habitat areas, trails, access to public lands, and greenways to support the natural environment that sustains our quality of life, cultural heritage, and ecosystem health.

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	<ul style="list-style-type: none"> • Goal LU.3. Continue to enhance the region's unique sense of place within the urban, suburban, and rural context (Policy LU.3.3). • Goal WR.6. Protect, preserve, and improve the quality of surface water, groundwater, and reclaimed water in the region. • Goal CC.2. Preserve, restore, and rehabilitate heritage resources to better appreciate our culture. • Goal ED.7. Continue to promote and enhance Flagstaff's unique sense of place as an economic driver. • Goal REC.1. Maintain and grow the region's healthy system of convenient and accessible parks, recreation facilities, and trails. <p>Plans</p> <ul style="list-style-type: none"> • Application of the Observatory Mesa and the Picture Canyon Forest Stewardship Plans, in conjunction with, and in support of, the <i>Greater Flagstaff Community Wildfire Protection Plan</i> (CWPP – approved by Council in 2005)
<p>BUDGET IMPLICATION</p>	<p>To continue the preservation of natural resources, additional funding will be needed for the maintenance and management of legally-designated open space properties. Currently, the Open Space Program operates on a base budget of \$32,500, which is heavily leveraged against grant funding. Presently, the City spends \$11.74 per acre for maintenance and management, while more robust open space programs invest \$100.00 per acre.</p> <p>If the City pursues additional acquisitions of natural areas and open spaces as a means of preserving natural and cultural resources in the Flagstaff area, the Open Space Program base budget will need to be adjusted to account for increased costs associated with managing and maintaining additional acreage.</p> <p>Annual support of the Fire Department's Wildland Fire Management program.</p>
<p>S.M.A.R.T Y <input checked="" type="checkbox"/> N <input type="checkbox"/> if no, explain</p>	
<p>EXTERNAL PARTNERS</p>	<p>Coconino National Forest, Flagstaff Area National Monuments, Arizona State Parks, Arizona Game and Fish Department, Coconino County Parks and Recreation Department, Museum of Northern Arizona, Northern Arizona University, tribal groups, adjacent</p>

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	<p>landowners</p> <p>US Forest Service, State Forestry & Fire Management, The Nature Conservancy, NAU's Ecological Restoration Institute and School of Forestry, AZ Dept. of Environmental Quality, various stakeholders – individual and groups</p>
TIMELINE	Short-term, Mid-term, Long-term
MEASUREMENT	<ul style="list-style-type: none"> • Develop an Open Space Management Plan <ul style="list-style-type: none"> ○ Acres of legally-designated open space preserved annually • Develop a list of potential parcels for acquisition and determine their estimated costs to acquire and maintain • Initiate conversations with landowners regarding purchasing parcels <ul style="list-style-type: none"> ○ Acres of open space property restored • Initiate conversations with landowners regarding purchasing parcels • Investigate potential for securing sustainable, long-term funding • Provide a system of interconnected open space and FUTS trails that connect to Forest Service trail networks and County Natural Areas for visitors and residents <ul style="list-style-type: none"> ○ Number of volunteer events hosted on open space properties ○ Number of guided tours provided to the community ○ Visitors to open space properties • Number of acres treated, dollar value protected, level of community support, partner engagement, resulting fire size (treated vs. untreated areas)
UPDATE	<ul style="list-style-type: none"> • The City incorporated an additional 300-acres of City-owned land on McMillan Mesa into the Open Space Program as a result of Proposition 413: Campaign for a Greater Buffalo Park, bringing the total area of legally-designated open space managed by the Open Space Program to 3,100 acres. • The Greater Flagstaff Forest Partnership completed the final phase of mechanized forest restoration projects on Observatory Mesa Natural Area, resulting in over 1,500 acres being treated and restored. • The Open Space Program finalized the Management Plan for Legally-Designated Open Space Properties, which City Council adopted in June 2017. • The Flagstaff Fire Department and Campbell Global, Inc.

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	<p>established a Forest Stewardship Plan for Picture Canyon Natural and Cultural Preserve, which will guide future forest restoration efforts.</p> <ul style="list-style-type: none">• The Open Space Program organized a series of summer volunteer events at Picture Canyon in partnership with local organizations, bringing 95 volunteers to donate 330 hours of their time to remove over 100 bags of invasive weeds and 2 miles of fencing from the Preserve. Youth volunteers also refurbished the wooden bridge within the Preserve.• The Open Space Program established an Indigenous Youth STEM Academy at Picture Canyon, hosting 3 day-long sessions focused on connecting native youth to culture and community through conservation.• Picture Canyon received an estimated 15,000 visitors since January 2017.• The Open Space Program partnered with Willow Bend Environmental Education Center to facilitate 23 guided tours of Picture Canyon with 705 FUSD students.
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FURTHER DEVELOP SUSTAINABILITY AND WASTE REMOVAL POLICIES AND PROGRAMS	
Point of Contact: Andy Bertelsen / Nicole Antonopoulos Woodman	
POLICY IMPLICATION	<p>The Regional Plan lacks policies and goals directly related to waste and recycling, but there are multiple indirectly related policies and goals that are impacted by Flagstaff’s waste system, including:</p> <ul style="list-style-type: none"> • EP&C.1.4. Maintain air quality through pursuit of non-polluting industry and commercial enterprises. • EP&C.2.1. Encourage the reduction of all energy consumption, especially fossil-fuel generated energy, in public, commercial, industrial, and residential sectors. • E.1.3. Empower all community members to make smarter energy choices through education and incentives. • CD.1. Improve the City and County financial systems to provide for needed infrastructure development and rehabilitation, including maintenance and enhancement of existing infrastructure. • PF.2. Provide sustainable and equitable public facilities, services, and infrastructure systems in an efficient and effective manner to serve all population areas and demographics. <p>The City lacks an institutionalized policy framework (or strategic plan) that would guide decision-making in developing the most sustainable waste system. Shifting from a solid waste management framework (end-of-life management) to sustainable materials management framework (full life-cycle consideration).</p>
BUDGET IMPLICATION	<p>In order to achieve this goal, increased funding for marketing and outreach, and additional staffing will be necessary.</p> <p>There are significant long-term budget implications if Flagstaff is to become a leader and a zero waste community.</p>
S.M.A.R.T Y <input checked="" type="checkbox"/> N <input type="checkbox"/> if no, explain	
EXTERNAL PARTNERS	<p>Arizona Department of Environmental Quality, Northern Arizona University, Norton Environmental, Coconino County, Willow Bend Environmental Education Center, Flagstaff Chamber of Commerce, Flagstaff Master Recycler Program, and regional solid waste programs.</p>

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TIMELINE	Short-term, Mid-term, Long-term
MEASUREMENT	<p>The first step to improving the sustainability of Flagstaff's waste system would be to adopt a strategic plan that establishes a framework for decision-making and policy in the future. Developing the plan and gathering public input could be accomplished by the start of FY18.</p> <p>Short-Term:</p> <ol style="list-style-type: none"> 1. Develop a long-range zero waste sustainability community plan to include, but not limited to the following: <ol style="list-style-type: none"> a. Large-scale composting program b. Construction and demolition material recycling c. Perform a consumption-based greenhouse gas inventory to complement existing inventories d. Update the Materials Recovery Facility to recover the largest possible portion of the City's waste stream e. Policy changes, such as: <ol style="list-style-type: none"> i. Updating municipal code ii. Mandating haulers provide recycling services iii. Adopting a residential pay-as-you-throw rate structure iv. Implement flow control that will have minimal budget implications, but are likely to result in significant improvements in recycling rates and waste prevention <p>Mid-term to Long-term goals might include specific items identified in the proposed plan mentioned above as well as those outlined below:</p> <ul style="list-style-type: none"> • Increase recycling rates among all sectors: single-family residential, commercial, and multifamily residential. <ul style="list-style-type: none"> ○ Measurement is the percentage of total waste generated that is delivered to the MRF, sorted, and sold as recyclable material. ○ Target is to achieve a 30% recycling rate among all sectors by 2020 based off of FY17. This would be a 10% increase for residential and 20% increase for commercial/multifamily (based on data from Municipal Solid Waste Program). • Begin measuring total waste generation and decrease over time

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	<ul style="list-style-type: none">○ Measurement is per capita waste generation○ Target is slow increases in total waste generation by 2020 based on FY17 data● Determine the greenhouse gas impact of Flagstaff's consumption and decrease over time<ul style="list-style-type: none">○ Measurement is greenhouse gas emissions associated with Flagstaff's consumption○ Target is to conduct a consumption-based greenhouse gas inventory in FY18● Maximize the participation in zero waste services and programs<ul style="list-style-type: none">○ Measurement is the number and diversity of participants utilizing waste programs○ Target is to increase participation in waste programs, events, and services by 50% by FY20 based on FY17 data● Measure greenhouse gas emissions from waste disposal and reduce over time<ul style="list-style-type: none">○ Measurement is greenhouse gas emissions from the transport, sorting, and disposal of Flagstaff's waste○ Target is to reduce emissions by 10% by FY18● Pass a strategic plan to guide waste operations and provide a materials management framework
UPDATE	<ul style="list-style-type: none">● Council adopted Resolution No. 2017-30 adopting the Rethink Waste Plan.● The Sustainability Section implemented the Flagstaff Master Recycler Program, which trained 29 volunteer Master Recyclers who conducted 378 hours and provided in-person outreach to 4,783 individuals.● Parks, Solid Waste and Sustainability installed recycling bins throughout downtown and in Thorpe, Wheeler, and Bushmaster Parks.

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ALIGN CITY POLICIES AND SLEDS COMMITTEE RECOMMENDATIONS

Point of Contact: Jeff Bauman

POLICY IMPLICATION

The SLEDS Project's primary objective is to find a solution to Flagstaff's current street lighting predicament of the end of Low Pressure Sodium (LPS) lighting availability and the limited availability of Light Emitting Diode (LED) replacement fixtures in colors and bandwidths that are comparable to our legacy LPS lighting system.

Regional Plan

The following goals and policies are relevant to the Dark Skies City Council Objective:

- Goal T.2. Improve transportation safety and efficiency for all modes.
- Policy T.2.1. Design infrastructure to provide safe and efficient movement of vehicles, bicycles, and pedestrians.
- Policy T.2.2. Consider new technologies in new and retrofitted transportation infrastructure.
- Policy T.2.3. Provide safety programs and infrastructure to protect the most vulnerable travelers, including the young, elderly, mobility impaired, pedestrians, and bicyclists.
- Goal T.3. Provide transportation infrastructure that is conducive to conservation, preservation, and development goals to avoid, minimize, or mitigate impacts on the natural and built environment.
- Policy T.3.6. Seek to minimize the noise, vibration, dust, and light impacts of transportation projects on nearby land uses.
- Goal T.4. Promote transportation infrastructure and services that enhance the quality of life of the communities within the region.
- Goal T.5. Increase the availability and use of pedestrian infrastructure, including FUTS, as a critical element of a safe and livable community.
- Policy T.5.2. Improve pedestrian visibility and safety and raise awareness of the benefits of walking
- Goal T.6. Provide for bicycling as a safe and efficient means of transportation and recreation.

- Goal E&C.5. Preserve dark skies as an unspoiled natural resource, basis for an important economic sector, and core element of community character.
- Policy E&C.5.1. Evaluate the impacts of the retention of dark

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	<p>skies regarding lighting infrastructure and regulatory changes, land use decisions or changes, and proposed transportation developments within the region.</p> <ul style="list-style-type: none"> • Policy E&C.5.2. Encourage and incentivize voluntary reduction of “exempt” lighting that degrades night sky visibility, and work to prevent light trespass whenever possible in both public and private areas. • Goal LU.19. Develop a manageable evolution of the main corridors into contextual place makers. • Policy LU.19.4. Balance automobile use, parking, bicycle access, while prioritizing pedestrian safety along all corridors.
<p style="text-align: center;">BUDGET IMPLICATION</p>	<p>The SLEDS study and test installations are funded through FMPO Surface Transportation Program (STP) funds in FY 16 (\$300k). The first phase of roadway lighting replacements is funded through FMPO STP funds in FY 18 (\$370k).</p> <p>The City maintains over 3,500 street lights. Several additional replacement phases are anticipated with additional funding of approximately \$4,000k to \$6,000k in capital expenses. Significant additional ongoing funding will also likely be needed due to the reduced efficiency of the currently proposed SLEDS replacement lighting fixtures.</p>
<p>S.M.A.R.T Y <input checked="" type="checkbox"/> N <input type="checkbox"/> if no, explain</p>	
<p style="text-align: center;">EXTERNAL PARTNERS</p>	<p>Flagstaff Metropolitan Planning Organization, US Naval Observatory, Lowell Observatory, Dark Skies Coalition, Dark Skies Citizen Working Group and ADOT</p>
<p style="text-align: center;">TIMELINE</p>	<p>Immediate, Short-term, Mid-term</p>
<p style="text-align: center;">MEASUREMENT</p>	<p>Immediate:</p> <ul style="list-style-type: none"> • Field Testing and continued work with the SLEDS Committee <p>Short-term to Mid-term:</p> <ul style="list-style-type: none"> • Complete the work of the SLEDS • Amend City Engineering Standards to align with SLEDS Committee Recommendations and Council’s goals
<p style="text-align: center;">UPDATE</p>	<p>Test fixture procurement and installation in Summer 2017 and probable Council Work Session on proposed City Engineering Standards updates in late Fall 2017</p>

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CONTINUE TO SUPPORT THE FOUR FOREST RESTORATION INITIATIVE (4FRI)

Point of Contact: Mark Gaillard / Paul Summerfelt

POLICY IMPLICATION

Regional Plan

Environmental Planning & Conservation – Vision for the Future: In 2030, the long-term health and viability of our natural resource environment is maintained through strategic planning for resource conservation and protection.

- Policy E&C.3.3. Invest in forest health and watershed protection measures.
- Policy E&C.4.1. Assess vulnerabilities and risks of Flagstaff’s natural resources.
- Policy E&C.6.1. Encourage public awareness that the region’s ponderosa pine forest is a fire-dependent ecosystem and strive to restore more natural and sustainable forest composition, structure, and processes.
- Policy E&C.6.3. Promote protection, conservation, and ecological restoration of the region’s diverse ecosystem type and associated animals.
- Policy E&C.6.6. Support collaborative efforts for forest health initiatives or practices, such as the Four Forest Restoration Initiative (4FRI), to support healthy forests and protect our water system.
- Policy E&C.7.2. Favor the use of available mechanisms at the City and County level for the preservation of environmentally sensitive lands, including but not limited to public acquisition, conservation easements, transfer of development rights or clustered development with open space designations.
- Policy E&C.10.2. Protect, conserve, and when possible, enhance and restore wildlife habitat on public land.

OPEN SPACE – Vision for the Future: In 2030, the Flagstaff region maintains a healthy system of open lands supporting the natural environment and our quality of life through stewardship by regional stakeholders.

- Policy OS.1.1. Establish a Conservation Land System supported by stakeholders (federal, state, city, county, non-profit, and interested citizens) to inventory, map, update, and manage the region’s green infrastructure including open space planning, acquisition, conservation, protection, and long-term management and maintenance

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	<p>Community Wildfire Protection Plan Adopted by Council in 2005, and revised in 2002, the goal of the Plan is “to protect Flagstaff and surrounding communities, and associated values and infrastructure, from catastrophic wildfire” by means of</p> <ul style="list-style-type: none"> • An educated public; • Implementation of forest treatment projects designed to reduce wildfire threat and improve long-term forest health, in a progressive and prioritized manner; and • Utilization of FireWise building techniques and principles. <p>National Cohesive Strategy (Wildfire) The three goals of the Strategy are:</p> <ul style="list-style-type: none"> • Restored and resilient forests; • Protected communities; and • Safe and effective suppression efforts
BUDGET IMPLICATION	Staff Time
S.M.A.R.T Y <input checked="" type="checkbox"/> N <input type="checkbox"/> if no, explain	
EXTERNAL PARTNERS	4FRI Stakeholders (60 Members of the collaborative)
TIMELINE	Short-term, Long-term
MEASUREMENT	Short-term to Long-term: Ongoing <ul style="list-style-type: none"> • The City’s primary role in 4FRI is to be at the table, to continue participation, and to advocate in support of 4FRI
UPDATE	Staff continues to be engaged as an active member of 4FRI representing the City. (mg, 18 September 2017)

