WORK SESSION AGENDA

CITY COUNCIL WORK SESSION
TUESDAY
SEPTEMBER 10, 2024

COUNCIL CHAMBERS
211 WEST ASPEN AVENUE
3:00 P.M.

All City Council Meetings are live streamed on the city's YouTube page (https://www.youtube.com/@FlagstaffCityGovernment)

PUBLIC COMMENT

Verbal public comments not related to items appearing on the posted agenda may be provided during the "Open Call to the Public" at the beginning and end of the meeting and may only be provided in person.

Verbal public comments related to items appearing on the posted agenda may be given in person or online and will be taken at the time the item is discussed.

To provide online verbal comment on an item that appears on the posted agenda, use the link below.

ONLINE VERBAL PUBLIC COMMENT

Written comments may be submitted to publiccomment@flagstaffaz.gov. All comments submitted via email will be considered written comments and will be documented in the record as such.

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1. **Call to Order**

NOTICE OF OPTION TO RECESS INTO EXECUTIVE SESSION

Pursuant to A.R.S. §38-431.02, notice is hereby given to the members of the City Council and to the general public that, at this work session, the City Council may vote to go into executive session, which will not be open to the public, for discussion and consultation with the City's attorneys for legal advice on any item listed on the following agenda, pursuant to A.R.S. §38-431.03(A)(3).

2. **Roll Call**

NOTE: One or more Councilmembers may be in attendance through other technological means.

MAYOR DAGGETT
VICE MAYOR ASLAN
COUNCILMEMBER HARRIS
COUNCILMEMBER HOUSE
COUNCILMEMBER MATTHEWS
COUNCILMEMBER MCCARTHY
COUNCILMEMBER SWEET

3. **Pledge of Allegiance, Mission Statement, and Land Acknowledgement**

MISSION STATEMENT

The mission of the City of Flagstaff is to protect and enhance the quality of life for all.

LAND ACKNOWLEDGEMENT

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. **Open Call to the Public**

Open Call to the Public enables the public to address the Council about an item that is not on the prepared agenda. Comments relating to items that are on the agenda will be taken at the time that the item is discussed. Open Call to the Public appears on the agenda twice, at the beginning and at the end. The total time allotted for the first Open Call to the Public is 30 minutes; any additional comments will be held until the second Open Call to the Public.

If you wish to address the Council in person at today's meeting, please complete a comment card and submit it to the recording clerk as soon as possible. Your name will be called when it is your turn to speak. You may address the Council up to three times throughout the meeting, including comments made during Open Call to the Public and Public Comment. Please limit your remarks to three minutes per item to allow everyone an opportunity to speak. At the discretion of the Chair, ten or more persons present at the meeting and wishing to speak may appoint a representative who may have no more than fifteen minutes to speak.

5. **Proclamation:** Ovarian Cancer Awareness Month

6. **Proclamation:** Hispanic Heritage Month

7. **September Work Anniversaries**
   Recognition of employees celebrating work anniversaries in September

8. **Review of Draft Agenda for the September 17, 2024 City Council Meeting**

Citizens wishing to speak on agenda items not specifically called out by the City Council may submit a speaker card for their items of interest to the recording clerk.

9. **City Manager Report**
   Information Only

10. **Moving the Needle on the Active Transportation Master Plan, the Carbon Neutrality Plan, and the 10 Year Housing Plan**
    This is an informational update for the City Council and Flagstaff community.

11. **Open Call to the Public**

12. **Informational Items To/From Mayor, Council, and City Manager; future agenda item requests**

13. **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. in accordance with the statement filed by the City Council with the City Clerk.

Dated this _____ day of _____, 2024.

_____
Stacy Saltzburg, MMC, City Clerk

THE CITY OF FLAGSTAFF ENDEAVORS TO MAKE ALL PUBLIC MEETINGS ACCESSIBLE TO PERSONS WITH DISABILITIES. With 48-hour advance notice, reasonable accommodations will be made upon request for persons with disabilities or non-English speaking residents. Please call the City Clerk (928) 213-2076 or email at stacy.saltzburg@flagstaffaz.gov to request an accommodation to participate in this public meeting.

NOTICE TO PARENTS AND LEGAL GUARDIANS: Parents and legal guardians have the right to consent before the City of Flagstaff makes a video or voice recording of a minor child, pursuant to A.R.S. § 1-602(A)(9). The Flagstaff City Council meetings are live-streamed and recorded and may be viewed on the City of Flagstaff's website. If you permit your child to attend/participate in a televised Council meeting, a recording will be made. You may exercise your right not to consent by not allowing your child to attend/participate in the meeting.

CITY OF FLAGSTAFF

STAFF SUMMARY REPORT

To: The Honorable Mayor and Council

From: Stacy Saltzburg, City Clerk

Date: 09/05/2024

Meeting Date: 09/10/2024

TITLE:
September Work Anniversaries

DESIRED OUTCOME:
Recognition of employees celebrating work anniversaries in September

Executive Summary:

Information:

Attachments: Presentation


HAPPY
WORK
ANNIVERSARY

- Cody Stowe, Police Officer
- Nathan Sahmie, Parks Maintenance Worker
- Paul Rosevear, GIS Analyst II
- John Carter, Police Officer
- Emily Fendya, Library Specialist
- Erika Klotz, Visitor Services Assistant

- Lucille Cannon, Library Specialist
- Hannah Duval, Firefighter
- Rhys Campbell, Assistant City Attorney II
- Linda Mooney, Police Emergency Communications Specialist
- Andrew Berg, Firefighter





Carmen Johnson Pryer
Real Estate Specialist
5th Anniversary



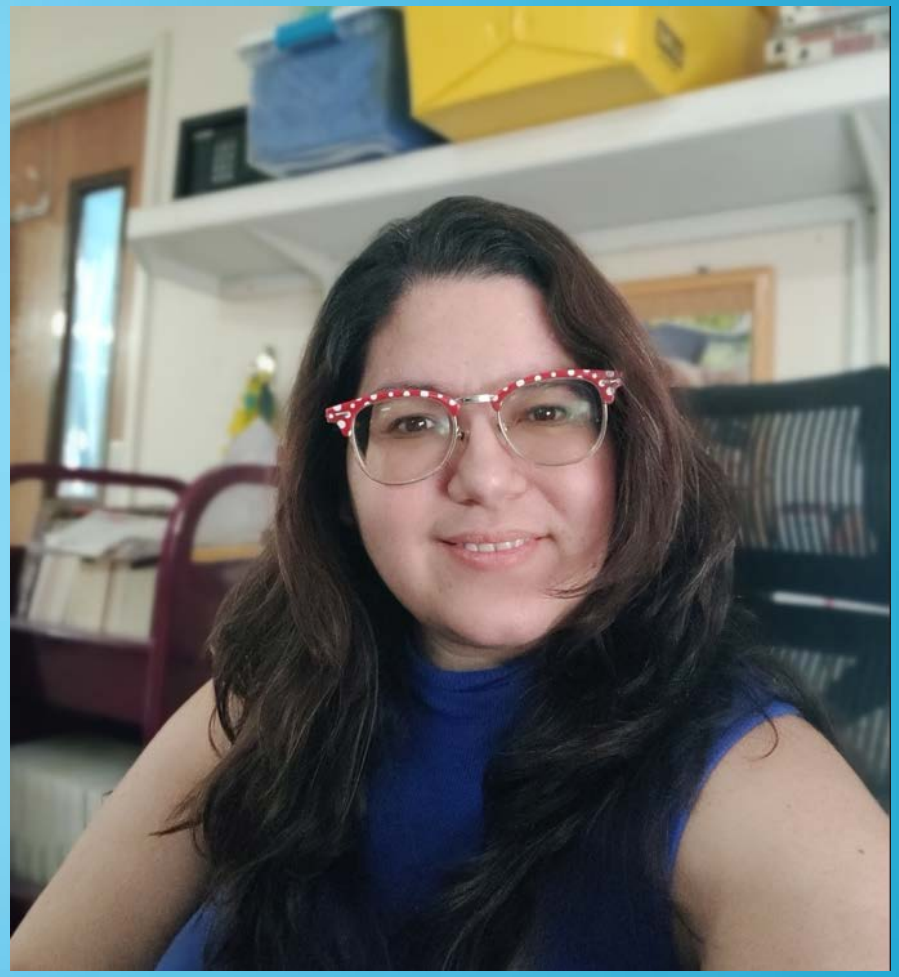


Taylor Prichard
Water Services Operator IV
5th Anniversary





Patrick Jenkins
Construction Inspector
5th Anniversary



Andrea Barrantes
Library Specialist
5th Anniversary



Judith Costello
Court Interpreter
10th Anniversary



Lori Spencer
Police Crime Analyst
10th Anniversary

Nathan Naliborski
Public Works Manager
15th Anniversary





Francita Begay
Administrative Specialist
20th Anniversary





Juston Watson
Welder Technician
20th Anniversary

Paul is from Michigan and majored in Biology and Art at Hope College. He published a few medical illustrations in medical journals before he joined the Navy as a Hospital Corpsman. Following the Navy Paul went back to school and earned his Masters of Forensic Science and joined the Naval Criminal investigative Regional Forensic Laboratory. He worked as a Sr Forensic Scientist in New Mexico before joining the Flagstaff Police Department in 1999. Paul served as a Patrol Officer, Field Training Officer, Corporal, Detective, Sergeant and Lieutenant prior to becoming a Deputy Police Chief. During his time with the Police Department, he received his Doctorate from University of Phoenix and has been teaching criminal justice courses. Paul has been recognized for his many accomplishments by a Lifesaving Award, Meritorious Service Award, City Manager's Freemont Award, WOW Award and Heart of Hope Humanitarian Award.



Paul Lasiewicki
Deputy Police Chief
25th Anniversary

Chris was hired 25 years ago by the City of Flagstaff, after serving what was then Doney Park Fire for a couple years. Prior to that, he worked as a teacher in the valley. He's a long time Engineer, Paramedic, Technical Rescue Technician and Hazardous Materials Technician. He also teaches various EMS courses at Coconino Community College, was an Acting Captain for many years, and has been involved in various ways to help move the organization forward. In his off time, he enjoys mountain biking, hiking, the outdoors, and spending time with his Wife and two daughters.



Chris Thomas
Fire Engineer Paramedic
25th Anniversary


CONGRATULATIONS



CITY OF FLAGSTAFF

STAFF SUMMARY REPORT

To: The Honorable Mayor and Council

From: Stacy Saltzburg, City Clerk

Date: 09/05/2024

Meeting Date: 09/10/2024

TITLE:
City Manager Report

DESIRED OUTCOME:
Information Only

Executive Summary:
These reports will be included in the City Council packet for regularly scheduled Work Session meetings. The reports are intended to be informational, covering miscellaneous events and topics involving the City organization.

Information:

Attachments:
City Manager Report
PROSE Monthly Report
Economic Vitality Monthly Report
Water Services Quarterly Report
Meade Lane Drainage Presentation

City Manager's Report

Sept 5, 2024

Council and Colleagues, greetings. We hope that your summer recess was fantastic. These reports will be included in the City Council packet for Council Work Sessions. The reports are intended to be informational, covering miscellaneous events and topics involving the city organization. This report inclusive of the most recent updates from PROSE, Water Services and Economic Vitality.

Miscellaneous Updates

Arizona League of Cities and Towns

The annual conference was held August 27-30th in Phoenix at the Arizona Biltmore. It was very well attended, and the curriculum was great. The City was well represented with our Mayor participating in the Center for Arizona Session entitled *Advancing the Arizona we Want – Centering Arizonans' Voices in the Election Season.* It was informative and quite timely.

Scott Overton, and Kevin Fincel were participants in the earlier sessions on Thursday morning (coinciding). Kevin presented at the *Employment for Elected Officials* session along with Justin Pierce, the guitar-strumming lawyer, while Scott presented at the *Emergency Preparedness Planning* session (with no musical instruments whatsoever). Sarah Darr then presented at a panel later in morning, entitled *Advancing Arizona: Workforce and Affordable Housing Solution*.









Many of us partook in the annual Parade of Flags event and we were accompanied by Louie the Lumberjack mascot from NAU, and Coco the Comet mascot from CCC. And on Thursday evening the city hosted a booth at the Showcase of Cities and Towns.

We were fortunate to hear Governor Hobbs speak at the Thursday Luncheon.





<u>Volunteer Event</u>

Back in July, a number of volunteers assembled in Coconino Estates to help remove some sandbags from residents who requested assistance. It was well-attended, and we accomplished a lot. Props to all those who helped, and to the Sustainability Team for orchestrating.

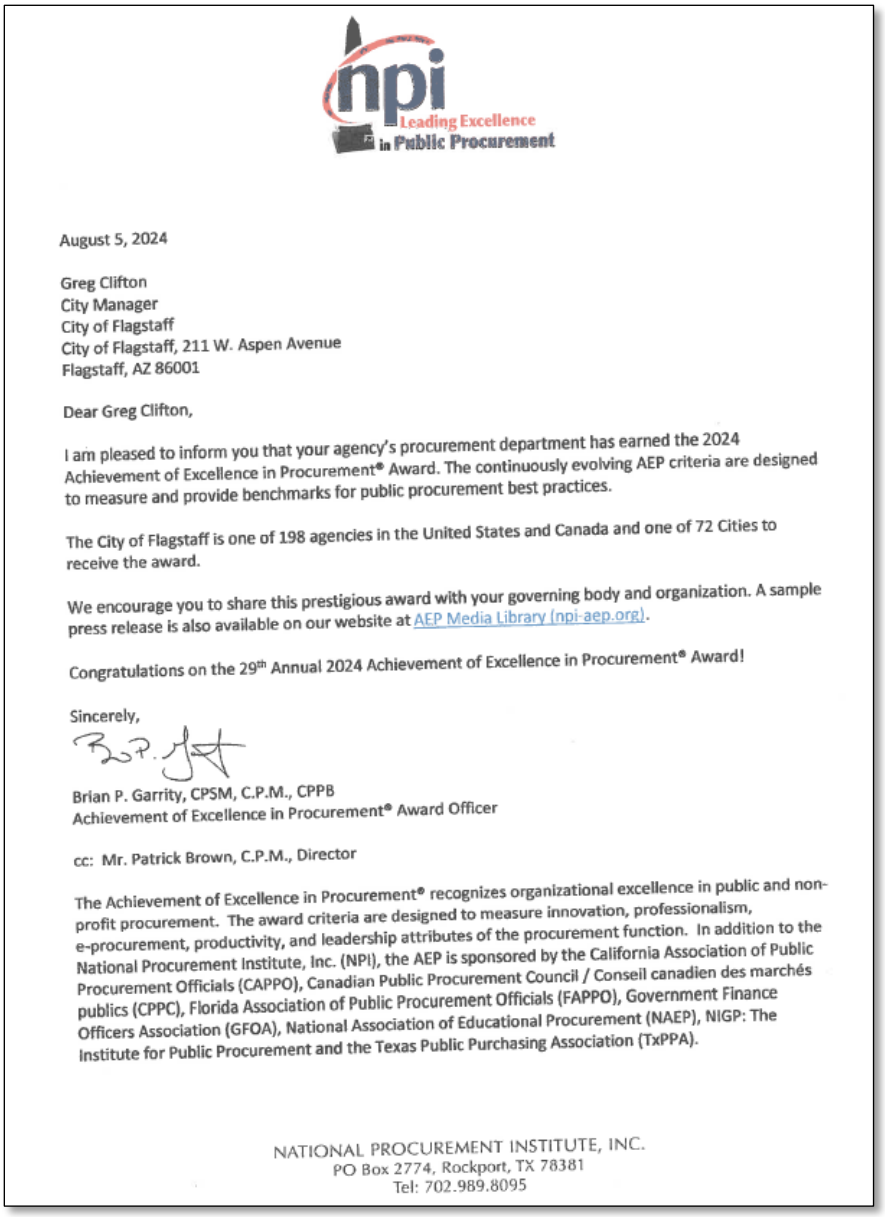






National Procurement Institute

The National Procurement Institute (yes, there is such a thing) provided the following letter to note a prestigious award earned by our City Procurement Section. Fantastic news and well deserved! See below:



August 5, 2024

Greg Clifton
City Manager
City of Flagstaff
City of Flagstaff, 211 W. Aspen Avenue
Flagstaff, AZ 86001

Dear Greg Clifton,

I am pleased to inform you that your agency's procurement department has earned the 2024 Achievement of Excellence in Procurement® Award. The continuously evolving AEP criteria are designed to measure and provide benchmarks for public procurement best practices.

The City of Flagstaff is one of 198 agencies in the United States and Canada and one of 72 Cities to receive the award.

We encourage you to share this prestigious award with your governing body and organization. A sample press release is also available on our website at AEP Media Library (npi-aep.org).

Congratulations on the 29th Annual 2024 Achievement of Excellence in Procurement® Award!

Sincerely,

Brian P. Garrity, CPSM, C.P.M., CPPB
Achievement of Excellence in Procurement® Award Officer

cc: Mr. Patrick Brown, C.P.M., Director

The Achievement of Excellence in Procurement® recognizes organizational excellence in public and non-profit procurement. The award criteria are designed to measure innovation, professionalism, e-procurement, productivity, and leadership attributes of the procurement function. In addition to the National Procurement Institute, Inc. (NPI), the AEP is sponsored by the California Association of Public Procurement Officials (CAPPO), Canadian Public Procurement Council / Conseil canadien des marchés publics (CPPC), Florida Association of Public Procurement Officials (FAPPO), Government Finance Officers Association (GFOA), National Association of Educational Procurement (NAEP), NIGP: The Institute for Public Procurement and the Texas Public Purchasing Association (TxPPA).

NATIONAL PROCUREMENT INSTITUTE, INC.
PO Box 2774, Rockport, TX 78381
Tel: 702.989.8095

SMART Funding

On August 16, the Arizona State Transportation Board approved the City of Flagstaff's request for $2.4 million in SMART Funding to cover the City's portion of the matching funds for the $9.6 million Safe Streets for All grant associated with the Butler Ave Complete Streets Conversion project. A special thank you to Councilmember McCarthy who provided testimony to the Board and MetroPlan for their advocacy efforts. We are excited to keep this project moving forward!

Employee Picnic

The City of Flagstaff's annual picnic returned this year. Departments participated in a wiffle ball tournament, a dunk tank and joined with coworkers to celebrate Team Flagstaff.

Below is a photo of the first game with Engineering playing Water Services. Michelle McNulty is moonlighting for the Engineering team in the catcher role with Brian Huntzinger at bat. Fortunately, there were no injuries.



The highlight of the day was the Dunk a Director. Thanks to all of the brave directors. We raised $240 for United Way! CJ Perry raised the most and is rumored to have been dunked over 25 times. Apparently, people truly enjoy dunking CJ. Apparently, Joanne has been practicing for the occasion.



I want to give a special thank you to Champions of Team Flagstaff and, specifically Erin Young, for their hard work on this event. I know many people were involved in planning, grilling, organizing and clean-up. Team Flagstaff is truly special!

High Country Academy Graduation

Congratulations to Class #4! The class of 14 graduates were sworn in during the graduation and celebration event on August 22nd. I understand that Council was not aware of this in advance, as it occurred at the tail end of the Council recess, and we apologize for that. In the future, we will make sure that all are aware.

The ceremony involved a keynote speech by our Police Chief Sean Connolly. It was wonderful. Class Four will see four officers coming on board with Flagstaff PD, and we welcome them with excitement!





Joy Cone

Water Services and our Office met with the team at Joy Cone to discuss the progress of the new pre-treatment infrastructure and overall plant enhancements. The reuse part of the infrastructure will see clarified discharge from the plant applied to landscaping through a drip system. It's all very exciting, and we look forward to what lies ahead. It was a great meeting, and props to the leadership at Joy Cone and our Water Services team (Regulatory Compliance) for their assistance in this matter, which has been on the table for years.

John Wesley Powell

The meetings continue to be frequent and meaningful, as we are now discussing funding participation and next steps. We are looking to have a Council update in the weeks ahead. Stay tuned.

Linda Vista

Look for an update newsletter that the Spruce Wash Team is preparing (many thanks). I will share with you that things are progressing, and the below photo was taken while riding through the area on Sept 4th. The teams are working hard.



Meade Lane Flooding

We will be having a staff update, and discussion, on this during the Council meeting.

That is a wrap, Council. Short and sweet. Again, welcome back from the recess and we look forward to accomplishing a lot of business here in the weeks to follow. Below is an image captured from the South Rim, displaying the splendor of a mid-summer sunset. Enjoy.



CITY OF FLAGSTAFF
PROSE

PARKS, RECREATION, OPEN SPACE, AND EVENTS

AUGUST 2024 NEWSLETTER

Connecting our community through people, parks, natural areas, and programs.



The new playground at Ponderosa Trails Park



New Playground at Ponderosa Trails Park!

There is a new playground in town! The Parks section completed the installation of a new playground at Ponderosa Trails Park. The previous structure was twenty-five years old and due for replacement. The new playground offers opportunities for climbing, sliding, dangling and more in a relatively small space.



Aerial view of the new playground



Kids enjoying the new playground at Ponderosa Trails Park

PARKS



Laying the squares of sod

Thorpe Multi-Purpose Sod Project

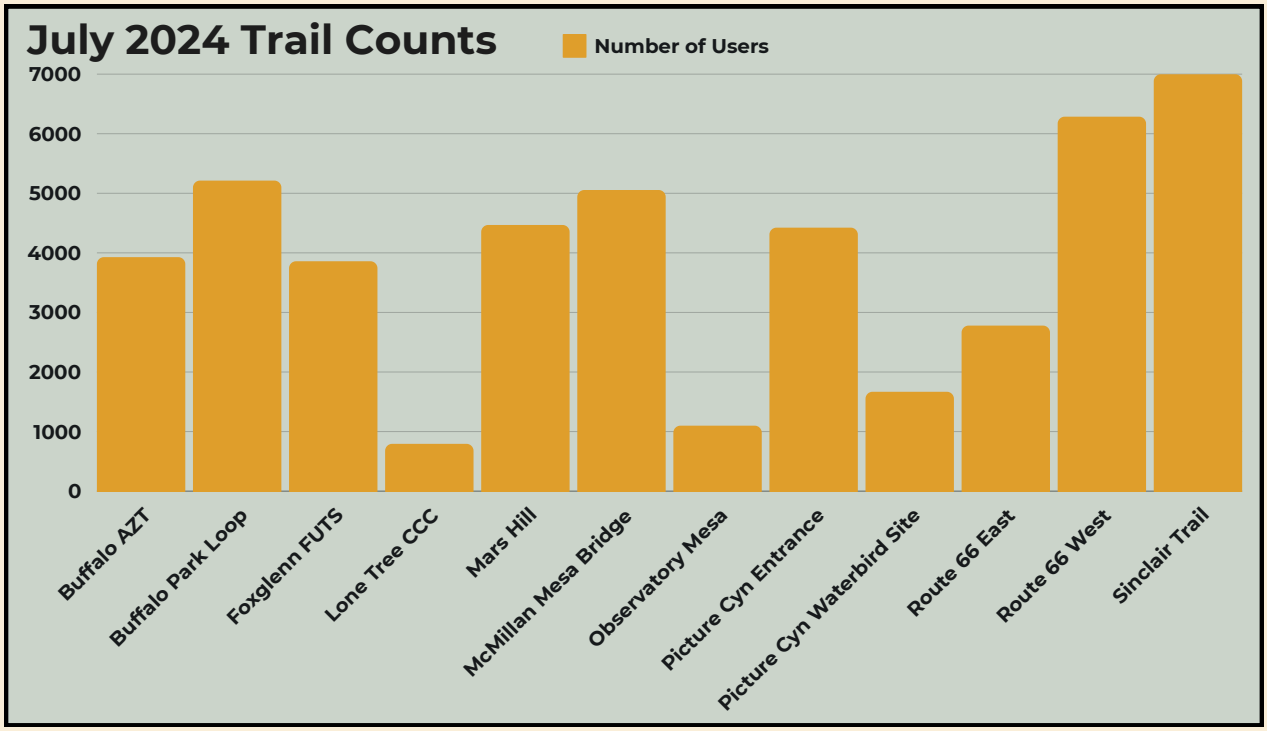
In cooperation with the Flagstaff Soccer Club, Parks was able to implement a full closure of the Thorpe Multi-Purpose Field in order to establish a healthy new layer of sod. This project successfully replaced over 6,000 square feet and is open again for use.



Prepping the soil



Finishing touches





Open swim at the Aquaplex

RECREATION

Aquaplex

Joe C Montoya Community & Senior Center



Kids crafting

Summer Day Camps

The Aquaplex Summer Day Camps are all wrapped up for the summer. What started with only six participants, ended with the maximum capacity of twenty. This was the first year Summer Day Camps returned to the Aquaplex since 2019. Staff learned a lot from this year's camps and are fully prepared to hit the ground running next summer.



The new piano

Joe C Montoya Community & Senior Center Donated Piano

Joe C. Montoya Center received a donated piano valued at $2,000. This piano will replace the previous piano which was of lesser quality and sound. The center is excited about music performances to come!

New Class with Mountain Health Arts: Education of Making Music for Memory Loss

In partnership with Mountain Health Arts, Joe C. Montoya is offering a new class titled, Education of Making Music for Memory Loss. This class is geared towards people with Dementia and Alzheimer's.



The music class in action



Back to School BBQ at Hal Jensen

RECREATION

Hal Jensen Recreation Center

Jay Lively Activity Center



Teens at the BBQ getting some food

Hal Jensen Back to School BBQ

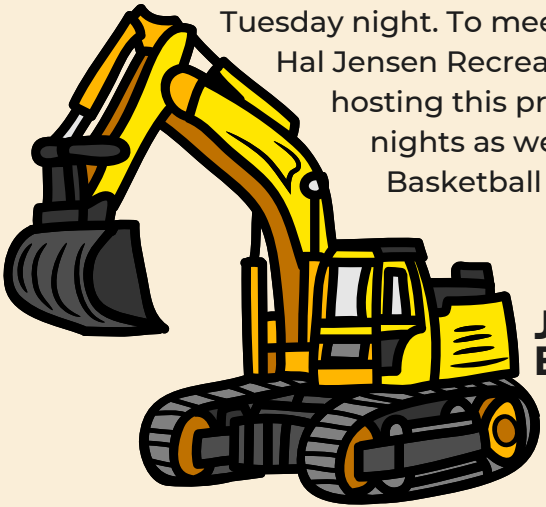
Hal Jensen Recreation Center hosted a Back to School BBQ to welcome both new and familiar teens to the center. Staff served food and shared some behavior expectations for the facility. This gathering saw approximately 160 youth.

Tuesday Night Adult Pick-Up Basketball

Adult Pick-Up Basketball has been steadily increasing in popularity seeing approximately thirty players every Tuesday night. To meet this demand, Hal Jensen Recreation Center will be hosting this program on Thursday nights as well until Youth Basketball begins in November.



Pick-Up Basketball in action



Jay Lively Activity Center Excavation Work

Jay Lively Activity Center completed work on the drainage project with the help of 108 Excavating.


Arbor Day Tree Walk event

OPEN SPACE


Event participants gaze at a Giant Sequoia

Arbor Day Tree Walk Event

In honor of Arbor Day, Open Space hosted a free event for the public to learn about both native and invasive species of trees. Approximately twelve people attended this walk around the neighborhood where our Open Space Coordinator identified different species and included some fun facts and tips about growing and maintenance.

Welcome Ashlee - New Open Space Educator!

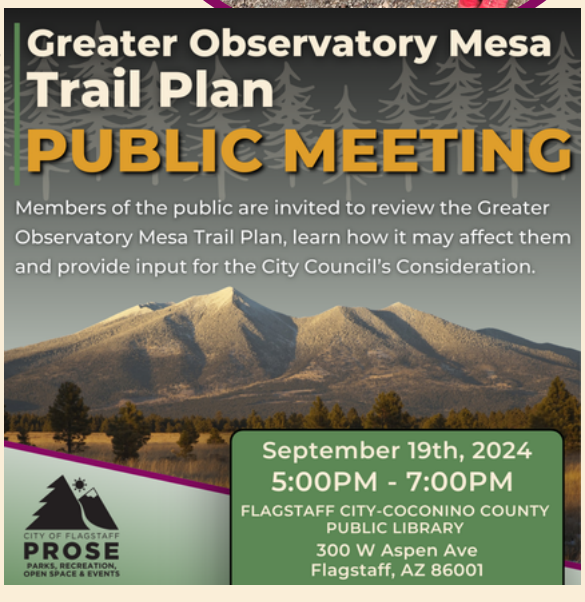

Ashlee in good spirits after pulling invasive weeds

Open Space is excited to welcome Ashlee Fliney to the team as the Open Space Educator. Ashlee has ample experience in outdoor education and has jumped right into her new role with enthusiasm.


Sylvia gifting Desert a bunch of Star Thistle

Thank you Desert - AmeriCorps ELC Member

Open Space's AmeriCorps Environmental Literacy Corps intern, Desert Mulford, has completed his term. His hard work has helped advance the Open Space education program to include elements of art and climate change awareness. We are thankful for all that Desert has done with PROSE and wish him well on his next work adventure.



Greater Observatory Mesa Trail Plan

With help from Southwest Decision Resources, a third and final draft of the Observatory Mesa Trail Plan has been released to the public for input. The public is encouraged to review the plan online as well as at the public meeting on September 19th, from 5:00pm to 7:00pm at the downtown Flagstaff City-Coconino County Public Library.

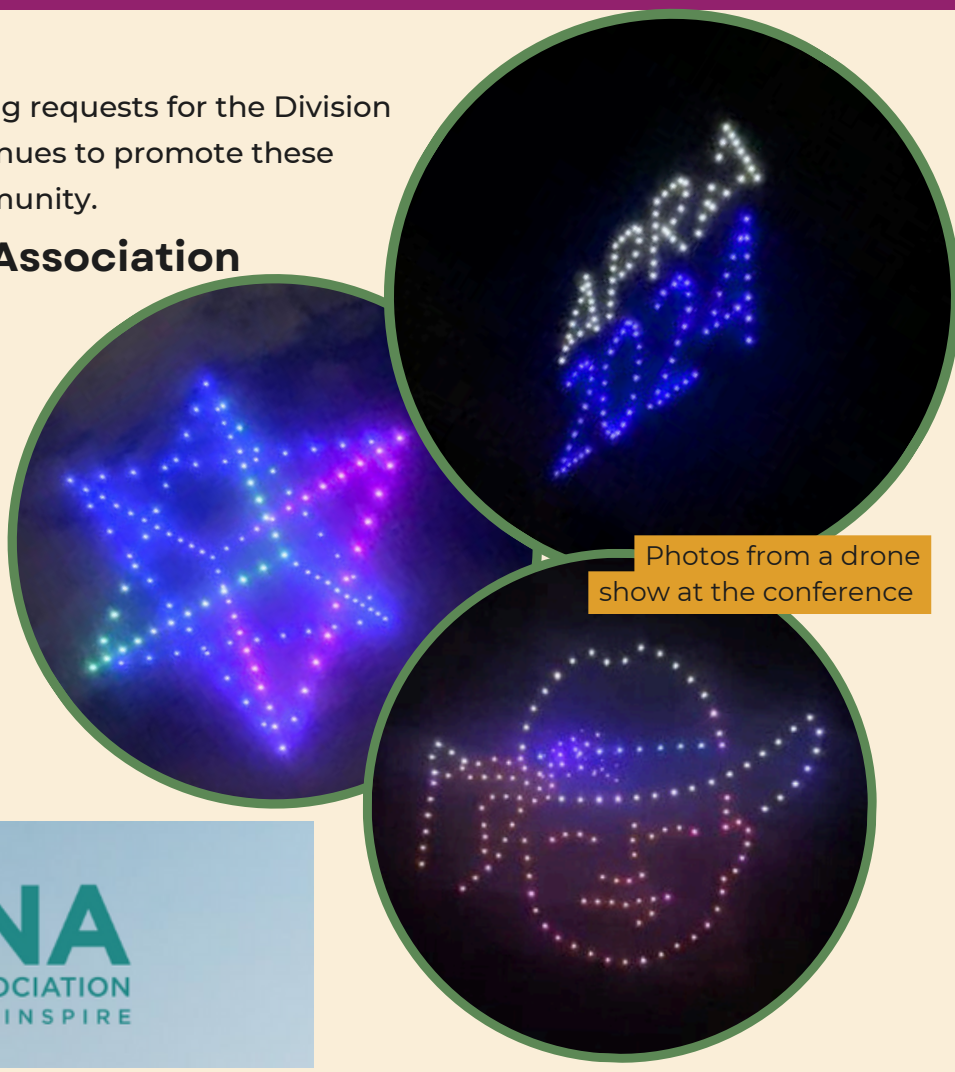
EVENTS & MARKETING

Marketing

Marketing completed twenty-one marketing requests for the Division throughout the month of August and continues to promote these programs and events throughout the community.

Arizona Parks and Recreation Association Conference & Expo

Seven representatives from PROSE attended the Annual Arizona Parks and Recreation Association Conference in Tucson. The conference offered opportunities to learn, network, and explore relevant products and services in the exhibition hall. Our Events and Marketing Coordinator was able to attend and came back with some ideas for potential events to bring to Flagstaff.



Photos from a drone show at the conference

ARIZONA PARKS & RECREATION ASSOCIATION
CONNECT + EDUCATE + INSPIRE

Winter Event Planning and Preparation

In partnership with the Flagstaff Downtown Business Alliance, the Events and Marketing team has already begun preparation for this year's Winter Wonderland event. These kinds of community events require ample planning and preparation to run smoothly. The team is excited about ideas to make this year's event better than before. Be sure to save the date, December 7th!





AIRPORT

AIRPORT RESCUE FIREFIGHTING (ARFF) AND OPERATIONS:
ARFF crews participated in a fire drill for the Air Traffic Control Tower. While tower employees practiced evacuating the ATCT, ARFF crews focused on apparatus setup locations, scene size-up, and pre-planning for emergency response.

AIRPORT MARKETING AND AIR SERVICE ATTRACTION:

- The Small Community Air Service Development Program (SCASDP) grant application has been submitted. United Airlines provided a letter of support to accompany the application. This is the first time we have included a letter of support from an airline, which enhances the application's score.
- Advertisements continue to run in the Arizona Daily Sun and the Flagstaff Business News. An additional bus ad was purchased to promote the LAX service throughout the NAU campus and downtown loop.





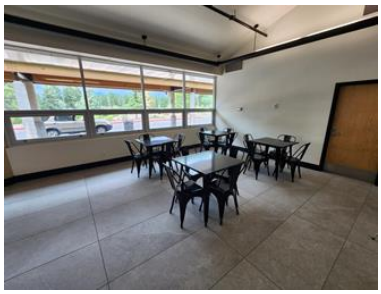
AIRPORT VISITORS:
We recently had a special visitor at FLG! On its final flight before retiring to Davis-Monthan AFB in Tucson, AZ—the largest aircraft boneyard in the world—one of the last KC-10 aerials refueling tankers in service made a stop at FLG for some final touch-and-go's. The U.S. Air Force is decommissioning its fleet of KC-10s and replacing them with the KC-46. The KC-10 is based on the DC-10 airliner and is one of the largest aircraft to ever visit FLG.



OPERATION READY FLG 2024:
Staff continue to prepare for Operation Ready FLG 2024, a full-scale exercise designed to test responses to an aircraft accident at the airport on Monday, September 9. The event will involve partners from 26 local, state, and federal agencies. Sixty volunteers were needed to portray injured and uninjured passengers. All volunteer positions have been filled, and there is currently a waitlist to participate.

PROJECT & GRANT UPDATES:

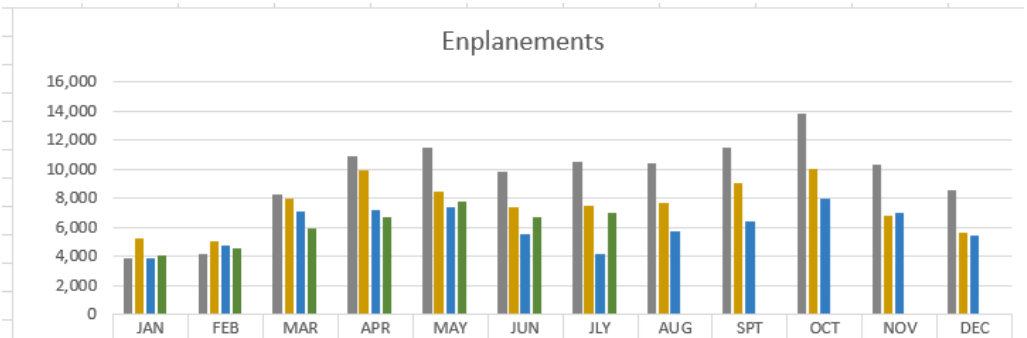
- Staff are finalizing the scope and fee with the contractor for the airport dining and visitor information space. There have been several revisions so far in the design phase of the project. Half of the furniture for the space has been installed.
- Temporary wayfinding signage has been placed throughout the concourse. The original signage was analyzed by a structural engineer and was determined to be too heavy to rehang on the concourse soffit.





SNOW REMOVAL EQUIPMENT BUILDING (SREB):
The design team continues to make progress on the construction documents. The contractor is working with the design team to begin the pricing process for the project. The contractor is finalizing the site utility evaluation which includes location and depth of existing utilities. The contractor is preparing to evaluate the stockpile soil material to verify it is compatible with the construction documents.

AIRPORT ENPLANEMENTS, FUEL FLOW, AND OPERATIONS: Enplanements increased 2,815 over prior year.



	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SPT	OCT	NOV	DEC
2021	3,817	4,188	8,222	10,886	11,431	9,848	10,504	10,439	11,523	13,800	10,343	8,522
2022	5,237	5,069	7,966	9,870	8,424	7,368	7,484	7,651	9,028	10,039	6,754	5,662
2023	3,888	4,757	7,111	7,172	7,385	5,484	4,124	5,680	6,416	7,997	7,014	5,466
2024	4,100	4,521	5,869	6,725	7,725	6,700	6,939					

CHOOSE FLAGSTAFF

COMMUNITY INVESTMENT

BEAUTIFICATION:

COMPLETED PROJECTS

City Hall Railings
211 W Aspen Avenue

Public Works reached out to BAS for a rail design that met permitting requirements to replace the round galvanized steel pipe that was non-compliant as part of the refurbishment of the stairs. Staff worked with Morning Dew on a simple minimalist design that punctuates the aesthetics of the building to draw the visitor towards the entrance. And because it's a BAS project, staff added a little sparkle. Staff chose powdered coated stainless steel, the most durable option against rusting that harms concrete, which was a factor in the previous stair deterioration. BAS is going to offer to assist with the cleaning of the malapai stonework as the cement debris is still visible on the inside stones. The railing paint color on the railing should bring out the color of the stones once cleaned properly.









ONGOING PROJECTS



- **Aspen (Niche) Bicycle and Pedestrian Enhancements**: Shop drawings approved and Notice to Proceed issued for August 19th. Construction time is 20 days with a completion date of September 13th.
- **British Phone Booth Library**: Project bid amongst vertical Jobs-on-Contract firms with the City.
- **Cleo Murdoch Park 3D Art**: BPAC approved the selection panel's recommended art concept, entitled ***Rustle***, which is a leaf sculpture made of weathering steel with phrases, sentences, words within. The text will come from the community and speak to that which they do not want to forget. PROSE is adding fencing to the park and possibly changing seating amenities, which could impact the initially chosen location of the sculpture within the park. Contract with the artist was reviewed by legal, but finalization will await confirmation of the

location. Will bring out the artist for another site visit in September and conduct more community outreach at that time.

- **Collections Management/ Photography**: Contract to photograph *Coconino Scroll* and Multicultural County Park Sculptural Exhibition finalized with procurement and legal and routing for signatures.
- **Donations:** Staff made a visit Gene Galazan's studio in Prescott to view the sculpture under consideration for Thorpe Park. Staff returned bronze elk maquette to Ed Reilly who is pursuing a private property location for his donation.
- **Downtown Green**: The project will commence August 12th. The vendor has 90 days to complete. The poles with the hanging flowers will be done after October 15th when the flowers come down.



- **Downtown Connection Center Southside Grove Sculpture**: Light fixtures sent to construction contractor for Art Glass. Much progress made on the Time-Table text. Just a few items out for final review. A layout, portion in pic left, was created that can be printed on project size foam board, 5 feet by 5 feet. Staff will take that display to Southside Community Association at soonest opportunity.
- **Maintenance/Conservation Projects**: Condition reporting was performed for all accessible City owned works of art. Maintenance and conservation efforts are being pursued for works in need. This month staff scoped work for a proposal from vendor to repair a Route 66 monument sign which had circle bits shot out, refurbishment of both the 89a and Fort Valley Road Monument signs, and oil and seal wood maintenance on all the signs. Staff also drafted guidelines for a new grant and reviewed with Legal. This grant will allow for artists, businesses, and other interested members of the public to get up to $7,500 to restore publicly accessible art that has been damaged and was created privately or through Beautification in Action grants.
- **Multicultural Park Sculpture Exhibition, Year Two:** Call closed; thirty (30) proposals received. Selection panel delayed until August because of vacations of panel members. The project video received approvals from Coconino County Parks and Recreation and the CoF Coordinator for Indigenous Initiatives.





Staff identified **35 potential photos** to be edited that feature sculpture fabrication and the exhibition opening. Staff designed the 26/27 Call to Artists flyer to be distributed to artists at the upcoming Santa Fe Indian Market.

- **Public Art Archive:** New records added: BO2024.1, City Hall staircase railings; 2022.3, Historic Southside Community Garden.
- **Public Art Map**: Staff identified new works to highlight and strategized a different layout/grouping of works to include on the map. Staff also identified works that no longer exist, exhibit progressed deterioration, or are not relevant to a city produced map of public art. Staff strategized a new walking tour of Downtown and Southside to revamp the current walking tour map based on changes to full map.
- **Route 66 Shields**: Potential locations plotted on a map and reviewed, with options of 7 or 13 shields.
- **Spruce Wash Wedge**: Capital Projects Manager David Nixon assigned to project. Decision reached to do an on-call procurement for landscape architect and an RSOQ for the artist.

- **Traffic Signal Cabinets:** Staff approved art files submitted to vendor for traffic signal cabinet locations at N. Fourth St./E. Sparrow Ave. and N Beaver St./FMC Pedestrian Crosswalk and worked with artist to revise and resubmit artwork and approved files for S. Lake Mary/W. High Country Trail. Staff addressed concerns raised by vendor on lining up designs that wrap around corners.

PROGRAMS & OUTREACH

- **APS & Electrical Cabinets**: Staff met with APS to formalize legal agreement for a pilot project that includes 10 cabinets. Staff identified six locations (3 BAS, 3 BIA) so far.
- **Arizona Art Administrator's Meeting**: Public art expert Jack Becker confirmed his involvement on September 20th AZ Art Administrators meeting hosted by Flagstaff. Crafted survey for participants and reached out to Creative Flagstaff in partnering for the event.
- **Beautification in Action (BIA) Grants**: Staff updated the BIA grant guidelines with Legal to increase grant amount to $7,500; Century Link has granted permission for Jillian Sanders to wrap the utility cabinet at Fort Valley Rd./W. Meade Ln.
- **BPAC**: July meeting held. Action items included approval of the recommended proposal (Anjola Ayodele) and alternate proposal for traffic signal cabinets at N. Fourth St. and E. Sparrow Ave. approval of the recommended proposal (Erika Tsouras) and alternate proposal for one cabinet at N. Beaver St. and Flagstaff Medical Center Pedestrian Crosswalk, as well as approval of the Cleo Murdoch Park 3D Art Project entitled "Rustle" by Beth Nybeck (covered in Projects above). Upcoming Chair and Vice-Chair nominations and service responsibilities were discussed.

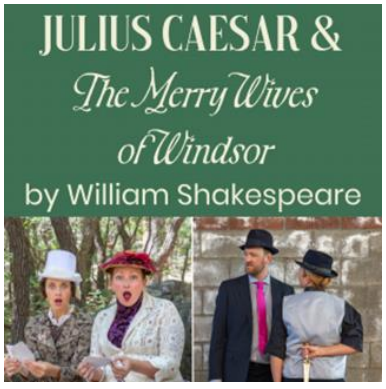




- **Creative Flagstaff**: First quarter payments ironed out and operating grant letters finalized.

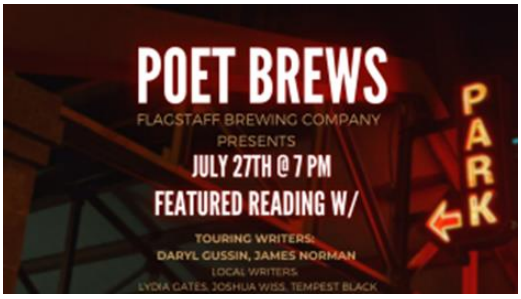
HIGHLIGHTED EVENTS IN JUNE BY A NONPROFIT SUPPORTED BY BBB TAX FUNDS:

Julius Caesar & The Merry Wives of Windsor
Held Friday, July 19, 7 pm | Saturday, July 20, 2 pm & 7 pm | Sunday, July 21, 2 pm and Weekends through August 4
Presented by Flagstaff Shakespeare Festival
Lowell Observatory, 1400 W. Mars Hill Rd.



To commemorate its 10th anniversary year, FlagShakes brought northern Arizona *Julius Caesar & The Merry Wives of Windsor* by William Shakespeare. *Julius Caesar* explores loyalty, honor, and betrayal, while *Merry Wives* revels in the joy of female friendship. One is a serious look at the violent consequences of a struggle for power, the other is a silly journey that makes one laugh from start to finish. Both shows were held at the beautiful, historic Lowell Observatory under our spacious, open-air festival tent, surrounded by ponderosa pine trees and the wide-open starry skies.

Poet Brews: A Featured Reading with Visiting & Local Writers
Held Saturday, July 27, 7 pm
Presented by [Northern Arizona Book Festival]
Flagstaff Brewing Company, 16 E. Route 66



Participants enjoyed evening of poetry by James Norman and Daryl Gussin and local writers Lydia Gates, Joshua Wiss and Tempest Black.

Coco-op Makerspace Art Market & Pint Night at Mother Road Brewing Co.
Held Tuesday, July 30, 4:30-7:30 pm
Presented by [Coco-op Makerspace]
7 S. Mikes Pike



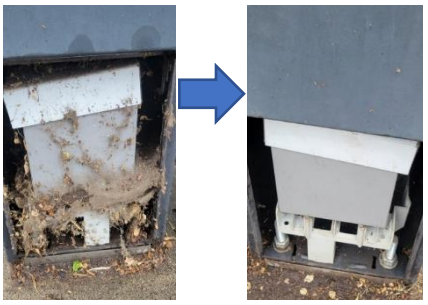
This was a family-friendly, event! Local artists and makers from Coco-op Makerspace hosted an art sale including ceramics, jewelry and more. During the art market, Mother Road donated $2 from each pour of Double 6 back to Coco-op Makerspace. People came to support art and innovation while enjoying community and great beer!

PARKFLAG:

Operational Updates

Parking Citations: As of July 1st, ParkFlag began entering parking citations into the Flagstaff Municipal Court system. This new process is necessary to implement an immobilization list for repeat offenders in the downtown area. Team members received training from the records department at the Flagstaff Police Department to process citations using OnCall, the shared records system with the Municipal Court.

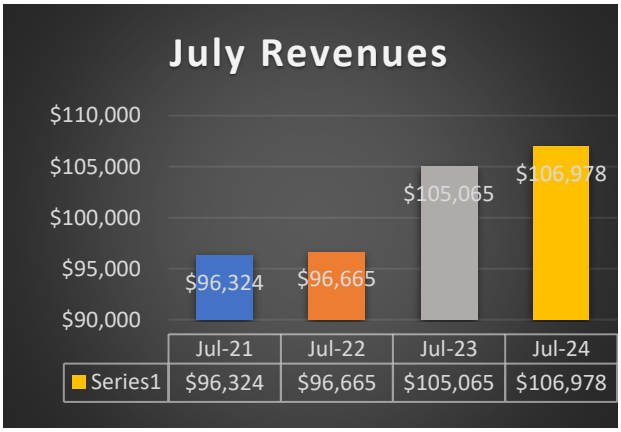
Spring Cleaning: The ParkFlag team completed their spring-cleaning efforts! Over several months, Parking Aides meticulously cleaned both the interior and exterior of every parking meter downtown. This included cleaning and replacing computer contacts, battery wires, card readers, screens, and keyboards. The battery compartments were also vacuumed. (Spiders were relocated to nearby bushes.)

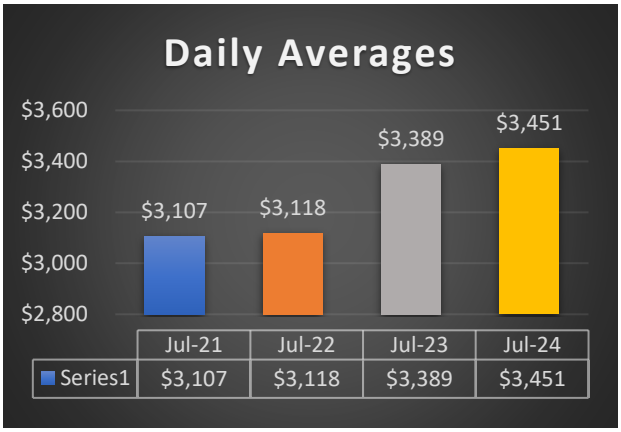


Repairs and Replacements:

- In July, ParkFlag repaired six parking kiosks and responded to multiple kiosk issue-related phone calls. Team members also added a sign back into our inventory that had been missing since 2020 and repaired two other signs on the Southside.
- Maintenance guides were created and placed in the control boxes of all exit gates at the airport. These flipbooks will assist parking aides and airport personnel with replacing receipt paper, clearing ticket stubs and resetting the gates when needed. Thank you, Ronald!

Parking Revenues: ParkFlag customers parked a total of 108,852 hours during the month of July with an average of 2.10 hours per parking session. These numbers are up over June.





ECONOMIC DEVELOPMENT:

SEMI-CON WEST TRADESHOW:



- Staff attended the Semi-Con West tradeshow with regional partners. This trip was a recon mission for gathering data and leads. Several connections were made with supply chain manufacturers. Part of the vision is to supply the new semi-conductor manufacturing plant, Taiwan Semiconductor Manufacturing Company (TSMC), in Phoenix.
- Next year's show will be held in Phoenix also, Oct 7-9, 2025. Staff will be coordinating with the Economic Collaborative of Northern Arizona (ECoNA) and other regional partners to get tours set up for suppliers pre and post conference to generate interest for relocating to Northern Arizona.

NEW BUSINESS:

- A young entrepreneur is receiving assistance in efforts to adapt a commercial building into indoor recreational space.
- Staff is working with a local manufacturer to execute a grant that will assist in their rail access.

BR&E INCENTIVE PROGRAM: Staff met with numerous business owners to inform them of the upcoming Business Retention & Expansion Incentive Program that will open applications on September 1. These initial meetings are informational and provide technical assistance. Additional information can be found here: [Business Retention & Expansion Incentive | Choose Flagstaff]

MOONSHOT:

- **SAVE GREEN BY GOING GREEN:** Staff presented on Economic Development Programs to the workshop, Save Green by Going Green, held at Moonshot by Local First Arizona on July 23rd.

- **MOONSHOT MID-YEAR REPORT:**
  Direct Link: https://heyzine.com/flip-book/98b425f08d.html



BUSINESS CLOSURES & RAPID RESPONSE TEAM: There were closure announcements by multiple businesses in the region and staff worked alongside EC0NA and the Workforce Development Board to communicate with policy makers and to let workers know resources for finding new employment in Flagstaff.

STAFFING: We are in the process of hiring a new Economic Development Manager.

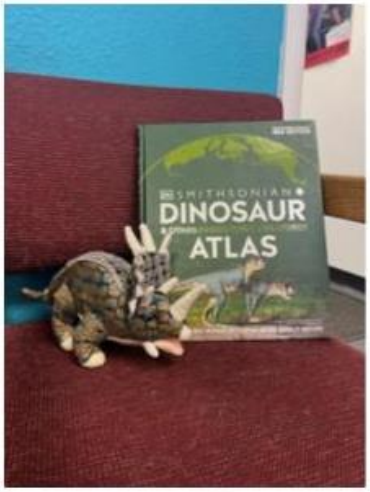
LIBRARY | CITY & COUNTY

Branch & Department Updates:



East Flagstaff Community Library

A beloved triceratops stuffed animal was left behind by a family visiting Flagstaff, so staff arranged to mail it to them. Before sending it home they took photos of it reading about itself in one of our books so its human could know it had a good visit to the library. When it arrived home the family reached out to say, "My son was so happy to see him and see his adventure at the library! Thank you thank you from the bottom of my heart! I love flagstaff and this just solidifies it!"



Downtown Departments -



- The library was able to join Flagstaff's second ever Pride Parade and quickly handed out all the goody bags this year! There was an increase in attendance and many cheers for library staff as they walked by. We were also at the festival, making library cards, giving out free books, coordinating a collaborative art piece, Storytimes, and more. Library staff interacted with over 200 people. It was a great weekend where staff were able to connect with the community and our patrons shared how happy they were to see us there!
- Library staff: Reece, Linda, Alyson, and Andrea, along with Linda's puppy, Darby, spent part of their Saturday cleaning up the Rio.

Reference:



- The Map Keepsake Box take-and-make kits were wildly popular, with us giving out all 68 kits by June 12th. After that we continued to hand out instructions for making your own.
- Staff held their first "Let's Talk About..." Civic Dialogue program, focused on free speech. It was a lively and friendly discussion, with one patron commenting, "That was the calmest Free Speech discussion I've ever been to!"

Youth Services:

- Summer Reading Challenge started June 10th.
- Ove 1,500 people attended our June SRC program!
- YS had 37 programs, 8 outreach events, weekly teen volunteer workshops, and 3 group visits, including Jungle Jill's Reptile Encounter, the annual Teddy Bear Picnic, Friday Flicks in customizable cardboard cars, and Fairy House building.









Youth Services:

July means Summer Reading Challenge in Youth Services and the 2024 SRC was a big success! In July, Youth Services had 48 programs, 6 outreach events including weekly Concerts in the Park and Touch a Truck, and 2 group visits (37 people total). Over 1600 participants attended July SRC programs.

Between Downtown and EFCL there were 12 teen volunteers for SRC and the Downtown teens collaboratively planned a program for the last week. One teen really wanted to have a cheese theme, so they put on a murder mystery/Clue game program called Pandemonium at the Pizzeria. It was a learning experience and a hit for teens who came to participate.

Below are some photo highlights of a few of the July SRC programs:



Bag Making Workshop





Sewing Program



PreK STEM



PreK STEM

Planet Science in Downtown Flagstaff hosted the last Lego Club of SRC with the theme of "Moonlanders". Everyone was very excited to build in a cool new place. Kids were able to explore and some even based their ships on things they found in the store. Lots of regular attendees were able to make it along with several families who just found their way into the store and participated. Two kids were even on a road trip from Colorado.





Reference:

Reference hosted a variety of programs including The Life of Frances B. McAllister, Let's Talk About the Rest of the First Amendment, Downwind Movie & Discussion, Senior Book Club discussion of *Water Dancer*, Senior Coffee Hour, Game Night, and the Thursday Night Book Club discussion of *Shutter*.

Adventures in Literature Afternoon Tea program hosted 19 participants and was described as fantastic program by attendees.




Archaeology's Deep Time Perspective was part of the Environmental Justice series and drew an attendance of 18. The presenter was knowledgeable and interesting.




East Flagstaff Library East Flagstaff Community Library:

On July 16th, Crafty Corner was held at Bushmaster Park and the over 40 attendees made nature mandalas using local flora. Plants harvested and pressed for the program included paintbrush, lupine, yarrow, coneflowers, ferns, and loco weed.







On July 20th, seventeen hikers joined library staff and Roving Ranger volunteers at Sandy Seep Trailhead. Participants learned about local flora and fauna, the geologic history of Mount Elden and the impacts of the Radio Fire. There was also a sighting of two fawns.







East Flagstaff Community Library hosted a Tosho-con (convention of anime fans) celebrating Japanese culture through the expression of art, anime, martial arts, and stories. The event drew 88 attendees and featured a martial arts demonstration and anime bingo. A badge system encouraged participation and offered a souvenir drawing. The children's room was used for activities and the teen room had zines and manga art.







An audience of 75 watched the magician Jolly Roger. Since 75 is the capacity of the room, staff had to turn people away, so a few families watched through the windows.



County Libraries:

Forest Lakes: The Summer Reading Challenge was a success with 35 kids registering and 16 finishing. Take and Make Crafts were popular with 68 given out in June and 63 in July.

Grand Canyon Community Library: At the Grand Canyon Community Library 32 participants took part in the summer reading program which was the first one offered in four years. The GCCL will now be in the former bank building permanently. Staff has removed all items from the storage containers, so the entire collection is now available to patrons and the containers can be returned to Flagstaff.



Tuba City Public Library:

The summer reading program began on June 10 and went up to July 18. Staff met with children twice a week and did activities pertaining to the theme: Adventures Begin at Your Library. Children who completed the challenge received awards, books, goodie bags and prizes.



Tuba City super readers

Tuba City Library awarded certificates to top readers and participants in a summer reading party July 19. During the program, kids made journals, did rock painting, made a wall map of the Navajo and Hopi reservations and more. (Photos/Tuba City Library)



Staff News:

- Reference hired a new Temp Library Specialist, Emily Klinger and Circulation hired Remy Stoddard to fill a clerk position.
- Amy Starns in Youth Services is retiring this month with her last day on August 30th. Youth Services won't be the same without her cheerful presence and artistic skills.
  Mary Lara, a temporary specialist in Youth Services had her last day at the library on July 29. She will be dearly missed.

Collection Management Services:

CMS has rearranged and cleared out some extra furniture and other items resulting in a space with a cleaner and more efficient configuration. Cubicles have been added to better utilize space in the center of the room.







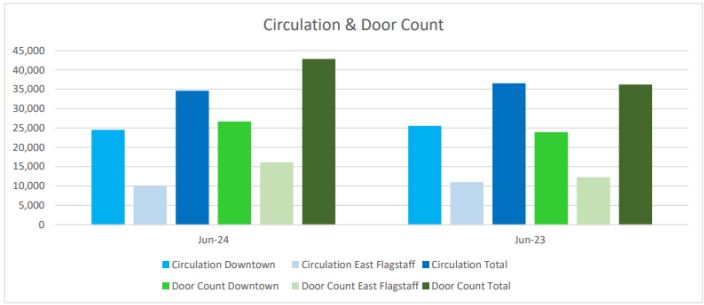


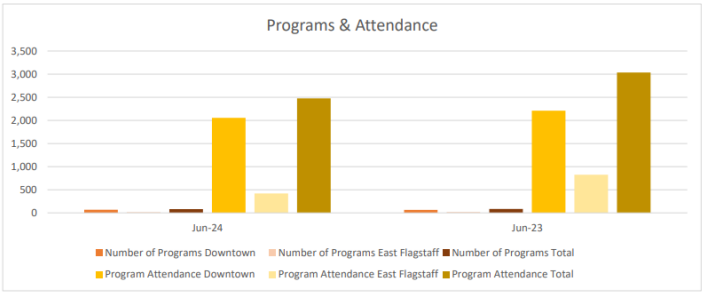
LIBRARY STATS:

STATISTICS

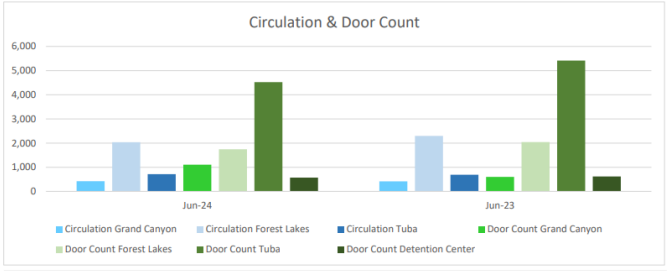
Countywide		Jun-24	Jun-23	Difference
Overdrive Circulation	All Libraries & Sora	8,855	7,657	15.65%

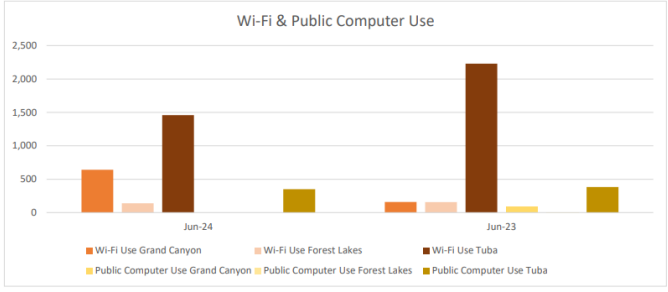
Downtown & EFCL		Jun-24	Jun-23	Difference
Circulation	Downtown	24,530	25,553	-4.00%
	East Flagstaff	10,099	11,003	-8.22%
	Total	**34,629**	**36,556**	**-5.27%**
Value of Loaned Materials	Downtown	$446,108	$473,327	-5.75%
	East Flagstaff	$185,605	$208,524	-10.99%
	Total	**631,713**	**681,851**	**-7.35%**
In-House Use	Downtown	17,095	19,602	-12.79%
	East Flagstaff	6,408	6,714	-4.56%
	Total	**23,503**	**26,316**	**-10.69%**
Door Count	Downtown	26,695	23,935	11.53%
	East Flagstaff	16,149	12,296	31.34%
	Total	**42,844**	**36,231**	**18.25%**
Wi-Fi Use	Downtown	4,476	4,171	7.31%
	East Flagstaff	1,563	2,279	-31.42%
	Total	**6,039**	**6,450**	**-6.37%**
Public Computer Use	Downtown	2,858	2,243	27.42%
	East Flagstaff	1,874	1,668	12.35%
	Total	**4,732**	**3,911**	**20.99%**
Number of Programs	Downtown	69	65	6.15%
	East Flagstaff	14	20	-30.00%
	Total	**83**	**85**	**-2.35%**
Program Attendance	Downtown	2,056	2,211	-7.01%
	East Flagstaff	419	824	-49.15%
	Total	**2,475**	**3,035**	**-18.45%**
Reference Help	Downtown	4,529	3,551	27.54%
	East Flagstaff	1,714	1,523	12.54%
	Total	**6,243**	**5,074**	**23.04%**





Branches		Jun-24	Jun-23	Difference
Circulation	Grand Canyon	423	416	1.68%
	Forest Lakes	2,032	2,297	-11.54%
	Tuba	711	689	3.19%
In-House Use	Grand Canyon	117	60	95.00%
	Forest Lakes	49	27	81.48%
	Tuba	96	251	-61.75%
	Detention Center	1,242	1,459	-14.87%
Door Count	Grand Canyon	1,107	599	84.81%
	Forest Lakes	1,742	2,040	-14.61%
	Tuba	4,523	5,416	-16.49%
	Detention Center	571	618	-7.61%
Wi-Fi Use	Grand Canyon	642	159	303.77%
	Forest Lakes	139	156	-10.90%
	Tuba	1,460	2,229	-34.50%
Public Computer Use	Grand Canyon	0	86	-100.00%
	Forest Lakes	0	5	-100.00%
	Tuba	350	383	-8.62%
Number of Programs	Grand Canyon	3	1	200.00%
	Forest Lakes	10	11	-9.09%
	Tuba	16	0	159900.00%
Program Attendance	Grand Canyon	43	4	975.00%
	Forest Lakes	182	141	29.08%
	Tuba	381	0	3809900.00%
Reference Help	Grand Canyon	320	236	35.59%
	Forest Lakes	1,407	721	95.15%
	Tuba	509	358	42.18%
	Detention Center	52	34	52.94%





TOURISM & VISITOR SERVICES

TOURISM METRICS: JULY 2024

YOY RevPAR for the Month of July:
The RevPAR number of $100.63 is down by 8.4% to July of LY. **This is since supply was up slightly and demand for traditional accommodations was down** by 1% YOY. Hotel/Motel operators dropped room rates to capture more share in the marketplace.

Rationale:
When demand does not keep up with supply in a particular month, hotel/motel operators usually lower rates to capture more market share. The lowering of average daily rates is what is making up the lion's share of the negative RevPAR number in July for Flagstaff. Why is demand down by 1% in July: the best answer is "options." The segment of the population that is traveling (many lower-income households are staying close to home due to inflation) are taking longer-haul trips – outbound international travel is at an all-time high with cheaper flights and a strong dollar.

The demand for Flagstaff is up year-to-date by almost 5% - so that is the good news. The Discover Flagstaff team and all the partners are working hard to promote the key drivers that bring us quality overnight stays – Rt. 66 nostalgia, Astrotourism, outdoor adventure/high altitude training, festivals and our food and spirits offerings.

Following is a snapshot of the metrics for July 2024:

July	2023	2024	Diff
OCC	79.9%	79%	-1.1%
ADR	$137.45	$127.32	-7.4%
RevPAR	$109.81	$100.63	-8.4%

MARKETING & MEDIA RELATIONS HIGHLIGHTS:

It was warm in Flagstaff in July, but hot, hot, hot in the Discover Flagstaff marketing vertical with some wins including:

- The discoverflagstaff.com landing page for festivals hit an all-time high relative to organic search. Organic search has tremendous brand value because search engines continue to rank our website and, in this example, the festivals page, due to its content quality, relevance and authority. A user coming to our site organically has a higher propensity to visit. They are considered a 'high value' customer.



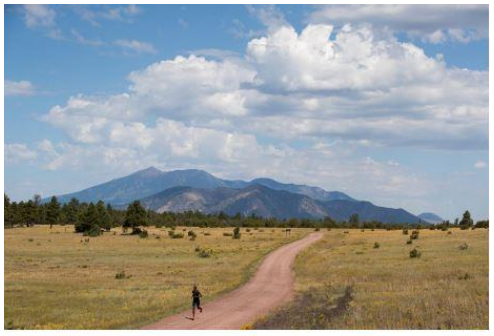
- Media coverage appeared in LA Times, AZCentral.com, and the Daily Telegraph.
- Email campaign had success with festival content and Flagstaff Local had a record click thru rate!
- Social platforms haven't rested – the "Then and Now" post went viral and earned more than 72,000 impressions and 1,500+ engagements.
- While Discover Flagstaff approaches marketing with many strategic platforms and verticals, one tactical example of a festival execution is shown in the snippet below which is a billboard located in metro Phoenix calling attention to our 4th of July festivities.

Media assists in July: 13
(2023: 9)

Journalists hosted in July: 2
(2023: 2)

Total articles generated: 105 (per Cision, our media tracking software provider).
(2023: 77)

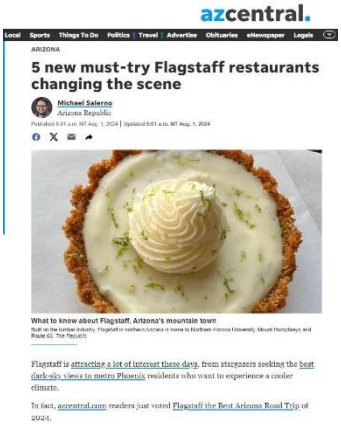
Highlights of media coverage:



Distance runner Mo Farah takes part in a training session near Flagstaff in August 2019. (Michael Steele / Getty Images)

Discover Flagstaff marketing themes supported in coverage: High altitude training, dining, national parks and monuments, Route 66, astrotourism.

L.A. Times: Why Olympic distance runners might be flocking to Flagstaff ahead of L.A. Games
https://www.latimes.com/sports/olympics/story/2024-07-18/olympics-training-flagstaff-los-angeles-2028-games


azcentral.
Local Sports Things To Do Politics Travel Advertise Obituaries eNewspaper Legals
ARIZONA
5 new must-try Flagstaff restaurants changing the scene
Michael Salerno
Arizona Republic
What to know about Flagstaff, Arizona's mountain town
Flagstaff is attracting a lot of interest these days, from stargazers seeking the best dark-sky views to metro Phoenix residents who want to experience a cooler climate.
In fact, azcentral.com readers just voted Flagstaff the Best Arizona Road Trip of 2024.

AZCentral.com: Readers agree: **This nature hotspot is the ultimate Arizona road trip destination** -- This story got a 2-page spread in print Saturday, July 27.
https://www.azcentral.com/story/travel/arizona/2024/07/23/best-arizona-road-trip-2024-flagstaff/74441657007/

AZCentral.com**: 5 new must-try Flagstaff restaurants changing the scene**
https://www.azcentral.com/story/travel/arizona/2024/08/01/new-restaurants-flagstaff-2024/74431971007/

AZFamily: A look inside Mother Road Brewery's Flagstaff beer factory
https://www.azfamily.com/2024/07/12/look-inside-mother-road-brewerys-flagstaff-beer-factory/

ABC15: Visit the world's most-preserved meteor crater in Northern Arizona
ABC15 covered the attraction in depth and it was picked up by CNN.
https://www.abc15.com/entertainment/events/visit-the-worlds-most-preserved-meteor-crater-in-northern-arizona

Singletracks.com: **Flagstaff's new downhill-only MTB trails were 18 years in the making -** Flagstaff Biking Organization getting recognition for its trail building. More on the way.
https://www.singletracks.com/mtb-trails/flagstaffs-new-downhill-only-mtb-trails-were-18-years-in-the-making/

Daily Telegraph in London: Why Route 66 is still the best way to see – and understand –America (This was from a FAM with the journalist earlier in the year)
https://www.telegraph.co.uk/travel/destinations/north-america/united-states/america-route-66/

Marketbeat: Survey: **America's Top 100 Hidden Gem Cities for Startups**
https://www.marketbeat.com/originals/americas-top-100-hidden-gem-cities-for-startups/

WEBSITE:

Comparisons are made YOY:

- **Domestic users increased** 8.6% for a total of 93,925 users. Strongest US interest is from the drive market -- Phoenix was up 16.64% for a total of 19,387 people, Tempe increased 14.84% for a total of 4,441 people, Los Angeles was up 37% for a total of 3,500 people, Las Vegas increased 76% to 2,352 people and Dallas increased 45% to 1,323 people. And rounding out the list, list Denver and New York were also up.
- **International users also had increases**. Increasing were Canada with a total of 695 users, MX increased and had 568 users, India increased 74% and had a total of 414 users; UK had a decrease of 18% and had 475 users, and Germany had a decrease of 9% and a total of 386 users.
- Eight routinely monitored website metrics had increases in the verticals of acquisition and engagement. We had a **9% gain in new users** which tells a good story of brand familiarity/repeat sessions while also indicating we are reaching new people.
- **Top landing pages** were **4th of July** events which increased 15% to 11,214 views, things to do increased 2.75% with 5,295 views, **events/festivals/parade** increased 40% with 5,129 views, and **dining and nightlife** had a 300% increase with a total of 2,036 views. The webcam page also increased.
- Page improvements were made:
  - Optimized: Hopi Arts and Cultural Festival page and Flagstaff Chili Festival page
  - Enhanced the Lowell Observatory page
- **There were 5,056 partner referrals or outbound links to partner sites and the top five most clicked are: AZ Snowbowl, Walnut Canyon National Monument, Lowell Observatory, Sunset Crater National Monument and AZ Mountain Inn and Cabins.**



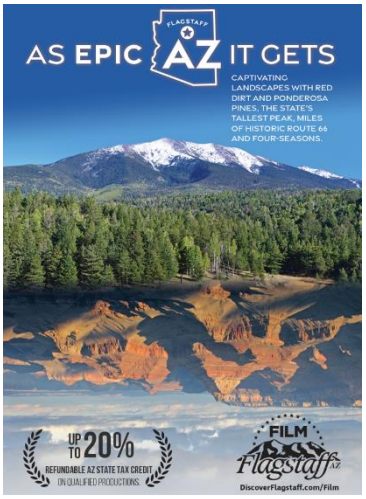
Flagstaff comes out as the winner for azcentral's Best Arizona Road Trip poll. *Canva*

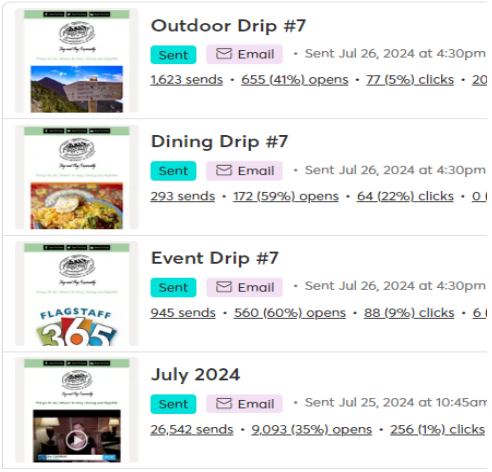
- **Booking engine provided 235 referrals**, length of stay searched was 2.1 days and top five properties were: Little America, Hyatt Place, Residence Inn, Motel Dubeau and Courtyard Marriott.
- 340 visitor guides were requested, and 36 newsletter sign-ups occurred.

FILM:

Film permits issued: 1
(2023: 2)
Cave Without a Name indie project

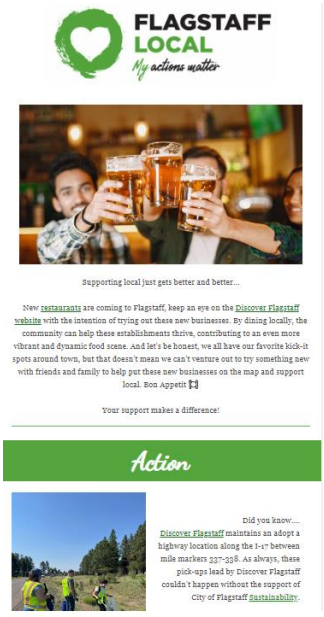
Film assists: 5
(2023: n/a)





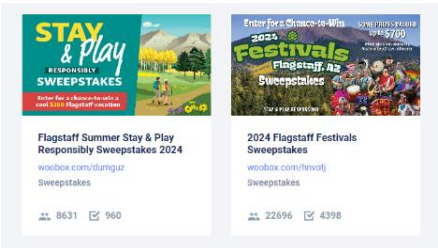
EMAIL CAMPAIGNS:

- **Discover Flagstaff -** Reach increased 15% while open rate decreased 10%. Top clicks went to the Festival sweeps, Accommodations, and High-Altitude Training. The subject headline was "Flagstaff Olympian Efforts, 356 Medals and Counting" and the more successful send time was Thursday morning at 10:45am. The resend to non-openers went out at 10:30am on the following Tuesday. The July 2023 newsletter likely did better because the subject headline had more information included, it was "Fun Festivals, Free Opportunities, Be Fire Aware" so appealed to a few different audiences. The 2024 subject headline was solely focused on relating to the Olympics. Future subject headlines will continue to include more than once subject.
- **Flagstaff Local -** The FL newsletter received a whopping 40% CTR! While 78% open rate has been our highest, this is a strong second, and 45% CTR is the absolute highest we have ever seen. Top clicks went to the Discover Flagstaff dining and nightlife restaurants landing page, the Discover Flagstaff homepage, and the Flagstaff Local homepage.



SWEEPSTAKES:

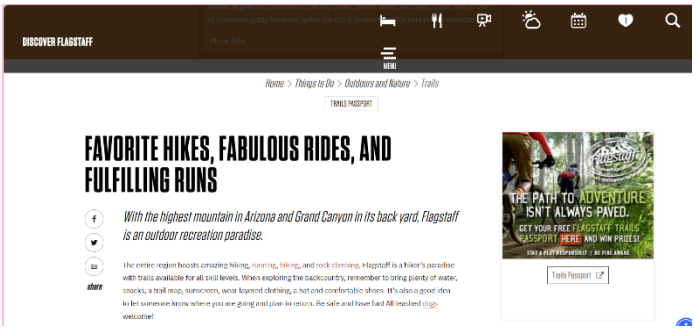
- **Flagstaff Festival Sweepstakes**
- **Flagstaff Summer Stay and Play Sweepstakes**



PASSPORTS:

- **Trails Passport** results have been down in 2024 compared to 2023. We are working on a video to increase attention and engagement, also to inspire and show a glimpse of what comes out of downloading the passport.

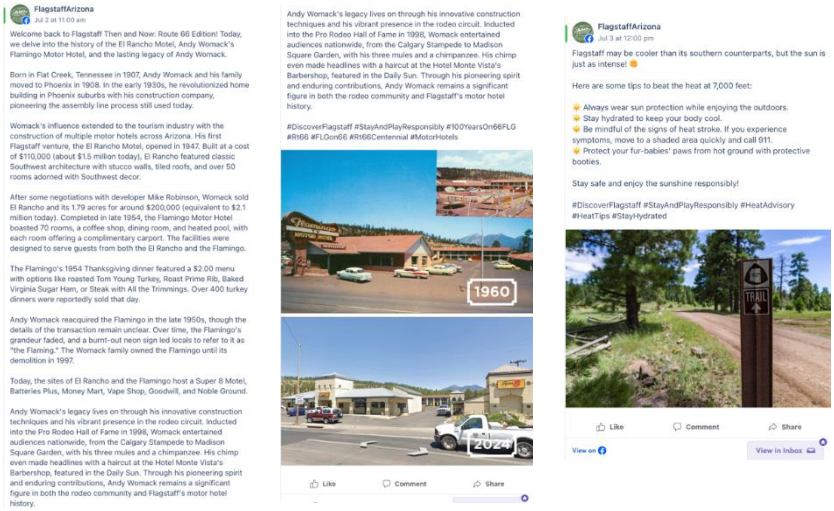




SOCIAL MEDIA:

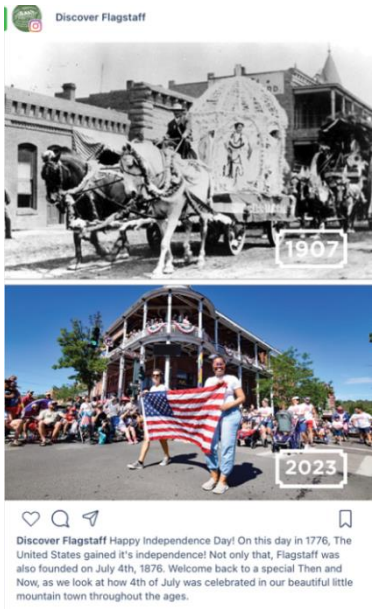
- Had another Then and Now post go viral, with over 72,000 impressions and over 1,500 engagements.
- Still very much so pushing festivals as our main bulk of content this summer, with posts supporting other pillars sprinkled about. Experimenting with motivational/short and sweet posts to inspire more Trails Passport sign ups.
- Posted a "meme" Instagram Reel about ignoring problems in the mountains that was relatively popular, with 13k plays, 6k impressions and 597 engagements. The Reel made for the Az Highland Celtic Festival was also popular at 5k plays, 3k impressions and 227 engagements.
- Pushing Flagstaff 365 events on Discover Flagstaff as well to promote sign ups.
  Top Facebook Posts:

Top Instagram Posts:



Reel Promoting Trails Passport:
https://www.instagram.com/reel/C9h0CDGJJeP/
Me in the Mountains Ignoring my Problems Reel: https://www.instagram.com/reel/C9KqTzXJW0m/
Arizona Highlands Celtic Festival promo video: https://www.instagram.com/reel/C9SixeGv3ip/







SALES:

INTERNATIONAL TRAVEL TRADE:

- **CONGRATULATIONS, MEG! - Achieved – Professional in Destination Management Certification**
  The International Travel Trade Manager, Meg Roederer, achieved the Professional in Destination Management (PDM) certificate from Destinations International. The certificate program includes two sections: section one, "Fundamentals of Destination Management and Marketing," and section two, "Fundamentals of Sales." There were several great takeaways that will be implemented into the sales strategy and marketing plan. For example, DestinationNext, how to make the most of tradeshows, marketing and branding, destination research, and the history of the tourism industry. In addition, greater insight on meetings and events was received regarding the Event Impact Calculator, MINT+, and RFPs.



- **Published – FVW Academy**
  Discover Flagstaff is working with Arizona Office of Tourism German Rep, Simone Kreckle on the FVW German Academy (FVW Akademie). This is a year-long campaign to educate and inspire travel to our destination. The FVW Akademie is the central and independent portal for training and education in tourism and business travel. The portal's focus lies on travel sales. The FVW Akademie reaches more than 13,300 registered users with average page impressions per month at 78,000, average visits per month at



4,200 and 5,000 users receive the FVW Akademie newsletter. Flagstaff was featured in the July newsletter and on the website.

Arizona | fvw|TravelTalk Akademie

- **FAM Tour - Hosted William Sharnow Foundation**
  Discover Flagstaff and the Arizona Office of Tourism hosted German Mega-Trade FAM with the Willy Scharnow Foundation. The Willy Scharnow Foundation is a touristic foundation that focuses on the education of travel agents. They offer a fam trip to different destinations yearly and planned a Las Vegas-Arizona Fam.



- The group of 15 stayed one night at the Americana Motor Hotel and experienced Lowell Observatory, downtown Flagstaff, Flagstaff Extreme and dined at Lumberyard Brewing Company. A special thank you to Councilmember Lori Matthews and Councilmember Miranda Sweet for welcoming the group to Flagstaff and joining the FAM tour for dinner at Lumberyard Brewing Company. FAM tours are essential to the trade sales process to create bookings that educate and inspire travel to our community by learning about our culture, history, sustainability, places to eat and stay as well as the things to see and do.





- **Conducted – Community Outreach**
  - Experienced a Little America partner lunch with Senior Sales Manager Ryan Kennedy and Jessica Young, Discover Flagstaff Sales & Marketing Manager: Meetings & Events to discuss latest the Little America property and the latest Flagstaff tourism trends and activities.
  - Participated in the Discover Flagstaff booth on the 4th of July Heritage Square Street Faire with Tourism Commissioner and Peak Events Owner Jennifer Grogan and the





Visitor Center Manager Jessica Johnson. We educated visitors and residents about Flagstaff tourism and gave out stickers and brochures.

MEETINGS/EVENTS/CONFERENCES:



CONFERENCE/ROOMS LEADS/BOOKINGS: 0 Leads were sent in the Month of July.

MEETINGS/CONFERENCE SERVICES: Staff attended the AzSAE Board Meeting, Held 2 AzSAE Getaway planning meetings (Getaway will be hosted in Flagstaff in September), EAC Meetings, and the One West Education Summit Planning meeting. Staff had meetings and provided conference services for 2 groups, had meetings/site visits with 6 partners, as well as Visit Prescott and AOT staff.

MARKETING: Staff had meetings to prepare and launch two upcoming meetings marketing campaigns for FY25.

VISITOR SERVICES:

Visitor Center –July 2024

July	2023	2024	YoY Change
Walk-ins	12,974	13,948	8%
Retail Sales	$40,696	$44,116	8%

Model Train

- The Model Train ran 321 times during the month of July.

Brewery Trail

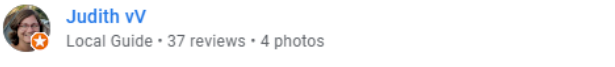
- Visitor Center gave out 149-pint glasses for Flagstaff Brewery Trail redemptions!

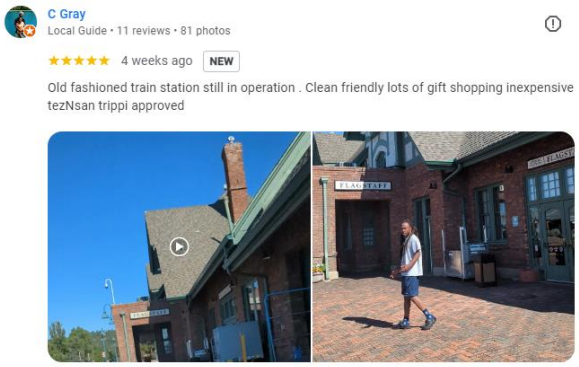
First Friday Artwalk

- Visitor Center participated in First Friday Artwalk we hosted 4 artists and had 83 walk-ins during the event.

Google Reviews

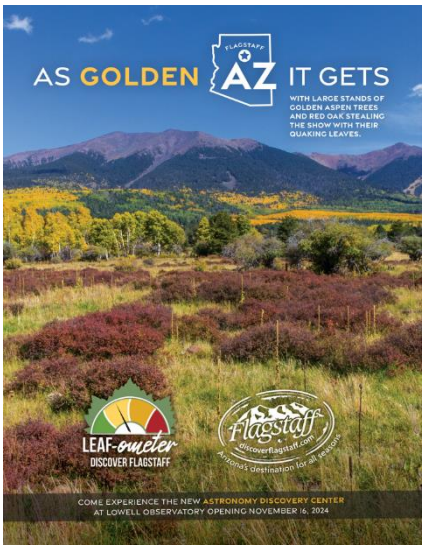
- Visitor Center received many positive reviews on our Google listing below are a couple examples.





CREATIVE SERVICES:

ADVERTISING:



- **FLAGSTAFF FESTIVAL ADS:** Created August-October Flagstaff Festival print ads for the Arizona Daily Sun and the Phoenix New Times
- **TRAILS PASSPORT AD:** Designed a Trails Passport/Be Fire Aware print ad for the Phoenix New Times
- **BE FIRE AWARE AD:** Created a Be Fire Aware ad for the Emergency Preparedness section in the Arizona Daily Sun
- **AIRPORT AD:** Designed "Fly Nonstop to LAX" full-page ad for the NAU Yearbook and a half page ad for Flagstaff Business News
- **FALL LEAFOMETER AD:** Designed a fall colors/leafometer ad to run in Arizona Highways and AZ Drive Guide
- **GREEN BOOK:** Continued to update the Flagstaff Green Book Walking Tour brochure
- **FOODIE:** Organized a photoshoot at Toasted Owl for the foodie campaign
- **DIGITAL BILLBOARDS:** Created digital billboards for PHX promoting festivals
- **ROUTE 66:** Continued work on Route 66 centennial signs along Route 66 and scheduling a repaint of the current Route 66 street mural at Visitor Center
- **FILM:** Continued work with videographer to create a location film reel promoting Flagstaff
- **FILM:** Created digital and print ads promoting Flagstaff Film
- **DIGTIAL ADS:** Created new ad sets for Datafy promoting Pickin' in the Pines, Hopi Festival and Classic car show
- **GCOT:** Created an ad promoting astrotourism for GCOT



CITY PROJECTS:

- **BBB RENEWAL DIGITAL ADS:** Created digital ads for NAU social platforms, the NAU Skydome videoboards, and two sets for DATAFY
- **BBB PRINT AD:** Designed a full-page BBB renewal ad for the Flagstaff Business News
- **HR:** Created a T-Shirt design for HR and Champions
- **BUSINESS CARDS:** Created business cards for water services and engineering



WEBSITE:

- **BLOGS:** New blog was added to DiscoverFlagstaff.com: Top Flagstaff Vegan Restaurants











THANK YOU FOR YOUR CONTINUED PARTNERSHIP!

Quarterly Report

Drinking Water | Wastewater | Reclaimed Water | Stormwater

WATER SERVICES UPDATE – APRIL TO JUNE 2024

DIVISION HIGHLIGHTS

This spring, the Water Services team entered the final stretch of the water, wastewater, and reclaimed water rate study, ramping up efforts to inform the public and work with the Flagstaff City Council, the Water Commission, Stantec, and other parties to adopt a new rate structure that minimized the cost impact to customers.



Still from the Future of Water Rate Study video.

On Wednesday, July 3, the Flagstaff City Council adopted a resolution and ordinance to increase the potable water, sewer, and reclaimed water rates and fees over a five-year period. The team considers this resolution a huge success, with 80% of the 5-year capital improvement plan receiving funding.

The City of Flagstaff Water Services strives to uphold several core business values outlined in our 2025 Strategic Plan, all of which are reflected in the various activities and sections of the division. These values include sound planning and appropriate investment; reliable water supplies and water service; protection of public health and the environment; exceptional customer service; sound financial management and efficiency; and transparency and robust community engagement.

Grant opportunities included:

- $10 million provided in grants and cooperatives for Spruce Wash projects.

- $3.5 million re-allocated from the Forest Service's Forest Health Initiative to the Wedge Regional Detention Basin.
- Received four grants totaling $1 million from the Water Infrastructure Finance Authority (WIFA) for water resource systems modeling and efficiency projects.

ADMINISTRATION

- On April 8, managers at Water Services came together for a drop-in event. This occasion marked the first time in many months that managers were all together for a photo opportunity.
- On May 18, the rate study team hosted a community drop in event at the Aquaplex that was attended by the Mayor, two members of City Council, and 50 members of the public. Other rate study efforts included:
    - Over one dozen stakeholder meetings and outreach events.
    - Regular updates to the rate calculator and cleanwaterflagstaff.com.
- Industrial Pretreatment Inspectors Glenn Kuyper and Conrad Berkompas received WOW awards for their efforts in investigative regulatory compliance.



Water Services managers at the April 8 drop-in event.



Mayor Becky Daggett and Councilmembers McCarthy and Harris pose with Water Services staff at the May 18 event.

RECRUITMENTS

- Sarah Jablon joined the team in April as the Community Engagement Specialist.
- Michael Gouhin joined as Stormwater Operator in April.
- Dale Harris joined Water Production as the new Maintenance Supervisor in May.
- Courtney Hawley came to Water Services from the Community Development division in June, joining the Engineering team as the new Plan Reviewer.
- Isaac Arenivaz became the Water Conservation and GIS Aide in April.
- Shawn Arent left the City at the end of June. He will be missed.

- Current vacancies: Stormwater Senior Project Manager, Water Production Operations Supervisor, Water Services Analyst SCADA, Water Services Operators.

WATER COMMISSION AGENDA

- Water Commission meetings focused on the water, sewer, and reclaimed water rate study, spring routine flood mitigation, Forest Service updates, and the 2023 Consumer Confidence Report.

ENGINEERING

- The Schultz Creek Drainage Improvements Project at US HWY 180 began in April and is expected to be substantially completed by mid-August. Thanks to the efforts of the project team led by Mac McNamara and by the contractor, Banicki Construction, the following milestones were successfully completed:
    - Pre-cast box culvert completed in July.
    - 20” waterline vertical realignment completed in June.
- Switzer Phase 4 water transmission mains and the Soliere water transmission main were major projects for the quarter. Both projects were completed in July.
- Stormwater and Capital worked with BNSF on a design for the culvert at 338.9 milepost, utilizing BNSF’s sub-contractor, TranSystems, for the design.
- The Lower Spruce/Switzer Wash channel restoration design was completed in April. This is a FEMA-City partnership. The construction phase is awaiting grant award from DEMA.

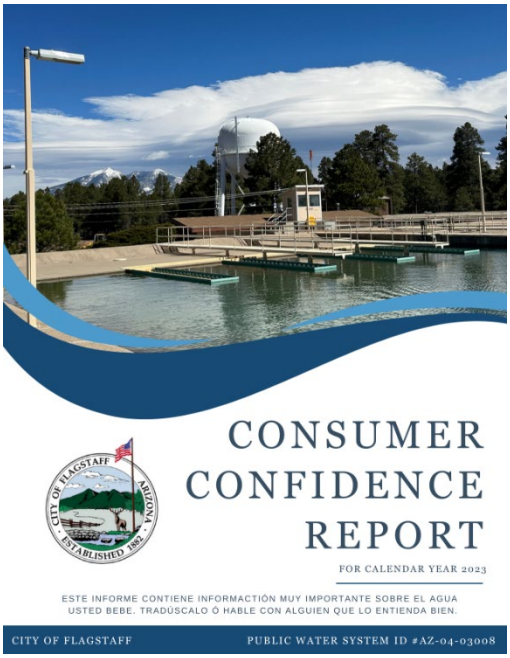


Stormwater Box Culvert placed in ground at US Hwy 180.



Aerial picture of the Schultz Creek Drainage Improvements Project at US Hwy 180 during culvert placement.

REGULATORY COMPLIANCE



Cover page of the 2023 Consumer Confidence Report.

- The 2023 Consumer Confidence Report (CCR) was published in June. Thanks to Krista Snow and AJ Stills for their work completing this critical resource. The CCR was shared through the flagstaff.az.gov website, on social media, and through print and email communications.
- In April, EPA announced their per- and polyfluoroalkyl substances (PFAS) limits and how they intend to proceed to implement these new regulations.
- Wildcat had an ADEQ Technical assessment visit in April regarding an exceedance of chlorine from November. The visit and tour went well. The report indicated improvements Wildcat can make to their chlorine/dechlorination process.
- ADEQ is moving forward with an electronic reporting database for drinking water reports. This will be a huge step in streamlining lab data directly to ADEQ.
- Jolene hosted ADEQ practice exams in May at Rio. The last scheduled Gateway exams for Flagstaff also took place in May.
- As of May, Continental Country Club no longer has a discharge permit with ADEQ and is now considered a reclaim user only.
- The USGS buildings that are leased from the City are now required to do water quality testing. Krista and Jolene have been assisting Emergency Management, Real Estate, and Facilities with getting quotes from local laboratories for the scope of work that was provided by GSA.
- Krista and Jolene worked with PROSE to modify special event permits to allow applicants to describe hydrant water use, to ensure it isn't used for drinking purposes.

SCADA INFORMATION SYSTEMS

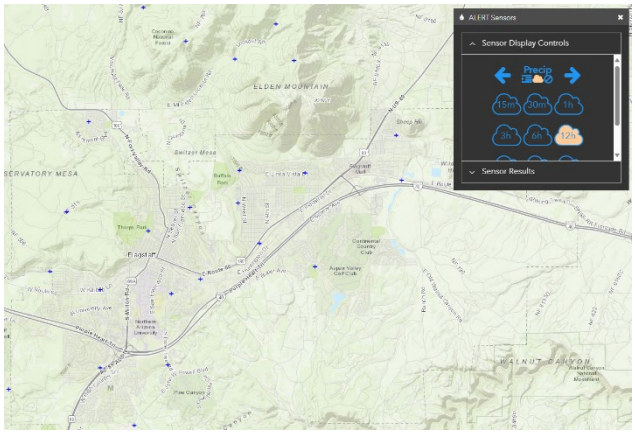
- SCADA/IS annual CityWorks training for CMMS took place in May.
- NAU agreed to share their wastewater, reclaimed water, and stormwater information to add into our GIS layers.

STORMWATER



Sandbag drop off area at Thorpe Park.

- In April, Stormwater sent out flood notification letters to the Pipeline Fire and Museum Fire flood areas. They also began planning for summer sandbag removal operations in the Coconino Estates neighborhood.
- The Regional Plan for Stormwater was also finalized in April.
- The Spruce Wash suite of bond projects is underway with contractor Eagle Mountain Construction.
- The Stormwater team attended the Arizona Floodplain Management Association (AFMA) conference in May.
- The Downtown Mile project is coordinating with the Downtown Lateral – Santa Fe project on a comprehensive drainage plan on Santa Fe, at 60% design review in June. The project is being managed by Trevor, Christine, and Ed.
- Doug is managing the Stormwater Drainage Design Manual update, the first since 2009.
- Chase is coordinating several Letter of Map Revisions (LOMR), including a new LOMR for Bow and Arrow Wash.
- Chase also completed the 5-year Corporate Social Responsibility audit. This is a very intensive process but important for maintaining our 25% discount for NFIP (federal flood insurance policies).
- Shannon Long completed a high volume of Stormwater credit manual applications as well as inspections.
- A new well lid was installed on Beale in May.
- Other completed activities included basin dredging and install, debris removal, and development review. Siren install and testing in Sunnyside commenced in June.
- The new Freidlein Prairie flood alert gauge in online, it can be found on our real-time gauge website: https://rain.flagstaffaz.gov/jefmap/.



Sandbag drop off area at Thorpe Park.

FIELD OPERATIONS

- In April, Patrick O'Connor worked with Erin Young and Shannon Jones to finalize and submit the WIFA Grant Agreement.
- Water Meter Contracts were approved by Council on Tuesday, April 2.
- Field operations revised their Confined Space Entry form per Workplace Safety Specialists recommendations.
- Fleet Underutilized lists for Water Services were presented in April and May.
- NORESCO began their first Phase of water meter change outs for accuracy testing purposes. Field Operations collected data from ERTs for all meters.

WATER DISTRIBUTION

- Along with Field Operations, Water Distribution repaired the following main breaks in April through June:
  - 3106 N. Grandview Dr – 6" 1961 AC pipe.
  - 302 W. Oak Ave – 6" 1962 Cast Iron.
  - 2614 N. 4th St – 8" 1977 AC pipe.
  - End of line blow off leak on Eddy in Cheshire.
- Service repairs and replacements:
  - 3520, 3505 N. Jamison Blvd.
  - 4403 E. Blizzard Way.
  - 615 W. Birch Ave.
  - 3443 W. Mountain Dr – Saddle replacement.
  - E. Lewis and N. Tindle – Corporation stop Leak.
  - 2612 E. Miller Dr – Partial Service Replacement.
  - 3019 N. Steves Blvd – Partial Service Replacement.
  - 1651 S. Milton Rd – Plumber damaged a gate valve.
  - 5250 N. US HWY 89 – Colony Mobile Home Park plumber damaged a gate valve.
- Water main tie-ins:
  - Joy Cone main extension.
  - Grandview at Linda Vista.
  - Soliere at Elk Run.
  - Beulah at University.
  - Grandview (All services are on the new main).
  - Soliere at Elk Run (All tie-ins complete).
  - Linda Vista – 16" vertical realignment for new Spruce Wash culvert.
  - Grandview and Cedar.



Water main repair at 2614 N. 4th St. The break was likely due to the root system of a large pine tree.

- Linda Vista – 8” vertical realignment for new Spruce Wash culvert.
- Yale and University – New Yale line is completely tied in.

- All work completed at Switzer Phase 4.
- Water Distribution began the final push of hydrant inspections, inspecting more than 1000 hydrants between April and June. Challenges included field connectivity, truck availability and manpower. Because of this, they were unable to meet their July 1 deadline.
- Water Distribution also experienced issues with service trucks, with several down for repairs.

WASTEWATER COLLECTIONS

- Wastewater Collections continues to search for candidates to fill operator positions.
- Crews continued to work on regular preventive maintenance.
- A VCP pipe failed at Cherry Hill. Wastewater Collections moved quickly with contractor Eagle Mountain Construction to replace the failing VCP with 200 feet of PVC pipe as well as the replacement of two manholes.
- The Collections team is using two combo trucks to perform regular preventative maintenance.
- Installed a 4’’ tap at U-Haul Moving and Storage.
- Installed 5-6’’ taps at the Lake Mary Villas on Lake Mary Rd.



Joe Almendarez talks about the Cherry Hill pipe replacement in a video for social media.

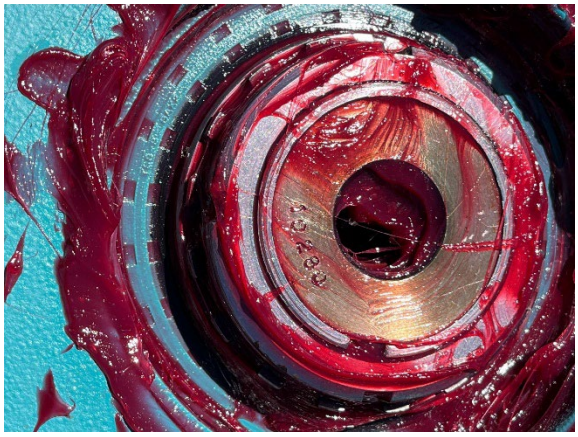
WATER PRODUCTION

- In April, Water Production reduced surface water production with bi-annual basin cleaning.
- Tank Maintenance and painting also commenced in April.
- Construction for the Inner Basin Waterline started in May.
- Public Safety Power Shutoffs (PSPS) included in Fire Season Preparation presentation to Council were conducted on April 23rd. PSPS events will have a huge impact on water production supplies and operations possibly triggering Water Conservation Strategies which has not happened since 2002.
- In May, communication with Raw Water Pump Station was restored. Just in time to increase surface water production with increasing demand.
- Finally resolved an issue with the largest pump/motor at the Lake Mary Water Treatment Plant with new soft start. All discharge pumps and motors are back in automatic control and full operation.

- Also resolved back-feed issue with Tuthill Well discharge valve.
- Hunter Contracting is still monitoring flow at Waterline and Schultz Pass Roads. As of June, the Inner Basin spring water flow rates and turbidity was on the cusp on being usable, bouncing between 350gpm and 500 with turbidity well below a usable threshhold.
- Contracts have been awarded and are underway for well and pump maintenance and tank maintenance.
- The Backwash Tower anniversary inspection took place in June to wrap up the project and repair any spots that need attention.
- Amberwood Booster Station pump redundancy was restored in June. All booster stations are now in full operation.
- By summertime, potable water consumption exceeded 9 million gallons per day.

WATER RECLAMATION PLANTS

- In April, Lee and Troy visited the ARTi biochar unit in Eager, AZ that is being used to convert forest products. This visit prompted the planning for a pilot program with a Shincci model dryer at the Wildcat Hill Water Reclamation Plant. If successful, a dryer could solve our capacity issue for wastewater solids processing at Wildcat Hill.
- The following activities were reported at the Rio de Flag Water Reclamation Plant:
    - West basin and mixer project – variable-frequency drives for the mixers have been installed.
    - Staff rebuilt and installed a sample pump.
    - Staff repaired skimmer system for sand filter.
    - Staff repaired two small leaks in reclaim pump room.
    - Sent off influent pump for rebuild to Arizona Pump Resources.
    - Coordinated with blower manufacture for purchase of sheeves and fan parts for Aeration blower #3. The existing blower was throwing belts for an unknown reason.
    - Disc filter gate valve replacements and repairs.



Mixer failure on East Basin at Rio. Mixer had been online for 8 months at the time of failure.

- The following activities were reported at Wildcat Hill:
    - 3 JOC roof repair projects were completed at Wildcat. Areas included the hallway to the blower room, the blower room, storage rooms, the storm water building, the headworks building, the primary effluent pump building, the secondary effluent pump building, and the reclaim pump building.

- Dredging commenced at the East pond. Staff replaced a failed bearing on the dredge before the season.
- Repaired failed primary sludge collector in primary clarifier #1.
- Serviced secondary clarifiers 4 & 5.
- Have two reclaim pumps out for rebuild to Phoenix Pumps.
- Received repaired and rebuilt RAS pump from Arizona Pump Resources.
- Worked with Garver on a primary effluent pump station design.
- Worked with Carrollo on the Wildcat solids handling project.

WATER RESOURCES AND CONSERVATION

- April was Water Awareness Month! The Water Conservation team tabled and hosted about a dozen events including Earth Day at Bushmaster Park. Tours included:
  - Tour of the Rio de Flag Water Reclamation Plant.
  - The yearly NAU ENV 181 field trip at Frances Short Pond and the Lake Mary Water Treatment Plant. 90 NAU students were in attendance.
- Team is in the process of finally replacing the trailer that was stolen from the WSAB parking lot.
- Water Conservation is preparing to launch the Income Qualifying Homeowner Leak Repair and Efficient Fixture Program.



Group from April tour of the Rio de Flag WRP.



NAU students at Frances Short Pond.

Meade Lane Drainage



TEAM FLAGSTAFF

WE MAKE THE CITY BETTER

Meade Lane Drainage Improvement

Summary

- Identified as an issue in the 2019 Coconino Estates CIP
- Confirmed as a flood issue in 2022, Pipeline Fire modeling
- Drainage consists of two 12” pipes, insufficient for regular flows.
- Proposed solution, a 42 to 48” transitioning pipe with new catch basins.
- Approximate cost: $863k for drainage improvements, $1.2M for drainage and utility reconstruction

Hydrology

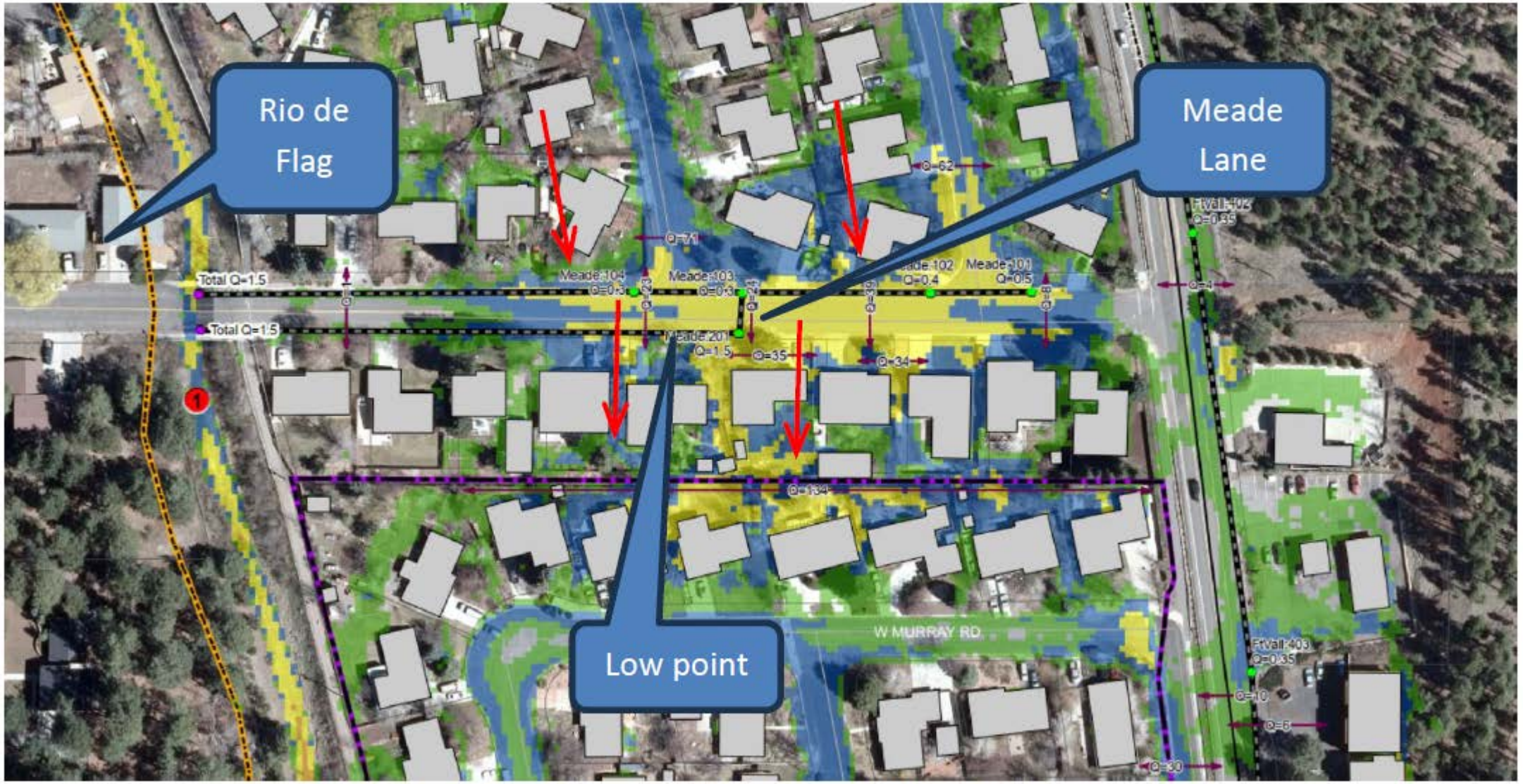
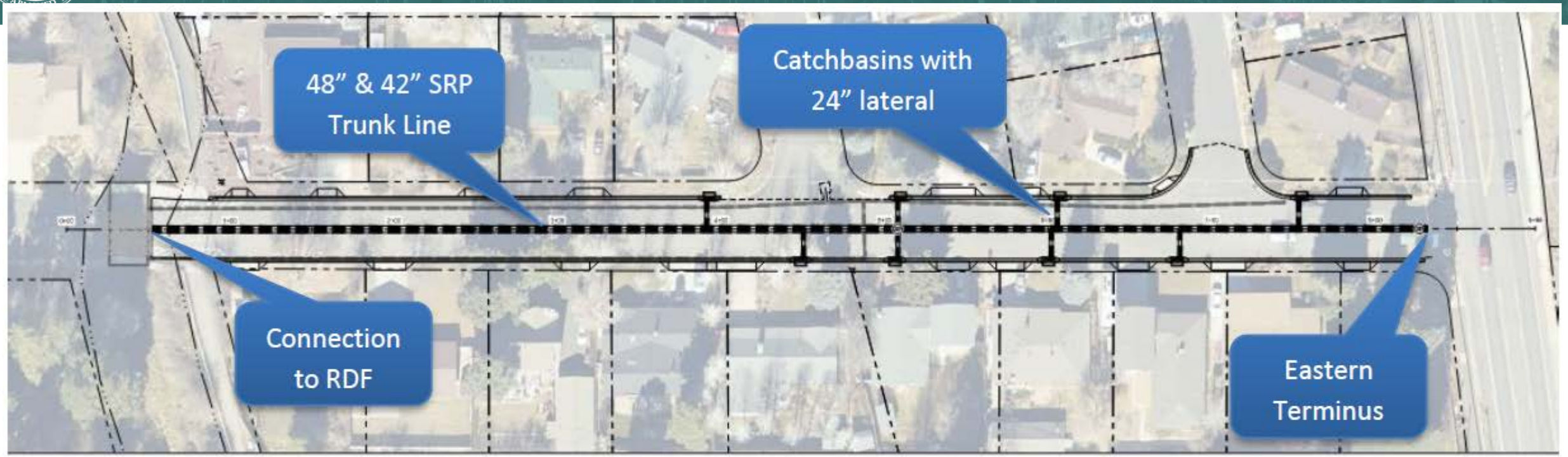


Figure 2 - Meade Lane discharge with flow direction

Meade Lane Plan and Profile



STORMDRAIN PROFILE VIEW

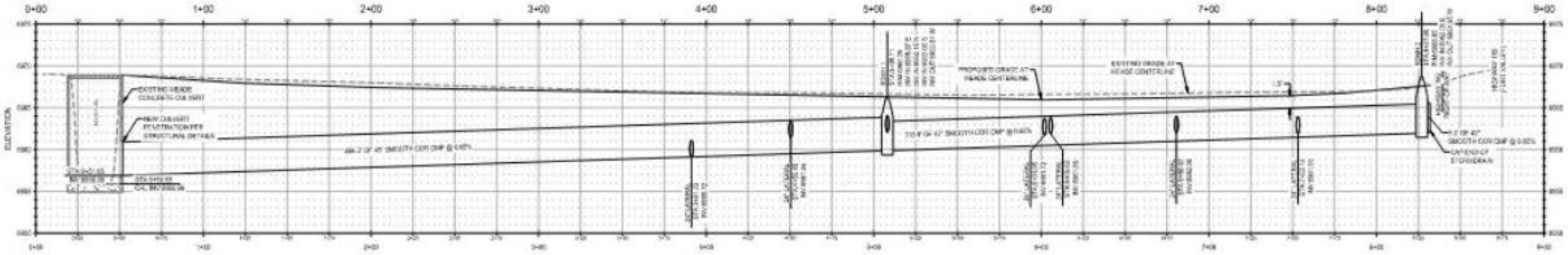
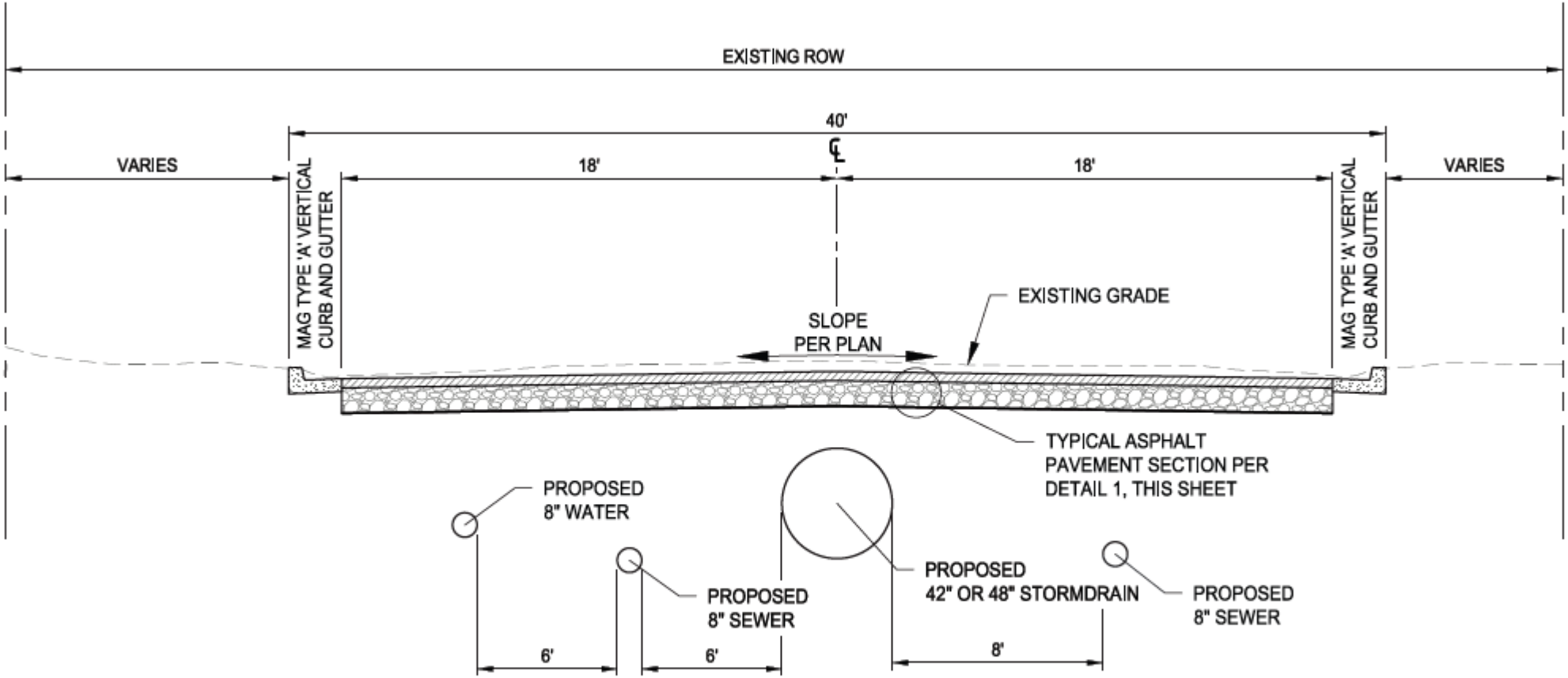


Figure 5 - Proposed Design

Meade Roadway Section



2 MEADE LN ROADWAY SECTION

NTS

CITY OF FLAGSTAFF

STAFF SUMMARY REPORT

To: The Honorable Mayor and Council

From: Nicole Antonopoulos, Sustainability Director

Co-Submitter: Dan Folke, Community Development Director and Paul Mood, City Engineer

Date: 08/22/2024

Meeting Date: 09/10/2024

TITLE:

Moving the Needle on the Active Transportation Master Plan, the Carbon Neutrality Plan, and the 10 Year Housing Plan

DESIRED OUTCOME:

This is an informational update for the City Council and Flagstaff community.

Executive Summary:

Over the past three years, the Flagstaff City Council declared two influential emergencies: the Climate Emergency (June 26, 2020) and the Housing Emergency (December 1, 2020). These emergencies facilitated the adoption of aggressive plans to accelerate action. The resulting Carbon Neutrality Plan and 10-Year Housing Plan are extensive and far-reaching frameworks for achieving the goals outlined in the respective plans. Additionally, the City Council adopted the Active Transportation Master Plan (November 2, 2022) which establishes a series of goals, policies, and strategies to support walking and biking in the Flagstaff community.

This informational update is intended to provide the City Council and Flagstaff community with a snapshot of the work that is needed over the next twelve months to support City commitments.

Information:

The Active Transportation Master Plan, the Carbon Neutrality Plan, and the 10-Year Housing Plan are extensive and far-reaching frameworks for action. Significant work by the Flagstaff community and City staff has been put in motion to implement these plans. Staff is working to create a strong and sustainable foundation for action that better aligns City goals with City procedures, code, and internal collaborations while honoring the needs and voices of the Flagstaff community.

This update is intended outline steps that City staff will take over the next twelve months. This foundational work is critical to the success of these plans.

Attachments:

Active Transportation Master Plan
Carbon Neutrality Plan
The 10-Year Housing Plan
Engineering Standards Update
Moving The Needle

City of Flagstaff



Active Transportation Master Plan

November 2022
Amended July 2023

City of Flagstaff
211 West Aspen Avenue
Flagstaff, Arizona 86001

www.flagstaff.az.gov/atmp

Adopted by the Flagstaff City Council
November 1, 2022
Resolution No. 2022-50

Amended July 3, 2023
Resolution 2023-41

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0 The ATMP at a glance

Plan summary

The Active Transportation Master Plan (ATMP) is a guide to enhancing walking and biking in Flagstaff. The ATMP includes detailed information regarding pedestrian and bicycle accommodation, and establishes a series of goals, policies, and strategies to support walking and biking.

1 Introduction

The first chapter is intended to establish a foundation for the ATMP, including the intent of the plan, its policy context, how it was developed, and how it will be used. The introduction closes with a list of guiding principles for walking and biking and a recommended shift in our approach to transportation planning.



2 Current conditions

Current conditions provides an accounting of the current status of walking and biking in Flagstaff based on existing facilities, pedestrian and bicycle mode share, crash data, and national indicators. This chapter also describes the challenges and highlights the unique opportunity for walking and biking in Flagstaff.

3 Goals and policies

Specific goals for walking and biking are established in this chapter to provide policy support and help guide the City's actions. The second part of this chapter lists a series of 32 policies, organized around six topics: infrastructure, maintenance and operations, support and encouragement, safety, transportation and land use planning, and evaluation.

4 Outcomes, indicators, and targets

Outcomes are the desired results that follow from implementation of the ATMP, while indicators are measures that show the extent to which outcomes are being achieved. This chapter also sets

short- and long-term targets to attain for mode share, pedestrian and bicycle crashes, and national recognition.



5 Implementation

This chapter describes a broad range of opportunities for implementation of the recommendations and projects in the ATMP. This section also lists four priority actions to undertake in the first year, and another nine actions for the first five years.

6 Planning considerations

Planning considerations cover a general discussion of how planning for pedestrian and bicycle accommodation fits into the larger contexts of transportation and land use planning.

7 Design guidance

Chapter 7 examines the impact of street and intersection design on walking and biking, and provides general information on design features for pedestrian and bicycle accommodation.

8 Infrastructure recommendations

The final chapter provides recommendations and a plan for walking and biking infrastructure, including sidewalks, at-grade crossings, grade-separated crossings, bikeways, and FUTS trails. This chapter also describes the prioritization methodology for new pedestrian and bicycle projects.

Appendix A Policies and strategies

Includes a detailed list of strategies and actions to promote walking and biking for each of the 32 policies set forth in Chapter 3.

Appendix B Common acronyms

A list of acronyms used in this document and in transportation planning in general.

1 Introduction

The City of Flagstaff's Active Transportation Master Plan (ATMP) is intended to serve as a detailed guide to enhance walking and biking in Flagstaff.

Walking and biking are important to Flagstaff, and the Flagstaff community is very supportive of walking, biking, transit, and active modes of transportation in general. Walking and biking are critical elements of mobility and a robust transportation system, and vital to achieving social, economic, health, environmental, and sustainability goals for the community.



Over the years, a variety of City of Flagstaff plans and policy documents have highlighted the importance of walking and biking, starting with the Flagstaff Regional Plan 2030. However, none have provided specific details or direction on how to become a more pedestrian- and bicycle-friendly community. This document provides those details and that direction.

Intent of this plan

The ATMP is intended to serve several primary functions:

- **The Big Shift**. The ATMP promotes a fundamental change in our approach to mobility and transportation planning – introduced in the Flagstaff Carbon Neutrality Plan as the Big Shift – away from a model that prioritizes automobiles and vehicular travel and towards a broader process that promotes walking, biking, and transit and supports other community goals and values. This Big Shift approach is further detailed under Approach at the end of this introduction.

- **Policy support**. Goals and policies listed in Chapter 3 of this document establish specific policy support for active transportation to build on the goals and policies already in the Regional Plan.

- **Goals, policies, and strategies**. The document includes a list of recommended strategies which

identify a range of actions the City can take to support and promote walking and biking.

- **Pedestrian and bicycle infrastructure**. Missing and needed pedestrian and bicycle facilities, including sidewalks, bikeways, FUTS trails, and crossings, have been inventoried and prioritized as part of this document. This helps to establish a program of pedestrian and bicycle infrastructure projects to include in the City's capital planning process.

- **Planning and design guidance**. The ATMP includes detailed design and planning guidance to enhance the functionality of our transportation system and support active transportation.

Policy context

The City already has several adopted plans and policy documents that address transportation in general, as well as walking and biking more specifically. These documents provide the policy context for the ATMP.

Flagstaff Regional Plan 2030

The Flagstaff Regional Plan 2030, which was adopted by the City Council and ratified by Flagstaff voters in 2014, is a high-level policy document that covers a variety of topics regarding the future development of Flagstaff. The Transportation Element (Chapter X) of the Regional Plan describes an overall vision for transportation in Flagstaff, as well as goals and policies needed to achieve that vision. These goals and policies are the starting point for the ATMP.

Regional Plan 2030 vision for transportation

In 2030, people get around to where they need to be in an efficient and safe manner, and more people ride the bus, their bikes, and walk, reducing emissions and increasing health.

In 2022, the City and County initiated the process to update the current Regional Plan. The revised plan – Flagstaff Regional Plan 2045 – is anticipated to be completed in 2025.

Flagstaff Carbon Neutrality Plan

In June 2020, the Flagstaff City Council adopted Resolution 2020-09, which declared a climate emergency in Flagstaff and calls for a dramatic shift in our ambition and action to combat climate change. The Council subsequently adopted the Carbon Neutrality Plan in June 2021 and established a goal for carbon neutrality – a 100 percent reduction in emissions – by the year 2030.

In Flagstaff, the transportation sector is responsible for 30 percent of greenhouse gas emissions, primarily from passenger vehicle emissions. As a result, achieving the carbon neutrality target established in the Carbon Neutrality Plan will require extensive changes in our transportation policies and practices. Decreasing dependence on automobile use is one of the core target areas of the Carbon Neutrality Plan: the plan calls for

Flagstaff Carbon Neutrality Plan target area

Decreased Dependence on Cars
Flagstaff will transform our transportation and land use systems so that we depend far less on cars, reducing vehicle miles traveled (VMT) and shifting trips to walking, biking, and the bus.

aggressive action to shift away from car-dependent planning and transportation design and to focus more resources on supporting walking, biking, and transit.

How this plan is used

This section describes how the ATMP should be used in conjunction with other plans, projects, and processes.

- **Plans and policy documents**. As a City policy document, the ATMP and its contents should be considered in planning processes and reflected as appropriate in other City plans, including the Regional Plan and specific, neighborhood, and master plans. The ATMP can also be considered as part of transportation plans prepared by MetroPlan, Coconino County, the Arizona Department of Transportation (ADOT), and Northern Arizona University (NAU).

- **Capital planning and programming**. The ATMP inventories and sets priorities for an extensive list of specific pedestrian and bicycle projects, which will be included in the City's five-year capital planning program.



- **Budgeting and work programs**. Recommended policies and strategies in the ATMP can be part of the City's performance-based budgeting process and incorporated into budget requests, strategic plans, and work programs.

- **Regulatory documents**. The ATMP itself does not create any new enforceable standards or regulations; however, it can be used to identify revisions to the Zoning Code, Engineering Standards, and other applicable regulatory documents to implement the ATMP.

- **Private development review**. The ATMP does not create any new standards or requirements for private development. Developers are encouraged to consider the ATMP when planning their development but are not required to demonstrate conformance. Design guidelines can be a reference for pedestrian and bicycle accommodation but are not compulsory.

- **City capital projects**. Planning considerations and design guidelines in this document can

serve as a guide for best practices when pedestrian and bicycle facilities are included as part of other City capital projects, such as roadway projects.

How this plan was developed

Content and recommendations in the ATMP were formulated based on a variety of sources, including extensive public engagement, dating back to 2014.

- **Background information**. A variety of data was collected to provide supporting information on a variety of topics:
  - Existing plans and policies regarding walking and biking
  - Mode share information and trends
  - Pedestrian and bicycle crash data
  - General active transportation resources

- **Community surveys**. Since 2016, a total of 15 community surveys related to walking and biking have been conducted. Some were done specifically for the ATMP, while others were done for other projects but include relevant information.

  Direct surveys
  - ATMP Community Survey (2022)
  - PedBikeWays Survey (2018)
  - Goals and Strategies Survey (2017)
  - Milton Road Walking and Biking Survey (2016)
  - Pedestrian and Bicycle Project Survey (2016)
  - Walking and Biking Survey (2016)

  Related surveys
  - Butler-Beaver Separated Bike Lane Pilot Community Survey (2022)
  - MetroPlan Stride Forward Online Survey #2 (2022)
  - MetroPlan Stride Forward Online Survey #1 (2022)
  - MetroPlan Transportation Values Random Sample Survey (2022)
  - City of Flagstaff Resident Survey (2021)
  - Bicycle Friendly Community Survey (2019)
  - Flagstaff Trails Initiative - Trails Survey (2018)
  - RTP Surveys - Walking and Biking Results (2018)
  - FUTS Trail Users Survey (2017)

- **Public engagement**. City staff have conversed with hundreds of residents about pedestrian and bicycle issues at numerous community events, including Earth Day, Bike-to-Work Week, Arizona Trail Day, and the Flagstaff Community Market. Two walking and biking summits were hosted in late 2017, during which approximately 100 attendees were given an opportunity to provide feedback and complete a survey.

- **PAC and BAC meetings**. Since 2014, discussion of the ATMP has been a standing item on the monthly agendas of the City's Pedestrian Advisory Committee (PAC) and Bicycle Advisory Committee (BAC).

- **National guidance and peer community review**. The ATMP also incorporates relevant state of the practice information from other communities and national sources.

Guiding principles

These guiding principles provide a foundation for the ATMP, describe why walking and biking are important and beneficial, and express the community's expectations for walking, biking, mobility, and transportation.

- **Walking and biking are important to Flagstaff and reflect the values of the community**. Walking and biking are a significant part of Flagstaff's community character, and can be used as indicators of livability. Walking and biking are also linked to numerous health benefits and help contribute to well-being.

- **Flagstaff has a significant opportunity to expand walking and biking, but it takes a concerted effort by the City**. Walking and biking as transportation options need to be actively supported, encouraged, and prioritized in order to thrive. The community responds positively when the City works to accommodate and encourage walking and biking.

- **More people will choose to walk and bike when it is comfortable, convenient, and useful**. Evidence from other communities shows that when active transportation is prioritized, people walk and bike more. Conversely, people are discouraged from walking and biking when they feel uncomfortable or unsafe, and when facilities are inadequate.



- **Walking and biking are critical elements of a robust transportation system**. Our transportation system is most efficient and equitable when it provides a range of transportation options, including walking, biking, and transit. Shifting trips from single-occupant vehicles to walking, biking, and transit is essential to

managing congestion and enhancing mobility.

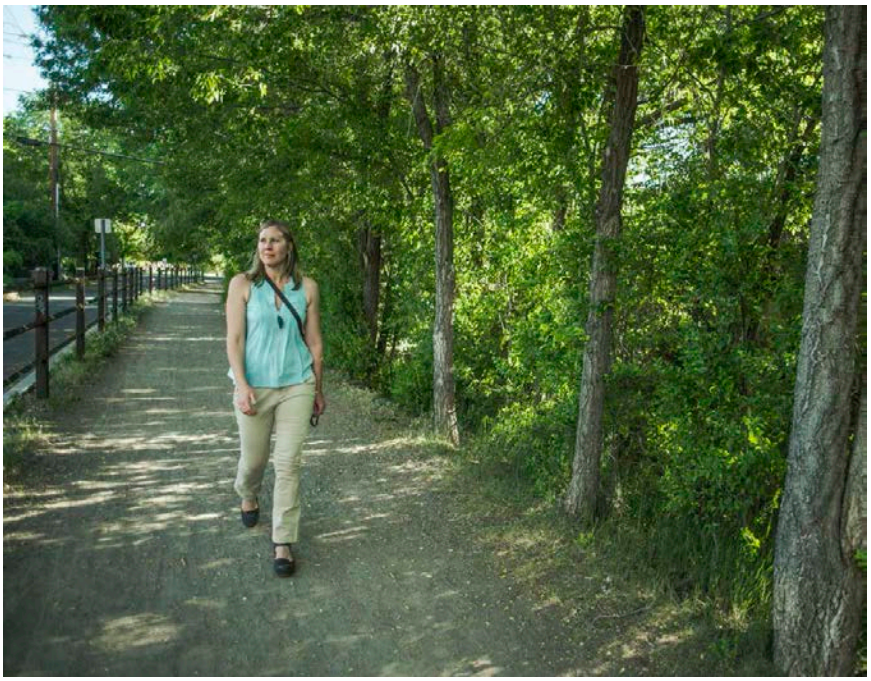
- **Walking and biking are integral parts of a larger context of land use, community character, and street design**. The design and character of our streets should reflect our community goals and values for community character, climate change, equity, and safety. Density, compact form, diversity of uses, and urban design are essential for walking and biking.

- **Mobility – the ability to travel freely to access our daily needs and activities – is a fundamental human need**. Community mobility is measured by how well those with mobility challenges can access their daily needs, live independently, and move freely. More viable transportation options mean better mobility for the entire community.

- **Better transportation options and enhanced mobility support equity**. Transportation options improve mobility for all segments of the population, including the elderly, individuals with mobility challenges, low-income populations, and marginalized communities. Not everyone drives, and not everyone in Flagstaff can afford to drive. For some in our community, independent mobility is often dependent on walking, biking, or taking the bus.

- **Sustainable transportation options are critical to meeting the City's carbon neutrality goals**. In Flagstaff, transportation accounts for about 30 percent of greenhouse gas emissions. Carbon neutrality goals will not be met without a reduction of emissions in this sector.

- **Active transportation supports a healthy and resilient economy**. Communities with strong walking, biking, and trails infrastructure gain a competitive edge in attracting and keeping businesses and jobs. For many private companies, locational decisions are driven as much by quality-of-life factors as economic considerations.



Approach

The following points summarize the Big Shift in our approach to transportation planning to support walking and biking, enhance mobility for everyone, meet our climate goals, and create a more balanced transportation system.

- **Be more transformational than incremental**. Flagstaff could be a great city for walking and biking, but bold action is needed to make it happen. What's needed is a fundamental shift in our approach to walking and biking accommodation, as well as with transportation planning in general.



- **Prioritize pedestrians and bicyclists**. Those who walk and bike are deserving of extra consideration, including additional protection as vulnerable roadway users. Planning for pedestrian and bicycle facilities should seek to provide a high level of accommodation rather than a minimum.

- **Take a well-rounded approach to transportation**. Transportation planning needs to consider multiple community objectives – community character, sustainability, public health, economic vitality, environmental stewardship, and equity – in addition to the conveyance of motor vehicles.

- **Pursue a wide range of solutions for mobility**. Efficient management of transportation resources requires a broad range of strategies to enhance mobility rather than an approach that relies primarily on increasing vehicle capacity.

- **Use Travel Demand Management (TDM) as a guiding principle**. TDM expands mobility options and helps to manage congestion by simultaneously reducing the demand for vehicle use and increasing capacity for active and other sustainable modes.

- **Don't overbuild for cars**. Wide, fast roads and large parking lots can discourage walking and biking, encourage automobile use, create unsafe streets for all modes, and make it difficult to promote desirable community character. Reliance on traffic models, level of service measures, and vehicle capacity can lead to overbuilding.

2 Current conditions

This section provides an overview of current conditions for walking and biking in Flagstaff, based on several measures and considerations. Taken together, these measures reveal a community that is generally supportive of walking and biking, but there is significant room for improvement. While there are many positives, there is also a long list of challenges. Overall, there is tremendous opportunity in Flagstaff to be a premier community for walking and biking.

Introduction

Walking

Walking is the most enduring and universal mode of transport. In Flagstaff, walking is the most robust of the active modes; the percentage of trips in Flagstaff made by walking is significantly higher than for bicycling or transit. Additionally, the percentage of Flagstaff residents who walk to work far exceeds state and national averages and places us in the upper echelon of our peer communities.

Walkability is highly dependent on land use and urban form in addition to complete and comfortable facilities. Because trips are short, walking requires proximity and is supported by density, mixed-use, and compact form. Walkability is also responsive to good urban design; attractive and engaging places are appealing to pedestrians.



Bicycling

Bicycling as a travel mode presents one of Flagstaff's best opportunities for reducing vehicle trips and increasing the share of trips made by active modes.

Bicycles make it possible to travel longer distances, and to carry cargo as well. Flagstaff's compact size means that most of Flagstaff is contained within a bikeable area, so in theory, most in-town trips could potentially be converted to bicycle trips. In Flagstaff, the average trip is a little over four miles in length, and almost 60 percent of all trips are less than five miles in length. This distance is eminently bikeable, provided it can be made

comfortable and appealing for the average person.

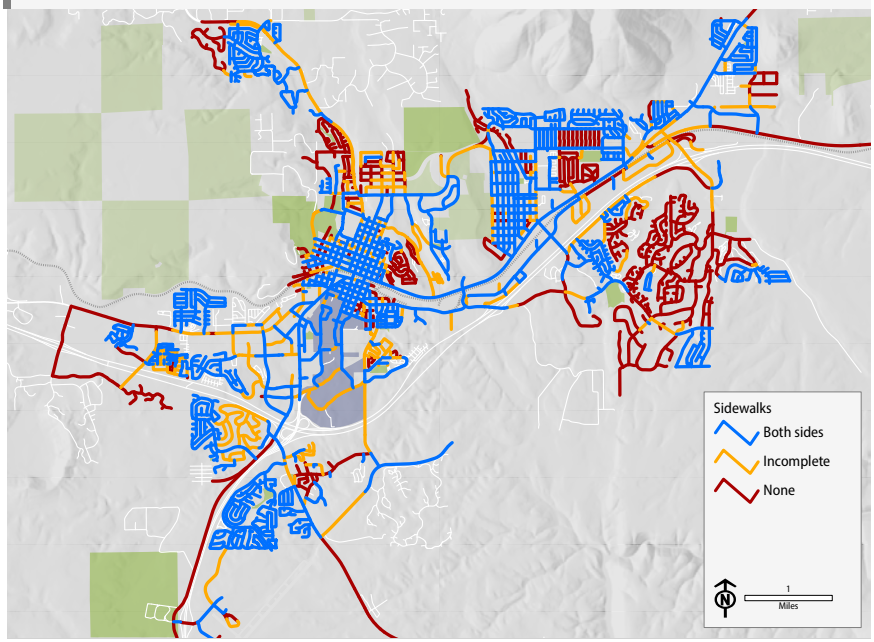
Biking is also a big part of Flagstaff's culture and identity. Flagstaff is becoming a world-class destination for mountain biking, with more than 300 miles of recreational singletrack trails in proximity. Flagstaff also hosts numerous bicycle-themed events throughout the year.

Status of walking and biking

Infrastructure

The term infrastructure refers simply to the physical facilities for walking and biking. In general, Flagstaff has good pedestrian and bicycle facilities, but significant gaps and inconsistencies reduce the functionality of our networks.

Sidewalk status



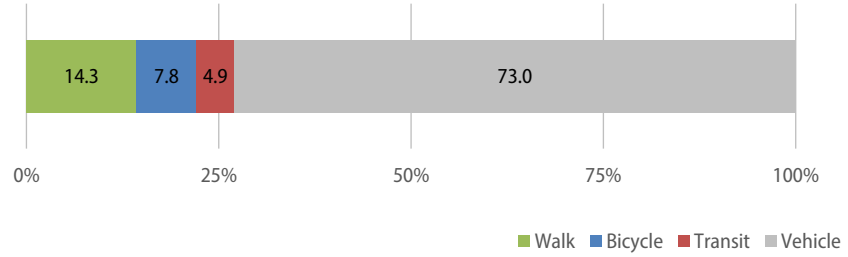
- **Sidewalks**. Sidewalks are present on 70 percent of Flagstaff's major streets. However, only 53 percent of all public streets have sidewalks along both sides of the street, and 29 percent have no sidewalk at all.
- **Bike lanes**. There are 97 miles of designated bike lanes in Flagstaff, and another 34 miles of usable shoulders. Bike lanes are present on 71 percent of major streets, but there are also 70 miles of missing bike lanes.
- **FUTS trails**. Flagstaff's 59 miles of FUTS (Flagstaff Urban Trails System) trails provide a comfortable and enjoyable network for walking and biking. About half of the trail miles are paved and half are aggregate surfaced.
- **Crossings**. While Flagstaff has installed a number of flashing beacon crossings in the past several years, there are still a number of street corridors in Flagstaff that are difficult to cross due to the speed, volume, and width of the street. Flagstaff also has several grade-separated crossings; however, the presence of two interstates and the railroad through Flagstaff create significant breaks in pedestrian and bicycle networks.

Mode share

Mode share is the percentage of trips that are taken by different modes of travel, including walking, biking, transit, and private vehicles, and a direct measure of the status of walking and biking in a community. Overall, Flagstaff's mode share numbers are relatively strong and indicative of a good climate for walking and biking; however, flat or declining trends indicate that more work is needed.

- **Mode share**. According to the 2018 Flagstaff Trip Diary Survey, 22 percent of all trips in Flagstaff are made by walking and biking, including 14.3 percent by walking and 7.8 percent by bicycle.

Current mode share

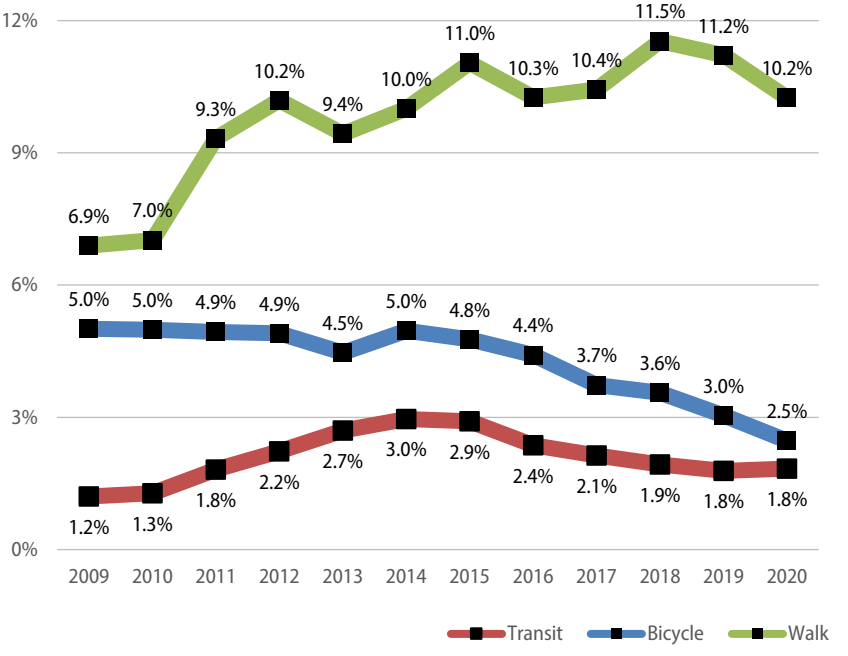


Source: 2018 Flagstaff Trip Diary Survey

- **Trends**. The percentage of trips made by walking has increased somewhat since 2006, while the percentage of bicycle trips has declined, based on composite data from the Trip Diary Survey and the American Community Survey.

- **Geography**. In the core area of Flagstaff, which includes Downtown, the Southside neighborhood, and the NAU campus, people are much more likely to walk or bike than in the rest of Flagstaff. The combined walk and bike mode share is 44 percent in the core area, but only 13 percent for the rest of Flagstaff. Between 2006 and 2018, walking and biking mode share increased by 15 percent in the core area of Flagstaff but decreased by 7 percent in the rest of Flagstaff.

Means of transportation to work trends

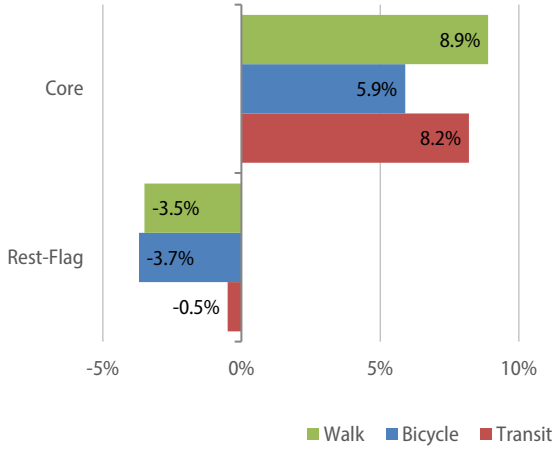


Source: American Community Survey 5-Year Estimates

- **Peer cities**. In comparison to our peer communities – cities in the west with a similar population to Flagstaff and a large public university – Flagstaff is among the leaders in walk share to work (third of 20 cities), but lags behind our

peer communities in bicycle mode share (12th of 20 cities).

Mode share change by geography, 2006-2018



Source: 2018 Flagstaff Trip Diary Survey

Safety

Pedestrian and bicycle crash data is an important indicator of safety for active transportation.

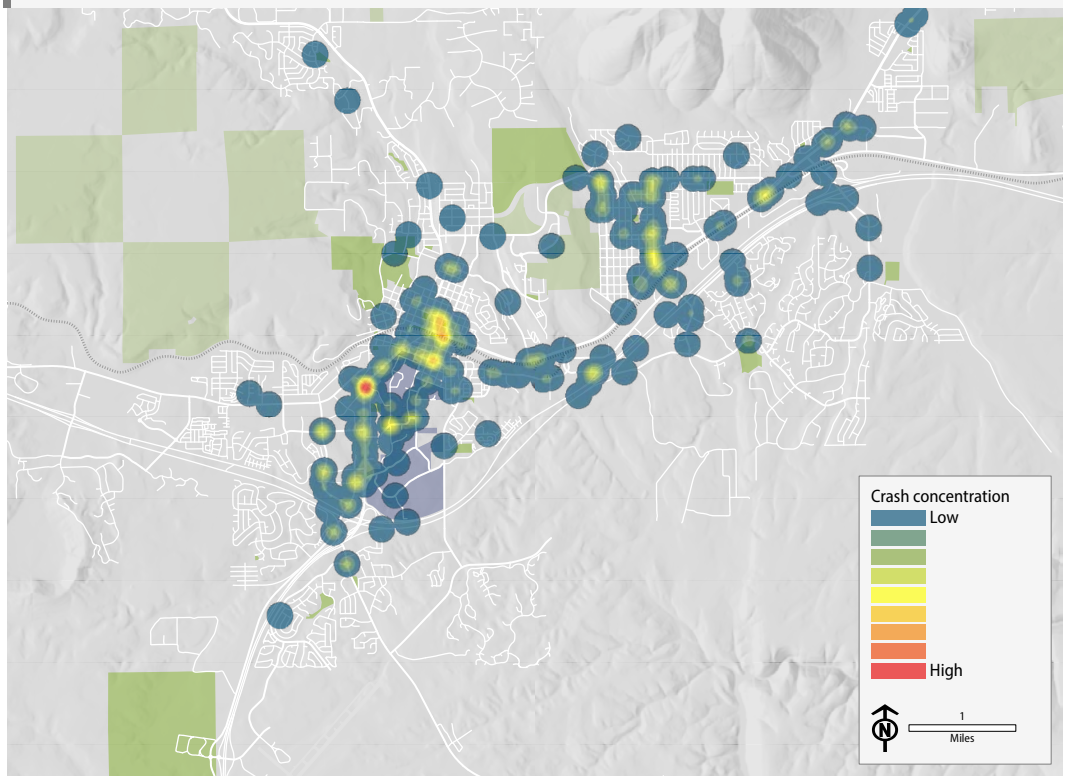
- **Crashes and trends**. Flagstaff has an average of 29 crashes involving pedestrians each year, and an average of 52 crashes involving bicyclists. Annual numbers for both pedestrian and bicycle crashes in Flagstaff have generally trended downward since 2001.
- **Pedestrian injuries and fatalities**. More than a quarter of all pedestrian crashes in Flagstaff result in serious injury or death to the pedestrian, and pedestrian fatalities represent almost half of all traffic fatalities in Flagstaff.
- **Bicyclist injuries and fatalities**. Flagstaff did not see a fatal bicycle crash between 2012 and 2018, but there was one bicycle fatality in 2018 and two in the first half of 2021. On average, fewer than six crashes per year result in serious injury to the bicyclist.

National measures

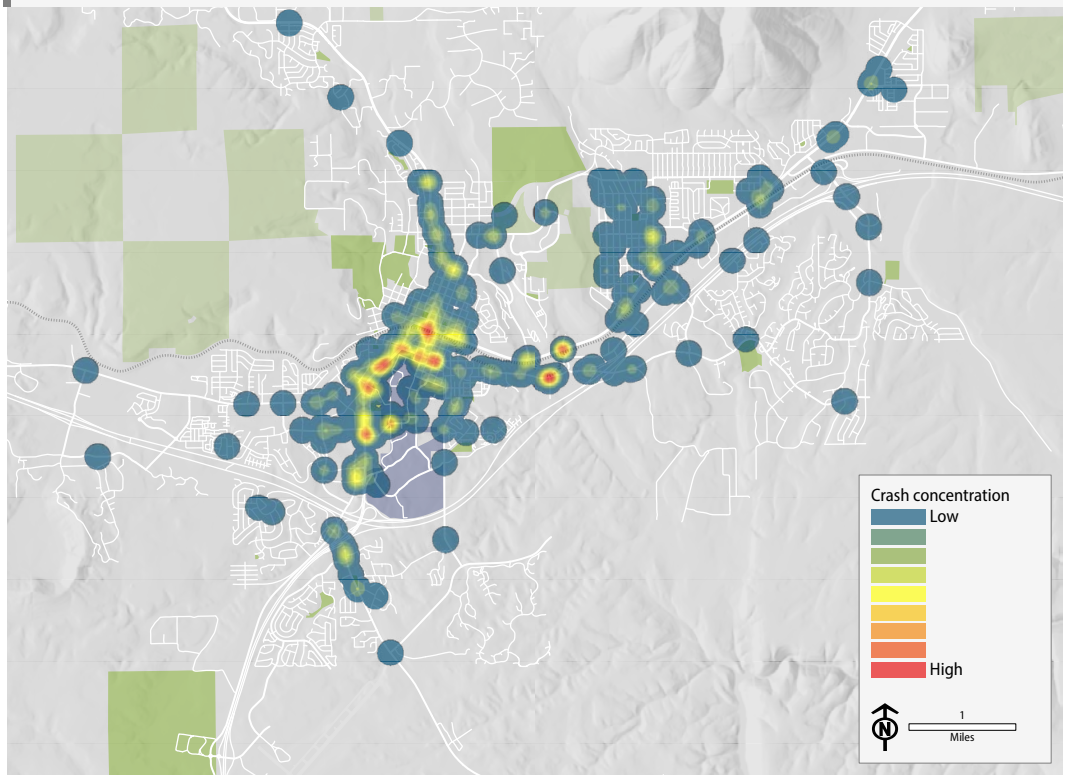
National measures and recognition programs can be somewhat general and oversimplify conditions, but they afford an opportunity for comparison to other communities. They also offer an outside, third-party perspective of Flagstaff's walking and biking environment.

- **Walk Score**. Flagstaff's Walk Score of 39 places it in the "Car Dependent" category and is an indication that most errands require a car. Our Walk Score places us at the lower end of our peer communities; 14th out of our 20 peer cities, and below the average score of 43.
- **Bike Score**. Flagstaff's Bike Score of 65 places it in the "Bikeable" category and indicates that some bicycle infrastructure is present. Our Bike Score places us 8th out of 20 peer cities, and just above the average score of 61.
- **Walk Friendly Communities**. Flagstaff was designated as a Walk Friendly Community at the bronze level in 2011, one of 76 cities across the country and the only one in Arizona.
- **Bicycle Friendly Communities**. Flagstaff was designated a Bicycle Friendly Community in 2006 at the bronze level and promoted to silver in 2010. There are 13 bicycle friendly communities in Arizona and almost 500 nationwide.

Pedestrian crash concentration



Bicycle crash concentration



Challenges for walking and biking

Flagstaff has a number of circumstances and conditions that make it difficult to walk and bike:

- **Streets that are difficult or uncomfortable for walking and biking**. On many arterial and collector streets, the speed, volume, and lanes of traffic, in combination with inadequate facilities for walking and biking, discourage pedestrian and bicycle use.



- **Barriers dividing the community**. Linear features, including the BNSF tracks, both interstates, and busy streets like Milton Road and Route 66, create barriers that make pedestrian and bicycle travel more challenging. There are few dedicated crossings for pedestrians and bicyclists along the railroad tracks and interstates, and few formal crossings on many streets.

- **Challenging and difficult intersections**. A number of intersections are characterized by multiple turn lanes, long crossing distances, high-speed turning movements, and less than adequate accommodation for walking and biking.

- **Isolated neighborhoods**. Flagstaff's geography has created numerous locations with limited access, and often less-than-ideal facilities for walking and biking along main corridors serving neighborhoods.

- **Gaps and inconsistencies in the bicycle network**. Although bike lanes are included along many arterial and collector streets, there are still significant missing segments, and bike lanes disappear at many intersections. While many communities have embraced separated bike lanes to appeal to a wider audience, Flagstaff is just beginning to explore and implement.

- **Maintenance challenges**. Maintenance of pedestrian and bicycle facilities remains a concern, especially in winter months. Bike lanes are not always cleared of snow, and the use of cinders in winter months creates challenges on both sidewalks and bike lanes. Frequent freeze-thaw cycles are especially destructive to sidewalks, bike lanes, and FUTS trails.

- **Pedestrian and bicycle accommodation during closures**. Pedestrian and bicycle

accommodation is not always adequately addressed during closures of sidewalks, bike lanes, and FUTS trails due to construction, repairs, or utility work, and facilities appear to be closed unnecessarily at times. Public notification is inconsistent.

- **Few initiatives for education, enforcement, and encouragement**. Communities with robust pedestrian and bicycle environments typically support walking and biking with a variety of programs that go beyond infrastructure and facilities. In comparison to its peers, Flagstaff has few formal programs for education, enforcement, or encouragement.

The opportunity in Flagstaff

While there are significant challenges, Flagstaff is also uniquely positioned to become a great community for walking and biking, for several reasons:

- **Healthy mode share**. Flagstaff already has a lot of people who are biking and walking: 22 percent of trips in Flagstaff are made by walking or biking.

- **Good basic facilities**. Sidewalks and bike lanes on major streets are substantially complete, which means the City only needs to focus on a few priority locations.

- **Compact and dense urban form**. Flagstaff is a compact city and becoming denser. The Downtown, Southside, and NAU campus form a dense core where there is already substantial walking and biking. The remainder of Flagstaff is compact enough to allow travel on foot or by bicycle.



- **Short trip length**. Many trips made in Flagstaff are short and can potentially be converted from driving to walking or biking. For private vehicle trips, a total of 37 percent are less than 2.5 miles in length, and 11 percent are less than a mile. By comparison, 80 percent of bicycle trips are less than 2.5 miles, and 53 percent of walking trips are less than a mile.

- **Large university**. Northern Arizona University has almost 30,000 students on campus who are good candidates to use walking and biking for daily travel. The NAU campus is located in the central core of Flagstaff and is becoming denser as the university grows.

- **20 years of funding**. Flagstaff has 20 years of funding for pedestrian and bicycle projects via the 2020 transportation sales tax. This tax, which was approved by Flagstaff voters in 2018, is a committed funding source for implementation of the infrastructure recommendations in this plan. Tax funding can also be used to leverage grant opportunities, partnerships, and other sources to build more pedestrian and bicycle infrastructure.

- **Robust transit system**. In 2019, more than 2.5 million trips were taken on Mountain Line transit, representing an increase of 250 percent since 2006. Walking and biking support transit since many transit trips start with one of these modes, and transit supports walking and biking by providing a backup option and allowing longer trips.

- **Active and engaged population**. Flagstaff is an active, civically engaged community that supports walking and biking, values outdoor activity and access to open space, and supports sustainability and the environment.

- **Community support**. Surveys of Flagstaff residents consistently show broad support for walking, biking, and trails, a willingness to tax themselves to fund sustainable transportation, and a strong interest in making Flagstaff more walkable and bikeable.

- **Flagstaff Urban Trails System**. The FUTS is one of our most important and well-used facilities for walking and biking. FUTS includes 59 miles of shared use pathways that connect throughout the community, provides a safe and comfortable place for users away from traffic, and encourages both transportation and recreational use.

- **Climate action and sustainability goals**. In June 2021, the City approved the Carbon Neutrality Plan, which sets a target for 54 percent of all trips to be made by walking, biking, or transit. Because transportation is a significant contributor to greenhouse gas emissions, promoting sustainable transportation options is critical for meeting the City's climate targets.



- **Favorable weather**. Although Flagstaff sometimes sees heavy snowfalls, most winter days are still clear and sunny, and snow tends to melt quickly. As a result, walking and biking are still

viable transportation options through the winter. Spring, summer, and fall are often ideal for walking, biking, using trails, and being outdoors.



3 Goals and policies

Goals are desired results which the community envisions and commits to achieve. Goals are written to be high level and aspirational. Policies are a deliberate course of action to guide decisions and achieve our stated goals, while strategies are specific actions or steps to implement the goals and policies. Policies and strategies in this document are intended to provide specific direction for active transportation.

This chapter recommends 13 goals and 32 policies. The policies are organized around six subjects: infrastructure, maintenance and operations, support and encouragement, safety, transportation and land use planning, and evaluation. A lengthy list of strategies for each of the policies is provided at the end of this document as Appendix A, beginning on page 95.

Goals

As set forth in this plan, it is the goal of the City of Flagstaff to:

- Create an inclusive multimodal transportation system that provides access, mobility, and efficient transportation options for people of all ages and ability.
- Recognize that people who travel on foot, by bicycle, or by transit are legitimate users of the transportation system and deserving of the same considerations as motorized users.
- Ensure that safety and accommodation for vulnerable road users, including pedestrians and bicyclists, is a primary consideration in planning for our streets and transportation systems.
- Provide an excellent level of accommodation for pedestrians and bicyclists in transportation planning, design, operations, and maintenance.
- Promote equity by actively working to ensure that all segments of the population have equal access to safe and functional transportation and equal opportunity for mobility, regardless of age, ability, gender, race, income status, location, or situation.





- Maintain Flagstaff's streets, sidewalks, bikeways, crossings, and FUTS trails in good condition and free of snow, debris, and blockages to ensure safety and functionality for all users, regardless of transportation mode.
- Provide a range of functional and attractive transportation options so that all residents and visitors have choices in how they move around the city.
- Integrate transportation and land use planning such that development decisions support transportation goals, and transportation planning advances the community's vision for the built environment.
- Build networks for walking and biking that are continuous, attractive, safe, comprehensive, and convenient.
- Provide crossings where they are needed and useful, and avoid building streets that function as barriers, in recognition of the essential need for pedestrians and bicyclists to cross streets.
- Design and build transportation infrastructure that is appropriate for the context of the corridor, neighborhood, or district where it is located.
- Reduce the demand for single-occupancy vehicle use and increase options for walking, biking, and transit as a fundamental approach to transportation planning.
- Make transportation decisions that support a variety of community values, including community character, sustainability, public health, economic vitality, environmental stewardship, equity, and safety.

Policies

1	Infrastructure
1.1	Implement networks for walking and biking that are continuous, attractive, safe, comprehensive, and convenient.

1.2	Provide frequent and comfortable crossings to eliminate barriers and avoid breaks in pedestrian and bicycle networks.
1.3	Ensure the availability of functional bike parking.
1.4	Incorporate wayfinding signage to enhance the functionality of walking and biking networks.
1.5	Work with the City's transportation partners to unify walking and biking networks.
1.6	Connect walking and biking facilities with regional trails and open space to ensure convenient access from all Flagstaff neighborhoods.
1.7	Identify and take advantage of opportunities to fund and implement the pedestrian and bicycle network.

2	**Maintenance and operations**
2.1	Maintain walking and biking infrastructure in a state of good repair.
2.2	Clear ice and snow from pedestrian and bicycle facilities to keep them usable through the winter months.
2.3	Keep walking and biking facilities free of blockages and debris.
2.4	Limit the impact of closures on walking and biking facilities.
2.5	Improve and enhance existing pedestrian and bicycle facilities to meet basic levels of functionality and accessibility.

3	**Support and encouragement**
3.1	Use information and maps to promote, encourage, and make it easier to walk and bike.
3.2	Promote events and activities that support walking and biking.
3.3	Work towards equity and inclusion in pedestrian and bicycle programs.
3.4	Incorporate universal access as a key component of walking and biking.
3.5	Pursue other programs and facilities that are supportive of walking and biking.
3.6	Develop beneficial relationships with our community partners to promote walking and biking.
3.7	Explore ways to grow City staff resources for active transportation.

4	**Safety**
4.1	Establish comprehensive education and safety programs for pedestrians, bicyclists, and motorists.
4.2	Adopt a comprehensive transportation safety action plan and strategy with the explicit intent and goal to eliminate traffic fatalities and serious injuries.
4.3	Re-establish a community-wide Safe Routes to School (SRTS) program.

4.4	Work with the Flagstaff Police Department to advance enforcement efforts that improve safety for pedestrians and bicyclists.
4.5	Verify that walking and biking facilities allow and encourage safe behavior for all users.

5	Transportation and land use planning
5.1	Use Travel Demand Management (TDM) as a guiding principle for transportation and land use planning.
5.2	Establish a "complete transportation" process for all City transportation plans and projects that incorporates broad community objectives.
5.3	Review current transportation-related standards, guidelines, and processes to identify opportunities to implement this plan and better support walking and biking.
5.4	Adopt design guidelines that reflect best practices for streets, intersections, pedestrian and bicycle facilities, and trails.
5.5	Incorporate principles of placemaking in street design and pedestrian and bicycle infrastructure.

6	Evaluation
6.1	Collect and analyze data related to walking and biking.
6.2	Provide opportunities for community engagement and feedback.
6.3	Conduct regular assessments of walking and biking conditions.



4 Outcomes, indicators, and targets

This section describes the desired results of this plan, as well as measures to determine if those results are being achieved.

- **Outcomes**. The anticipated results or consequences that follow from implementation of this plan. They describe desired conditions, how walking and biking should function, and where Flagstaff wants to go. If goals, policies, and strategies are the journey, then outcomes are the destination.
- **Indicators**. Points of data that demonstrate the extent to which Flagstaff is achieving the desired outcomes of this plan. They are specific and measurable and a direct indication of whether progress is being made.
- **Targets**. A subset of indicators that include a specific milestone to attain within a specific timeframe. Targets are set for a few but not all indicators.



Outcomes and indicators

Walking and biking are frequently used transportation options for everyone

- **Mode share**. The percentage of trips made on foot and by bicycle (mode share) is increasing, based on the MetroPlan Trip Diary Survey.
- **Mode share for work trips**. The percentage of work commute trips made by walking and biking is increasing, as reported by Journey to Work data from the American Community Survey.
- **Counts**. Pedestrian and bicycle counts at key locations show that more people are walking and biking.

People can travel anywhere in the community by walking or biking on safe, comfortable, and efficient networks

- **Sidewalk completion**. The percentage of major streets with sidewalks along both sides is increasing.
- **Bikeway completion**. The percentage of planned bikeways, especially primary and secondary bikeways, that have been built or implemented is increasing.
- **FUTS coverage**. The percentage of residents and neighborhoods within a quarter mile of the FUTS system is increasing.
- **Intersection accommodation**. The percentage of major intersections with good pedestrian and bicycle facilities is increasing.
- **Crossing distance**. The number of segments along major streets where the distance between major crossings exceeds desired lengths is decreasing.

Walking and biking is safe and comfortable

- **Comfort indices**. The number of street segments and intersections that are rated as "uncomfortable" or "very uncomfortable" in pedestrian, bicycle, intersection, and crossing comfort indices is decreasing.
- **Crash rates**. The number and rate of pedestrian and bicycle crashes are decreasing.
- **Community perception**. Responses to public surveys indicate a general trend that walking and biking are becoming more comfortable for more people.
- **Bikeways**. An increasing percentage of the low-stress bikeways network has been implemented.

Biking and walking are celebrated as a part of Flagstaff's identity

- **Walk- and bike-friendly communities**. Flagstaff's designation advances from Bronze and Silver.
- **Walk Score and Bike Score**. Flagstaff's community scores are increasing and are above the averages of our peer communities.
- **National ratings and rankings**. Flagstaff appears



or moves up on national ratings and rankings for pedestrian and bicycle friendliness.

- **Events**. There are a variety of walking and biking-themed events and activities in Flagstaff; the number of events is generally increasing, and they are becoming more popular.

Transportation in Flagstaff has a lower climate impact

- **Greenhouse gases**. Total greenhouse gas emissions from the transportation sector are decreasing.
- **Per-capita vehicle miles traveled**. The average number of vehicle miles traveled per person is decreasing.
- **Vehicle miles traveled**. The total number of vehicle miles traveled for the community is decreasing.

Walking and biking are enjoyed by everyone in the community

- **Mode share for specific populations**. The percentage of trips made by walking and biking is increasing across age, gender, race, and income demographics.
- **Geographic distribution**. The percentage of Flagstaff neighborhoods without pedestrian and bicycle facilities, or with significant gaps in the pedestrian and bicycle networks, is decreasing.
- **Universal access**. The number of locations along pedestrian and bicycle networks that do not meet minimum guidelines of ADA or principles of universal design is decreasing.
- **Low-income neighborhoods**. Counts of pedestrians and bicyclists at key locations in low-income neighborhoods is increasing.

Targets

A total of six targets are established for mode share, safety, and recognition. Short-term targets are established for five years (2027) and long-term targets are set at 20 years (2042).

Mode share

Mode share information is collected from MetroPlan's Trip Diary Survey for all trips, and from the American Community Survey for the work commute. Target mode share numbers reflect a 40 percent increase in

Walking and biking targets

Target	*Current 2022*	*5 years 2027*	*20 years 2042*
Mode share			
Walk-bike-transit (all trips)	27%	38%	54%
Walk-bike-transit (work trip)	17%	24%	34%
Safety			
Ped/bike fatal/serious injury	3	0	0
Total ped/bike crashes	56	45	28
Recognition			
Walk friendly	Bronze	Gold	Platinum
Bike friendly	Silver	Gold	Platinum

walk, bike, and transit trips within five years, and a 100 percent increase, or doubling of current mode share, in 20 years.

Safety

The City's target is for zero pedestrian and bicyclist deaths and serious injuries over the next 20 years, as well as a 20 percent reduction in all crashes after five years, and a 50 percent reduction in 20 years. Taken together, the safety and mode share targets mean that Flagstaff's goal is to cut pedestrian and bicycle crashes in half, even as the number of pedestrians and bicyclists grows by double.

Recognition

Recognition targets are based on the Walk and Bike Friendly Community programs. In both cases, the City aspires to Gold status within five years, and Platinum designation by 2042.



5 Implementation

This section addresses opportunities for implementation of the ATMP. Implementation must be a comprehensive, broad-based approach that considers capital and private development projects, on-going planning and programming efforts, and internal review processes and procedures. It is important to recognize that there are opportunities for implementation in every decision that is made and every action that is taken by the City, no matter how large or small. The cumulative impact of these decisions and actions either brings Flagstaff closer to the goals and policies of the ATMP or moves us further away.

Priority actions

This list represents the most important and highest impact actions that can be taken to implement the ATMP and enhance walking and biking. Priority actions are further divided into two timeframes; those in the First Year category should be started immediately, while First Five Years represents the second wave of actions.

First year

- Begin implementation of priority pedestrian and bicycle projects, with funding from the transportation sales tax (Prop 419) and First/Last Mile grant funding. (Policy 1.1)
- Explore available grant programs, especially federal grants available through the Infrastructure Investment and Jobs Act, to leverage available funding for new infrastructure and programs. (Policy 1.7)
- Establish a process for transportation plans and projects that incorporates the principles of "complete transportation" and addresses broad community objectives, and expands considerations for walking, biking, and transit in transportation impact analyses (TIA) and traffic modeling. (Policy 5.2)
- Conduct a comprehensive review of the City's regulatory documents, including the Zoning Code and Engineering Standards, to identify opportunities to implement this plan and better support walking and biking. (Policy 5.3)

First five years

- Implement strategies to enhance the availability and quality of bike parking. (Policy 1.3)
- Work with other City programs to review policies and practices for maintenance and snow removal on pedestrian and bicycle facilities. (Policies 2.1 and 2.2)
- Review the processes and guidelines for issuing permits for closures and detours, including additional guidelines and standards to better support pedestrian and bicycle accommodation.

(Policy 2.4)

- Update and add to available information, web pages, and maps for walking and biking. (Policy 3.1)
- Find opportunities to expand dedicated City staff and other program resources for active transportation. (Policy 3.7)
- Adopt a comprehensive transportation safety action plan and strategy with the explicit intent and goal to eliminate traffic fatalities and serious injuries. (Policy 4.2)
- Re-establish a community-wide Safe Routes to School (SRTS) program. (Policy 4.3)
- Explore options for a formal Travel Demand Management (TDM) program. (Policy 5.1)
- Adopt a formal Complete Streets policy. (Policy 5.2)



The list of priority actions should be reviewed every few years to assess progress made on implementation and to consider the next round of priority actions to undertake.

Implementation opportunities

The following describes a wide-ranging list of potential opportunities for implementation of the ATMP.

Funding

- **Transportation sales tax**. In November 2018, Flagstaff voters approved Proposition 419, which extends the transportation sales tax for 20 years, from 2020 to 2040. A total of $29 million is anticipated for pedestrian and bicycle projects over the 20-year life of the tax.
- **First Mile Last Mile grant**. In late 2020, Mountain Line was awarded a Section 5307-5339 grant of approximately $5.5 million from the Federal Transit Administration for pedestrian and bicycle infrastructure. The City has partnered with Mountain Line to deliver pedestrian and bicycle projects funded with the grant. Projects are drawn from the City's prioritized list of pedestrian

and bicycle projects, with additional consideration given to those projects that directly support transit.

- **Other grants**. Historically, grant funding has been an important source of funding for pedestrian and bicycle infrastructure, particularly FUTS trails. The federal Infrastructure Investment and Jobs Act, which was signed into law in November 2021, includes several new grant programs that could be used to fund pedestrian and bicycle projects.

Capital planning and programming

- **Capital Improvements Program (CIP)**. The CIP is a component of the City's annual Budget and Financial Plan that establishes a five-year plan for construction of priority capital projects, including pedestrian and bicycle projects. Projects identified in the first year of the program are funded at the beginning of the following fiscal year and can proceed to design and construction. Years two through five of the capital program list other priority projects and indicate when they are anticipated to receive funding for design and construction.



Other projects

- **Street projects**. Several major roadway projects are also planned with proceeds from the transportation sales tax over the next 20 years. Some of these road projects involve widening or completion of existing streets, while others include construction of new street segments. In all cases, these street projects will include sidewalks, bikeways, FUTS trails, and crossings where they are missing or planned.

- **Capital projects**. Pedestrian and bicycle facilities are frequently included as part of City capital improvement projects, including street and utility projects. This can be more efficient and less costly than building them as stand-alone projects, but it may be necessary to provide additional funds to offset the increase in cost. The Rio de Flag flood control project is an extensive public works project that provides a significant opportunity for pedestrian and bicycle enhancements.

- **Private development**. Historically, public sidewalks, bike lanes, and FUTS trails have been built

by private development as part of their required public improvements. Division 10-30.50 of the Flagstaff Zoning Code requires new development to construct public improvements necessary to mitigate the impacts of the development.

- **Transit projects**. Because walking and biking directly support transit, pedestrian and bicycle infrastructure can often be included in federal grants and funding for transit projects.

Regulations and plans

- **Standards**. The City's Zoning Code and Engineering Standards are the two primary regulatory frameworks for development and infrastructure. Following adoption of the ATMP, both should be reviewed and revised as necessary to incorporate any relevant recommendations from the ATMP.

- **Design guidelines**. Good design and attention to details are critical to successful pedestrian and bicycle facilities. A comprehensive set of design guidelines and best practices for pedestrian and bicycle facilities would benefit implementation of the ATMP.

- **Other plans and programs**. The City and other agencies in the region, including Coconino County, Mountain Line, NAU, MetroPlan, and ADOT, are responsible for a variety of on-going transportation programs and planning efforts. Going forward, these plans and programs may provide opportunities to incorporate the recommendations of the ATMP.



Other opportunities

- **Pilot projects**. Pilot projects are a way to test new facilities and designs without making a long-term investment in permanent infrastructure. They also provide an opportunity to gain public feedback and explore maintenance and operational needs.

- **Tactical urbanism**. Also referred to as lighter-quicker-cheaper (LQC) projects or pop-up projects, tactical urbanism is a community-driven version of pilot projects. These projects are often used as a demonstration of how right-of-way space could be used differently, for example for community or civic space versus vehicle space.

- **Community partners**. While the City will have primary responsibility for implementation of many of the policies and strategies in the ATMP, there is still a substantial and important role in implementation for community partners and stakeholders. Successful implementation requires a community effort and will only succeed with broad participation and support.

- **Walking and biking programs**. Programmatic elements are a critical component of a well-rounded, comprehensive approach to walking and biking. Of the six traditional E's of multimodal transportation planning, only one – Engineering – involves infrastructure. The remaining five – Education, Enforcement, Encouragement, Equity, and Evaluation – are addressed through supportive pedestrian and bicycle programs. To date, the City's efforts have focused on infrastructure, but there is an opportunity and a need to expand programs for walking and biking.



Resources

The Active Transportation Master Plan is an aspirational document, which means that the City does not currently have the resources needed to implement most of the recommendations and projects in this document.

- **Funding**. While the City is fortunate to have almost $35 million available for pedestrian and bicycle projects, this amount will fund most but not all of the projects that have been identified as first priority. Remaining second, third, and fourth priority projects are unfunded in the 20-year time frame.

- **Staffing**. At present, the City of Flagstaff does not have sufficient staff resources to undertake many of the recommendations in this plan, including those highlighted as priority actions. Bicycle Friendly Community metrics indicate that a gold-level community should have one bicycle program staff person for every 32,000 in population. Flagstaff – with a population of more than 75,000 – has one staff for its pedestrian, bicycle, and trails programs.

- **Maintenance**. Additional walking and biking facilities, as outlined in this document, will expand maintenance obligations for the City. Resources for maintenance are already a

challenge for the City; at times there is pushback against new walking and biking facilities because of maintenance concerns.

There are several ways that implementation can be managed and made more efficient with limited resources:

- Use a thorough process for setting priorities for walking and biking facilities to identify the projects that are most important and will have the most impact.
- Establish a realistic and deliberate work program that highlights the priority actions from this document. Follow the work program and avoid distractions from emerging and short-term items.
- Find ways to share the workload with other divisions, programs, and staff where work programs and missions overlap.
- Bolster staff resources using interns, student projects, and AmeriCorps VISTA workers.
- Add new program staff for walking and biking.



6 Planning considerations

This chapter includes a general discussion of how planning for pedestrian and bicycle accommodation fits into the larger contexts of transportation and land use planning.

Transportation planning

Pedestrian and bicycle accommodation are fundamental components of and directly influenced by Flagstaff's overall approach to transportation planning. This section describes a variety of transportation planning concepts and methods that support both walking and biking and a balanced transportation system. These are concepts that can be used in transportation planning at all scales, from intersection improvements to a corridor master plan.

Travel demand management

Travel Demand Management (TDM) is a transportation policy approach that reduces demand for single-occupant vehicle use, while simultaneously encouraging use of sustainable travel modes, including walking, biking, and transit. Traditional transportation planning is often focused on building capacity to meet anticipated demand, typically in terms of roadway infrastructure. TDM emphasizes reducing vehicle demand, using existing resources and capacity more efficiently, and building capacity for walking, biking, and transit.

TDM functions at two levels. At a policy level, TDM is a guiding principle or philosophy for transportation planning. At a practical level, TDM is a comprehensive collection of strategies and programs that typically include facilities for walking, biking, and transit, support programs, incentives and disincentives, employer solutions, information, encouragement, and land use.

Typical TDM program elements

- Enhanced and long-term bike parking
- Showers, lockers, changing rooms
- Bike share
- Bicycle repair stations
- Company bicycle fleet
- Bicycle valet parking
- Car share
- Rideshare
- Vanpools
- Carpool programs
- Transit benefits/subsidies
- Parking pricing/unbundled parking
- Multimodal wayfinding signage
- Multimodal information
- Guaranteed ride home program
- On-site childcare
- Employer-assisted housing
- Flexible work schedules
- Work from home options
- Land use changes

Traffic and congestion

Congestion mitigation

Transportation plans and projects frequently cite "congestion relief" as a primary goal, and often focus on solutions that increase vehicle capacity – such as adding travel lanes and turn lanes – to meet anticipated demand. However, the relationship between travel demand and capacity is not simply linear, and increasing vehicle capacity is not always an effective approach to managing congestion.

Traffic congestion on a roadway is a form of equilibrium between drivers who choose to be on the

roadway and those who have made a different choice to avoid congestion, like taking a different route, leaving at a different time, or using another mode. Increasing roadway capacity by adding vehicle lanes allows more drivers to choose to be on the roadway, and a new equilibrium point for congestion is established. This phenomenon has been widely studied as the concept of induced traffic, and it partially explains why roads that are widened are often just as congested as before within a few years. In the meantime, widening roads is very expensive and can have a negative impact on community character, sustainability, and walking and biking.

A more effective approach includes multiple travel options that are attractive and convenient, including walking, biking, and transit, so travelers have legitimate choices for avoiding congestion. Not all options or modes will work for everyone at all times; but multiple travel options allow the public to choose what best fits their needs for that trip. In Flagstaff, there is a significant community desire for better walking and biking options. When even a few people change their travel behavior, it can make a significant difference.



As Flagstaff moves forward with planning for its transportation network, a robust community conversation is needed about traffic and congestion. This discussion needs to consider realistic expectations about congestion, a change in focus from moving vehicles to moving people, an emphasis on mobility and increasing capacity for all modes, and broader consideration of a range of community objectives for transportation.

Traffic modeling

Traffic models help forecast future travel patterns and roadway network performance. Model results are frequently used to plan for future roadway capacity needs via through lanes, turn lanes, traffic signals, and other modifications. Traffic models are an essential tool for transportation planning, but they need to be used appropriately.

When traffic models are based on worst-case assumptions for future traffic volumes and congestion, the response can be to overbuild roadway capacity for vehicles. This becomes self-fulfilling because it encourages vehicle use and discourages walking and biking, resulting in increased traffic volumes.

Traffic models do not predict the future; they illustrate a potential outcome based on a specific set of assumptions about the future. When those assumptions are changed, different outcomes are

possible. For example, if the model assumes that people will drive more in the future, it will show more congestion, but if walking, biking, and transit use increase, there will be less congestion. Ultimately the direction we take is up to us; it is not predetermined by the model.

Transportation impact analysis

The City requires a transportation impact analysis (TIA) for larger-scale new development to document the impacts of anticipated traffic and to plan for mitigation of those impacts. Historically, the TIA process has emphasized vehicle trips, and mitigation has been focused on expanding vehicle capacity to meet level of service (LOS) objectives. In the last decade, the TIA process has expanded to address walking, biking, and transit trips and to include mitigations that support those modes. Broadening the scope of the TIA process in this way presents an opportunity to take a more well-rounded approach to traffic mitigation and to use walking, biking, and transit to reduce the demand for vehicle travel in new development.

Level of service

Level of service (LOS) is a principle quantitative measure used to assess traffic flow on roadways. The LOS measure assigns letter grades of A to F, with LOS "A" indicating free-flow traffic and LOS "F" representing forced or breakdown flow. LOS only measures vehicle delay; other considerations and community values, such as safety, pedestrian and bicycle accommodation, street character, and overall mobility, are not addressed.

In fact, high LOS ratings are often associated with poor pedestrian and bicycle environments. A street in an urban context – with slow-moving vehicles and significant pedestrian activity – will have a low LOS grade, while wide, fast, busy streets have a high LOS. When used as a primary criterion for evaluating transportation projects, LOS can prioritize vehicle travel over other road users. As a result, LOS should not be the primary or sole measure for evaluating mobility and other objectives in transportation planning and projects.

Other transportation approaches

Over the past few decades, a number of different models for transportation planning have been developed and become widely recognized. These models differ in their details, but in general focus on processes for finding balance in transportation projects, meeting a variety of community objectives, and supporting multimodal options.

Context sensitive solutions

Context sensitive solutions (CSS) describes an approach to transportation planning and street design that considers the environment in which the street is located. This means that streets should look and function differently based on where they are located, and that accommodation for walking and bicycling can vary based on the character of the area. For example, pedestrian facilities on a downtown street should be more robust than a sidewalk in an industrial area. Likewise, an arterial street through a neighborhood should look and function

Principles of a context sensitive process

The principles of CSS promote a planning and design process for transportation facilities that:

- Meet the needs of all users and stakeholders
- Are compatible with their setting
- Preserve scenic, aesthetic, historic, and environmental resources
- Promote safety, efficiency, mobility, multimodalism, capacity, and maintenance
- Integrate community objectives and values for sustainability, livability, community character, and neighborhood compatibility

differently than a street through a rural area. Successful CSS planning efforts are collaborative, include multiple stakeholders, encourage flexibility in design, avoid one-size-fits-all solutions, and consider a range of community objectives.

Complete streets

A complete streets policy holds that streets should be designed, operated, and maintained to enable safe access for all users, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities. A meaningful complete streets policy is more than just providing sidewalks, bike lanes, and bus stops; it means that streets always provide accommodation for all users, even in temporary or interim conditions, as the default; facilities for walking and bicycling are not just present, but functional and comfortable; and operation, maintenance, and snow removal accounts for all users, including pedestrians and bicyclists.

Complete transportation

This concept provides a method to integrate sustainable practices into transportation planning. Principles include optimizing existing infrastructure, enhancing mobility choices and safety, and supporting public priorities like community character and the environment. Strategies for planning processes include defining broad measures of success, establishing a wide range of project objectives, and considering a full set of alternatives in transportation projects.

The process for complete transportation is scalable; the principles and process can be used for large, complex corridor plans as well as determining an appropriate cross section for an intersection leg. The process is especially suited to retrofit projects and determining how to allocate available space to meet multiple needs.

Vision Zero

Vision Zero is an approach to transportation and roadway planning with an overall goal to eliminate all traffic fatalities and severe injuries, while increasing opportunities for safe, healthy, and equitable mobility for all. The approach recognizes that people make mistakes, but roadway systems – design, speeds, behaviors, technology, and policies – can be improved to lessen the severity of crashes, and that traffic deaths and serious injuries are preventable.

Universal design and accessibility

Universal design

Universal design means that walking and biking facilities are usable by all individuals, regardless of age, ability, or situation and without the need for special adaptation. When transportation facilities incorporate principles of universal design, all users benefit. Some common examples of universal design include curb ramps for wheelchair access that benefit all pedestrians, FUTS trails with moderate slopes and a firm, compacted surface to accommodate wheelchair use, and pedestrian push buttons located at a height that is reachable by everyone.

Principles of universal design

- Equitable use
- Flexibility in use
- Simplicity and intuitive use
- Perceptible information
- Tolerance for error
- Low physical effort
- Space and room for approach and use

Accessibility

The Americans with Disabilities Act (ADA) is a federal civil rights law that prohibits discrimination on the basis of disability. For purposes of the law, a disability is defined as a physical or mental impairment, either permanent or temporary, that substantially limits one or more major life activities. ADA became law in 1990 and was amended in 2008 to broaden the definition of disability and extend protections to more people. In Flagstaff, American Community Survey statistics indicate that one out of every 11 residents have some form of disability.

In the 30 years since ADA became law, several sets of standards and guidelines have been adopted or published. Most include some provisions for pedestrian facilities and accommodation:



- **ADA Accessibility Guidelines (ADAAG)**. Guidelines that apply primarily to buildings and building sites, but include several provisions for sidewalks such as running slope, cross slope, obstructions, and curb ramps.
- **ADA Standards for Accessible Design**. The standards are based on and similar to ADAAG, but they are enforceable standards rather than guidelines.
- **Public right-of-way accessibility guidelines (PROWAG)**. These guidelines specifically address sidewalks and other pedestrian facilities in the public right-of-way, but they have not been formally adopted as standards. As a result, they serve as a guide for "best practices" for accessible pedestrian accommodation.
- **Shared use path accessibility guidelines**. A proposed, but not adopted, supplement to PROWAG that is specific to pedestrian and bicycle paths.

Equity

Low-income neighborhoods, communities of color, and other traditionally disadvantaged populations and groups tend to be underrepresented in transportation planning processes. However, the same populations and groups are often disparately affected, particularly in regard to mobility and reliance on walking, biking, and transit.

There are a number of ways to promote equity in transportation planning:

- **Build relationships**. Establish connections and build good relationships with neighborhoods, groups, and individuals in advance.
- **Let communities lead**. Local communities and groups have the best perspective of their situation; listen and learn from them, give value to their contributions, and share decision making with them.
- **Evaluate and measure**. Routine equity analyses of transportation plans and programs can help ensure that equity considerations are included and addressed in a meaningful way.
- **Share benefits**. Walking and biking provide a number of benefits generally; however, it is important to tailor plans and projects so the benefits are specific and meaningful to the community or neighborhood.
- **Intentional outreach**. Outreach efforts must be concerted and intentional to reach populations and communities that do not typically participate in transportation planning processes. Opportunities for meaningful participation and engagement should be brought to the community.
- **Build capacity**. Support the development of leadership and participation within disadvantaged communities and groups.
- **Recruit participation**. Include representatives from underserved communities and populations on transportation boards and commissions. This effort needs to be based on a foundation of long term and committed engagement, so representation does not become tokenism.

Transit

First/last mile

This concept refers to the connections that transit riders need to make at both ends of a transit trip, such as getting from home to the bus stop at one end and getting from the bus stop to their destination at the other end.



For short distances, walking is a viable option for first/last mile connections to a bus stop. However, if sidewalks and crossings are not present, or if the pedestrian environment feels unpleasant or unsafe, then even a quarter mile walk may

feel too far to walk. On the other hand, in excellent pedestrian environments, transit patrons will be willing to walk further to access transit.

Bicycling to transit can significantly extend the distance patrons are willing or able to travel to get to a bus stop, but only if complete and comfortable biking networks that connect to the stop are available. A bike-sharing system is beneficial because it allows transit riders to access transit by bike without owning a bike. Secure bike parking, especially long-term bicycle storage, at the station or destination also supports biking to transit.

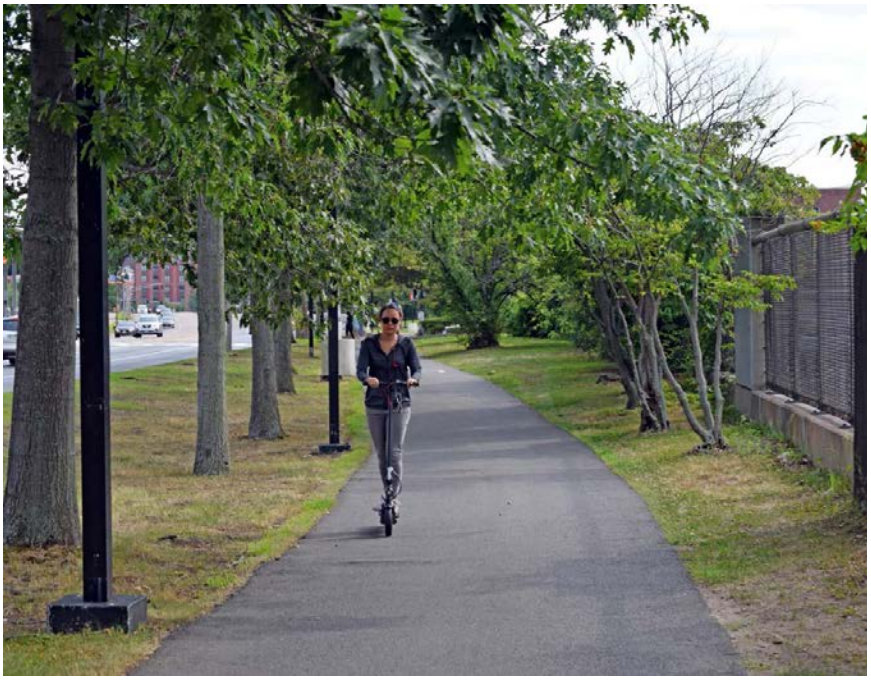
Transit oriented development

Transit oriented development (TOD) describes dense, compact, mixed-use development centered around transit stops. At a community level, TOD encourages land use patterns that cluster higher-density activity centers near transit stops and lines. At a site level, TOD incorporates site design principles such as direct walkways, frequent crossings, and walkable streets to strengthen pedestrian access between the development and the transit stop.

Micromobility

Micromobility is a rapidly evolving category of light-weight individual transportation devices, often driven by an electric motor, including electric scooters, e-bikes, Segways, electric skateboards, and hoverboards. Electric micromobility devices can be more efficient, affordable, and accessible than cars, and they represent a low-carbon mode of transportation to replace cars for daily vehicle trips.

The City's challenge is to encourage the potential mobility benefits of these devices without creating conflicts with pedestrians and bicyclists. There is typically an expectation that new devices will compete for the same space – sidewalks, bike lanes, and FUTS trails – that in many cases is already insufficient for pedestrians and bicyclists. However, as use of these devices expands, it may result in a reduction in motor vehicle use and suggests a potential reallocation of roadway space currently given to motor vehicles.



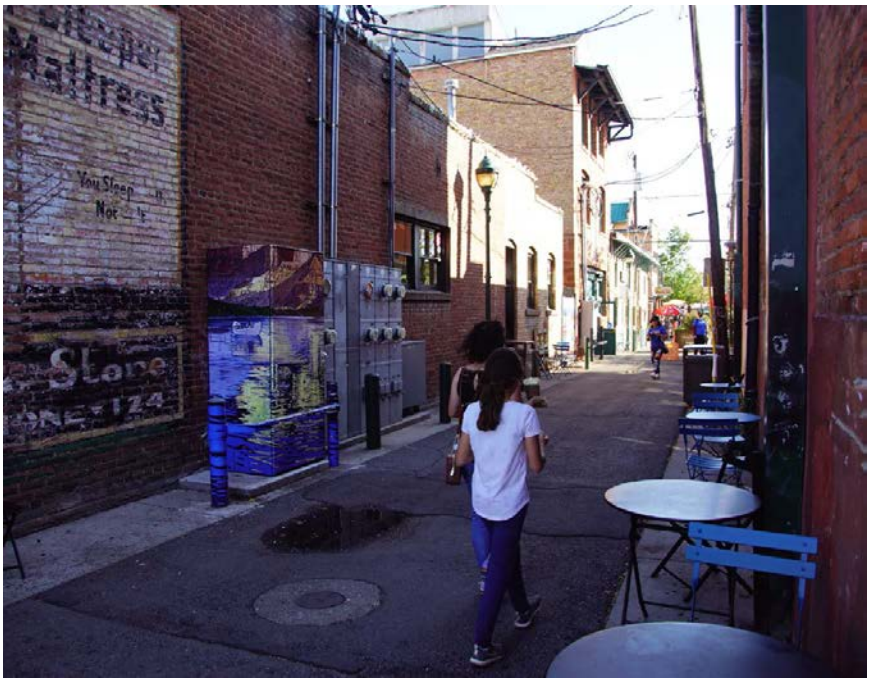
Denver, Colorado *Toole Design Group*

Land use and urban form

This section explores how walking and biking are affected by land use, city form, and urban design. Flagstaff's Regional Plan establishes a community vision for land use and urban form and provides considerable guidance regarding future growth and development patterns.

Land use

Walking and biking are fundamentally affected by patterns of land use, development, and growth. Compact, dense, mixed-use development patterns support walking and biking, while sprawling, low-density, segregated-use patterns encourage vehicle use and are not conducive to travel on foot or bicycle.



- **Compact form**. Infill development, as opposed to growth at the periphery of the community, uses existing resources and infrastructure more efficiently, keeps distances short for walking and biking, and helps keep neighborhoods at a human scale.
- **Density**. Means more residences, shops, services, and jobs are clustered in a compact geographic area, which reduces travel distances and creates more opportunities for walking and biking.
- **Mixed use**. A diversity of uses within a neighborhood or in proximity to one another makes it possible to walk or bike for daily needs; for example, biking to work or school, walking around the corner to get lunch, or making a short bike ride to an appointment.

MetroPlan's Trip Diary Survey provides empirical evidence of the relationship between land use patterns and walking and biking. In Flagstaff's core area – which is generally compact, dense, and mixed-use – almost 60 percent of trips are made by walking, biking, or transit. In contrast, only 11 percent of trips are made by walking, biking, or transit in the rest of Flagstaff, which is more low-density and vehicle-dominated in character.

Urban design

The pedestrian and bicycle environment is significantly affected by elements of urban design, including building setbacks and orientation, architecture and building facades, streetscaping, and landscaping. Most people – pedestrians and bicyclists included – respond positively to active, engaging, interesting, and pleasant streets and buildings. Urban design can also dramatically impact the perception of distance; people are much more willing to walk or bike longer distances if the area they are traveling through is interesting and appealing.

While urban design considerations are typically thought of as relevant to urban contexts, the principles are readily adaptable to suburban environments as well. In many ways, good design is even more imperative in suburban environments to overcome the negative effects that low-density, sprawling development, and isolated land uses have on walking and biking. Suburban areas may be more difficult to transform into walkable urban places, but there is still much that can be done to enhance walkability and bicycle friendliness overall.

Placemaking

Placemaking describes a process of transforming the public realm into quality places for people. Placemaking strengthens the connection between people and the places they live and helps create public spaces that contribute to community character and a sense of well-being. Urban design, public art, landscaping, and amenities are all aspects of placemaking.



Streets are our most fundamental and ubiquitous shared public space and consequently have tremendous potential for placemaking. Streets are generally considered in functional terms for cars and parking, although historically streets have served a variety of community functions, including recreation, conversation, celebration, protest, gathering, interaction, shopping, performance, culture, art, and lingering.

Pedestrian and bicycle facilities are both elements of placemaking and greatly enhanced by placemaking. Walking and biking function at a human scale, so small, local placemaking gestures in conjunction with pedestrian and bicycle networks are often the most meaningful.

Examples of placemaking for walking and biking include:

- Artistic or decorative elements incorporated into the design of transportation infrastructure.
- Formal public art installations located along FUTS trails and other walking and biking networks.
- Seating areas, benches, pocket parks, community gardens, plazas, and other civic spaces located along FUTS trails and other walking and biking networks.
- Interpretive signs, historic plaques and markers, and memorials that acknowledge and celebrate historic locations and neighborhoods.
- Community events that promote walking and biking, including themed walks and bike rides, cyclovias, open streets, and neighborhood gatherings.
- Streetscaping, landscaping, and other pedestrian amenities along street corridors.

Connectivity

The pattern of streets in the community, and the resulting level of pedestrian and bicycle connectivity, is another important determinant for the pedestrian and bicycle environment. There are two models that describe street networks – the traditional grid and the suburban loops-and-lollipops – that represent opposite ends of a spectrum.

Traditional grids have several advantages for walking and biking, including allowing multiple routes and options for walking and biking, and reducing distances and out-of-direction travel. A loop-and-lollipop network works against walking and biking in a number of ways; large block sizes and circuitous street patterns limit route options for walking and biking and require out-of-direction travel, and the hierarchical street pattern can force pedestrians and bicyclists onto wider, faster, busier arterial streets that are not comfortable and difficult to cross.

Regardless of the street network, it is possible and often desirable to create a pedestrian and bicycle grid that is denser than the street network and provides a higher degree of connectivity for walking and biking. Where the street network is not well-connected, and blocks are very large, short pedestrian and bicycle connections between streets, neighborhoods, commercial areas, and

Street connectivity



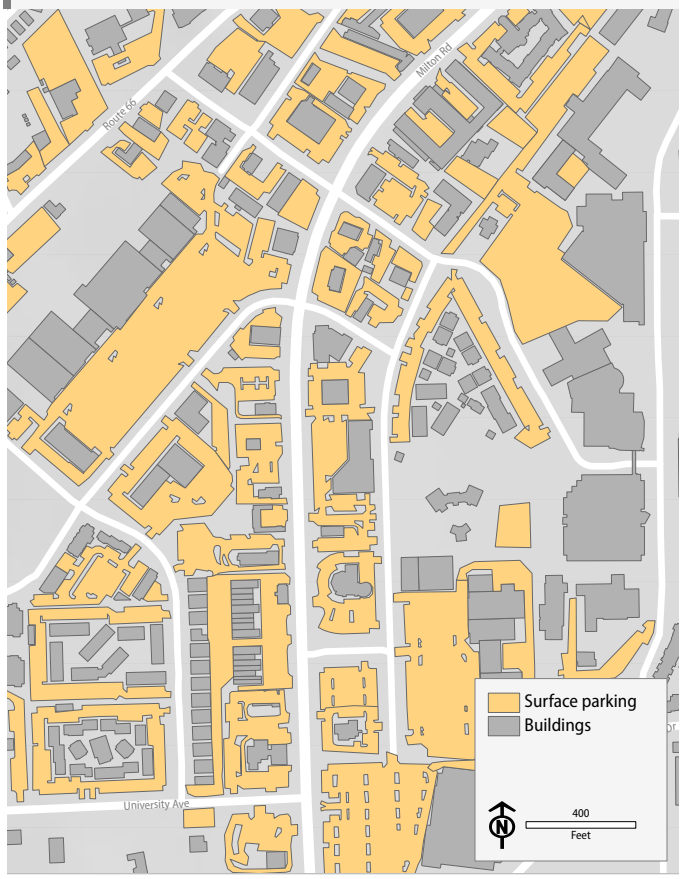
Traditional grid

Loops and lollipops

other destinations can significantly improve non-motorized access. FUTS trails can also provide additional access within a neighborhood, as well as connectivity to surrounding areas. Major streets in an area can form barriers and interrupt the pedestrian/bicycle grid unless frequent crossings are provided.

The density or spacing of the non-motorized grid should vary by context and area type. In an urban area or activity center, grid spacing should not exceed 300-350 feet, and in some cases can be as small as 150 feet. In downtown Flagstaff, for example, alleys are important pedestrian facilities and reduce the grid spacing to about 175 feet. In suburban areas, maintaining a consistent grid is more difficult, but should be no more than 660 feet (an eighth of a mile). The frequency of crossings on major streets often increases the spacing to 1320 feet (quarter-mile) or more.

Surface parking along Milton Rd



Parking

Vehicular parking lots often work against walking and biking in a number of ways:

- Parking lots can take up large areas of land, which works against density and compact form and the benefits that go with them.
- Abundant parking provides an encouragement to drive.
- Parking lots at the front of a building create a barrier for pedestrians between the building and the street that is challenging to cross.
- Parking located in front of buildings and along the street creates expanses with little interest or appeal to pedestrians and makes it difficult to maintain a pedestrian scale.

At the same time, parking can be a difficult community conversation because there is often an uneasiness with the idea of providing less parking and a concern that parking will not be convenient or available when it is needed. An inadequate supply of on-site parking is perceived to result in a number of problems, including blocked driveways, parking on sidewalks and in landscaped areas, and parking demand being pushed into other areas.

There are a number of ways to manage the demand for parking and mitigate its impacts:

- **More on-street parking**. On-street parking helps reduce the demand for on-site parking

spaces, and can provide additional benefits like providing a buffer for pedestrians and reducing traffic speeds.

- **Encourage shared parking**. Sharing parking between adjoining parcels and uses can help even-out parking demand across a larger area.

- **Parking structure**. A parking structure in Downtown or the Southside would help ease concerns about the availability of parking, and allow conversion of street parking to public space.

- **Unbundle parking fees from rent**. Unbundling allows residents and tenants to pay for parking only if they need it. This helps lower the cost of housing, mitigates demand for parking, reduces vehicle trips, and incentivizes walking, biking, and transit.

- **Reduce demand**. Encouraging other City incentives and requirements can help reduce demand for parking, such as bike share, enhanced bike parking, transit passes, and car share options.

- **Review parking minimums**. Current minimum standards for parking in the Zoning Code should be reviewed to match actual demand and not encourage excess parking. Parking minimums in urban areas and activity centers can be lower than suburban areas.

Area types and activity centers

The Regional Plan describes three different area types – urban, suburban, and rural – to help define the character of existing development and plan for future growth and redevelopment. Area types are also useful for defining the context and planning appropriately for pedestrian and bicycle accommodation.

Urban

Urban areas include older, historic areas like Downtown and the Southside that were developed prior to the automobile and contribute to Flagstaff's unique character. Land use in urban areas tends to be denser, more compact, and mixed-use. Urban areas are the most walkable and bikeable due to their density, compact form, and a tight grid street pattern. Streets tend to be narrower, slower, and more inviting, although there is often less space available for dedicated walking and biking facilities.

Walking and biking should generally be favored over automobile travel in urban areas, especially when there is limited room in the right-of-way and competition for space. Streets should be designed for an urban context, as opposed to imposing a suburban-style street into an urban environment.

Suburban

Land use and street patterns in suburban areas are generally less conducive to walking and biking for a number of reasons. Land use tends to be low-density, homogenous, and isolated by large roads and parking lots. Block sizes can be very large, and the street grid is often disconnected.

Streets are designed to prioritize vehicle movement, and there is abundant parking. Streets are hierarchical from local to arterial, so those most useful for travel are also the widest, fastest, and busiest.

As a result, suburban areas require additional effort to make them more pedestrian and bicycle friendly. Over time, land use patterns in suburban areas can be transformed to become more dense, compact, and mixed use. Suburban streets can also be transformed to be less automobile-dominated and more like complete streets and community places. Additional non-motorized corridors and connections create better connectivity for pedestrians and bicycles.

Rural

This area type is defined by very large lots and very low-density residential neighborhoods. The region's outlying communities fall into this category, but only a few areas within Flagstaff city limits are considered part of the rural area type. Streets in rural areas typically provide little or no accommodation for walking and biking. Additionally, roadway connections between Flagstaff and its outlying communities are often highways which are not conducive to walking and biking.

Local streets in rural areas should provide sidewalks as a minimum accommodation for pedestrians. Collector and arterial roadways should always accommodate pedestrians and bicyclists, including sidewalks and bikeways.

Activity centers

Activity centers are locations identified in the Regional Plan as appropriate for clusters of mixed-use, compact, dense development or redevelopment. The area included within an activity center is defined by a quarter-mile pedestrian shed and based on a five-minute walking distance. Activity centers represent areas where land use and development patterns can be transformed over time to better support walking, biking, and transit. Activity centers also provide an opportunity for enhanced pedestrian and bicycle accommodation.



NAU campus

In this discussion of land use and urban form, the Northern Arizona University (NAU) campus warrants special consideration. With nearly 30,000 students, the NAU campus is the most substantial generator and attractor of travel trips in Flagstaff. The NAU campus is also centrally located and part of Flagstaff's core area, along with Downtown and Southside. This creates enhanced potential for walking

and biking, and it means the campus occupies a prominent space in our overall pedestrian, bicycle, and FUTS network.

Multiple, convenient, non-motorized points of access between the campus and the community are needed to better facilitate walking and biking trips to campus. Accommodating pedestrian and bicycle travel through campus is also important for Flagstaff's overall walking and biking networks. For bicyclists travelling from southern neighborhoods to Downtown, for example, the best travel routes go through campus.

NAU is a separate governmental entity and outside of City jurisdiction, which makes cooperation and coordination with NAU paramount to any pedestrian and bicycle efforts.

7 Design guidance

This chapter examines the impact of street and intersection design on walking and biking, and provides general information on design features for pedestrian and bicycle accommodation.

Streets

The design, function, and character of streets and intersections are significant determinants of walkability and bicycle friendliness, beyond the simple provision of basic facilities like sidewalks and bike lanes. This chapter acknowledges the impact of street and intersection design on walking and biking, and the information presented here provides detailed guidance for more comfortable pedestrian and bicycle accommodation.

Right-sizing

Right-sizing refers to the principle of planning for streets that are not wider than they need to be. Wide streets are detrimental to walking and biking for a number of reasons; crossing distance is increased, vehicle speeds tend to be faster, and they are generally less comfortable for walking and biking. There are four street elements to consider in right-sizing:

- **Travel lanes**. Multiple travel lanes (two or more in each direction) can result in faster vehicle speeds, more difficult and less safe crossings, and generally less comfortable streets for walking and biking.

- **Lane width**. Excess lane width also encourages faster vehicle speeds and adds to crossing distance. Where street space is constrained, wide travel lanes take space that could be otherwise used to add or enhance pedestrian and bicycle facilities. Standard lane width for arterials and collectors in Flagstaff is 11 feet, or 12 feet for designated truck routes. For many streets, narrower lane widths would be possible, and in fact are already in use on some streets.

- **Additional lanes at intersections**. Right and left turn lanes are often added at intersections to improve traffic flow. This can result in intersections that are much wider than the adjoining street segments. It also makes them more difficult, and in some cases less safe, for crossing pedestrians and bicyclists.

- **Right turn lanes and bus pull outs**. Right turn lanes and bus pull-outs are often added along major street segments to improve traffic flow. They are intended to reduce delay to through vehicles caused by right-turning vehicles or stopped buses; however, they can also have the effect of allowing increased vehicle speeds.

When additional travel or turn lanes are considered for any street, there should be a thorough review of options and trade-offs, including whether additional lanes are needed, if induced traffic will nullify any benefits from increased vehicle capacity, if there are safety benefits or issues, if other options to increase capacity have been considered, whether the context is suitable for a

wide road or intersection, if there will be disparate impacts on vulnerable roadway users, if all potential community impacts have been considered, and if the benefits outweigh the adverse impacts.

Road diets

In a few cases, where streets have more lanes than are needed based either on current or projected traffic volumes, removal of unnecessary lanes should be considered. The space created by decommissioning lanes would be very beneficial for expanded pedestrian and bicycle facilities or community space. Candidate streets for road diets might include:

- Aspen Ave – Humphreys to Elden
- Beaver St – Butler to Columbus
- Birch Ave – Humphreys to Elden
- Butler Ave – Continental to end
- Country Club Dr – Soliere to Oakmont
- Fremont Blvd – Mountain to Kramer
- Lake Mary Rd – High Country to J.W. Powell
- San Francisco St – Butler to Columbus

Speed management

Slowing vehicle speeds is one of the most effective ways to enhance safety for all road users, especially vulnerable users. Slower speeds reduce the likelihood that crashes will occur by increasing reaction times for drivers, decreasing required braking distance, and expanding a driver's field of vision. Slower speeds also reduce the severity of crashes; a pedestrian struck by a vehicle at 40 mph has a 20 percent chance of survival, but at 20 mph a pedestrian's survival rate increases to 80 percent.



Slower speeds are also essential to creating streets that are more comfortable for walking and biking, less intimidating to cross, less likely to function as a community barrier, and more likely to be a community place. Roadway design, character, and context elements can be the most effective techniques for managing speed:

- Allow on-street parking on more arterial and collector streets. This also helps reduce the need for large parking fields on private

parcels.

- Keep streets from being overbuilt with extra lanes and wider-than-needed lane widths.
- Add turn lanes and bus pull-outs sparingly. Where turn lanes are used, design them to be slow speed.
- Include regular crossings for pedestrians and bicyclists, including flashing beacons and enhanced crossings.
- Incorporate streetscaping, including street trees and landscaped medians, into roadway design.
- Design street geometry, curves, and alignments to help lower speeds, based on context and functional class.
- Include bump-outs, neckdowns, median islands, and other traffic calming features in street design.
- Use context and street hierarchy to help guide street design and set appropriate speeds. Higher volumes on non-residential streets allows slower speeds and reduced volumes on neighborhood streets.
- Provide visual clues in street and streetscaping design for transitions from one context to another, such that drivers feel like they should slow down when the street enters a neighborhood.
- Design intersections and roundabouts to encourage slower speeds.
- Include enhanced bicycle facilities along the edges of the street, like buffered and separated bike lanes.
- Encourage pedestrian and bicycle activity. Drivers are more mindful of walkers and bikers when they regularly expect to encounter them.
- Place buildings, outdoor areas, community space, and other activities close to the street.

Intersections

Intersections provide a place for pedestrians and bicyclists to cross busy streets, especially when vehicle traffic is controlled by a traffic signal or stop signs. However, large, busy intersections can also be intimidating for pedestrians and bicyclists, and intersections with multiple turning movements create multiple potential conflicts points between vehicles and pedestrians or bicyclists. In these circumstances, large intersections can function as a barrier for multimodal transportation networks.

Intersections should be kept compact and small to help minimize crossing distances and crash

exposure for pedestrians and bicyclists. Slip lanes and other features that encourage higher speeds should be generally avoided. Crossings should be simple and easy to understand, with crosswalks placed where pedestrians want to cross and where drivers will see them. Use smaller radii at corners to decrease crossing distance, slow turning vehicles, and simplify placement of curb ramps.

Traffic signals

Traffic signals are used at higher volume intersections to assign right-of-way and regulate the flow of traffic. While traffic signals provide accommodation for crossing pedestrians, they do not guarantee comfort or safety. There are a number of signal elements that support walking and biking, including bicycle detection, accessible pedestrian signals, right-turn-on-red restrictions, and lead pedestrian or bicycle intervals.

Roundabouts

Roundabouts can be more efficient than a signalized intersection because they slow vehicular traffic but allow it to keep moving. There are fewer conflict points, and no left turns at roundabouts, so there are typically fewer crashes. The efficiency of roundabouts can help avoid the need for large multilane intersections.



Woodinville, Washington *Toole Design Group*

- **Pedestrians**. For pedestrians, crossings can be safer and less difficult than at conventional signalized intersections because vehicle traffic is slowed, crossings are broken into individual segments, there are only a few traffic lanes to cross, and there are fewer points of conflict with turning vehicles.

- **Bicyclists**. For bicyclists, there are two options for riding through a roundabout. Bike lanes do not continue through a roundabout, so a cyclist either takes the lane and proceeds through as a vehicle or exits onto the adjoining sidewalk to proceed through as a pedestrian. In the first case, many bicyclists will only feel comfortable where traffic speeds and volumes are low through the roundabout. For the second case, it is important to include adequate accommodation for bicyclists who choose to leave the roadway, including exit/entry ramps and wide pathways or separated lanes around the perimeter of the roundabout.

Multi-lane roundabouts operate somewhat differently than single-lane roundabouts; vehicle speeds are more difficult to slow, and there are additional lanes to cross. As a result, research

suggests that some of the safety benefits for pedestrians and bicyclists at single-lane roundabouts are compromised at multi-lane roundabouts. Similarly, slip lanes or channelized rights at roundabouts make it more difficult to manage speeds and provide another lane to cross.

Pedestrian facilities

This section includes an in-depth review of best practices and design guidance for a variety of pedestrian and bicycle facilities. Attention to detail is critical to making walking and biking functional and attractive; the information presented here is intended to provide that detail.

Sidewalks



Sidewalks are the most basic and important facility for walking and a fundamental component of a pedestrian-friendly community. Although they are sometimes taken for granted, or their importance is overlooked, sidewalks provide numerous benefits by:

- Providing a place for pedestrians, away from vehicles, that makes it comfortable and appealing to walk.
- Encouraging people to be more active; people who live in neighborhoods with sidewalks are more likely to be active on a regular basis.
- Enhancing safety for walking; sidewalks reduce pedestrian crashes up to 88 percent.
- Benefitting property values; houses with sidewalks have been found to sell for more, and in less time, than houses without sidewalks.
- Providing public/community space that promotes social interaction and makes neighborhoods more vibrant.
- Promoting equity in neighborhoods; all residents can use sidewalks, regardless of age, ability, or income.

The minimum required width for sidewalks in Flagstaff is five feet for local and collector streets and six feet for arterials, although the width varies and is generally wider in transect zoning

districts. A review of current standards is recommended to consider wider sidewalks, and to refine width requirements to cover a range of land uses, contexts, and area types.

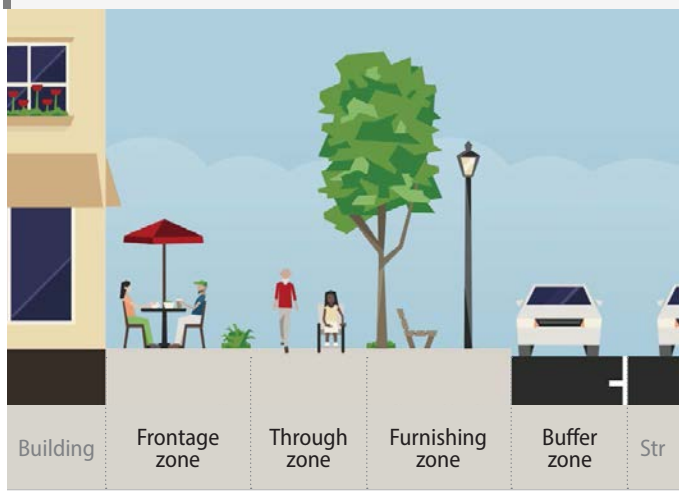
Where sidewalks are missing or located only along one side of a street, a "goat path" invariably develops by people walking where the sidewalk should be. While it may be tempting to consider situations where sidewalks are not be needed on one or both sides of a street, this line of inquiry is generally proven wrong by subsequent patterns of use. Basic pedestrian accommodation dictates that sidewalks should always be present on both sides of the street.

Pedestrian zones

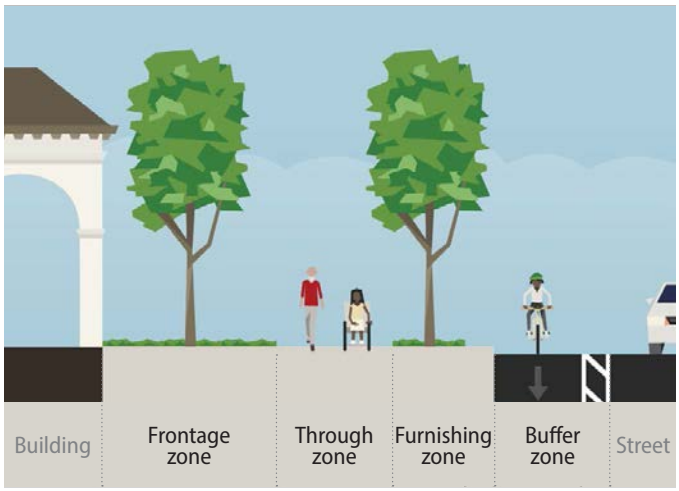
While the term "sidewalk" generally refers only to the strip of pavement where people walk, the concept of pedestrian zones introduces a more encompassing term that comprises four distinct components:

- **Pedestrian through zone**. Describes the primary pathway or walking surface for pedestrians that runs parallel to the street. This area is intended for pedestrian travel, and as a result, it should be continuous, follow a direct alignment, and be free of encroachments and obstructions.
- **Furnishing zone**. This is the strip of land between the street and the through zone. In urban areas, the furnishing strip can be hardscaped and is the preferred location for a variety of street elements, such as light poles, benches, and fire hydrants. In a suburban context, the furnishing zone is referred to as a parkway and can be landscaped.
- **Frontage zone**. Refers to the area from the through zone to the front of buildings. Various private elements belong here, including sidewalk cafes, storefronts, and outdoor sales. This zone can also support the public realm in the form of seating and gathering areas, public art, plazas, and streetscaping. The character of the frontage zone can vary by context: hardscape elements are appropriate in urban areas, while in suburban areas, the frontage zone can be a landscape buffer or a natural area between the sidewalk and a building or a parking lot.

Pedestrian zones



Urban



Suburban

- **Buffer zone**. Although not always present, this comprises the additional space between the furnishing zone and vehicle travel lanes on the street. The buffer zone includes on-street parking, bike lanes, and curb extensions or swellings.

All four zones are important elements for pedestrians and should be considered as integral to the sidewalk.

Furnishing strips and parkways

Parkways and furnishing strips, as described in the section above, serve a number of valuable functions for pedestrian accommodation. Parkways:

- Serve as a buffer between pedestrians and the street and contribute to pedestrian safety and comfort.
- Provide a place to store snow cleared from the street. When a parkway is not present, snow is either plowed onto the sidewalk or into the bike lane.
- Collect cinders in the winter and help keep them away from the walkway.
- Keep construction signs, trash bins, and other obstructions from blocking the sidewalk or bike lane.
- Create space for street trees, utilities, and streetscaping.
- Make it easier to maintain accessible sidewalk grades across driveways and curb ramps.

The furnishing strip or parkway is sometimes eliminated in street projects or new development, particularly in circumstances where right-of-way is restricted. For infill or retrofit projects, the parkway or furnishing strip should only be eliminated for good cause and when no alternatives exist. Mitigation should be required, such as a wider sidewalk or other buffers. In greenfield development, the furnishing strip or parkway should always be provided.

Bicycle facilities

Bikeways

Bikeways are a network of linear transportation corridors intended to accommodate bicycle use. Historically, Flagstaff has accommodated bicyclists with conventional bike lanes on collector and arterial streets, as well as paved FUTS trails along a few streets to provide an alternative for bicyclists who are not comfortable on the street.

This document introduces a more robust plan for a bikeways network based on the following characteristics:

- **Low stress**. Most people will feel safe and comfortable riding a bicycle, regardless of their ability or experience. The network is intended to appeal to the interested-but-concerned segment of the population, an estimated 60 percent of the population who would like to ride more for commuting and errands if comfortable bicycle infrastructure were in place.

- **Hierarchical**. The planned network is organized around a hierarchy of primary, secondary, and third level bikeways. The hierarchy helps guide a variety of policies and practices for bikeways; primary and secondary bikeways are prioritized for construction and implementation, are more likely to include separated facilities, and are considered priority routes for maintenance, snow clearing, sweeping, and closures. The hierarchy also plays a valuable role in wayfinding.

- **Comprised of a variety of facilities**. The planned bikeways network is comprised of a variety of facilities, which are categorized based on the extent of separation from traffic:

  - **Shared street facilities** include bike routes and bike boulevards on low-volume and low-speed neighborhood streets.
  - **Dedicated facilities** like conventional and buffered bike lanes provide bicyclists with their own dedicated space within the roadway.
  - **Separated facilities** like separated bike lanes, cycletracks, and FUTS trails physically remove bicyclists from traffic.

- **Includes intersections and crossings**. A variety of intersection and crossing treatments are planned as critical components of a low stress bikeways network, including enhanced crossings, separated intersections, and grade-separated crossings.



Vancouver, British Columbia *Carl Sundstrom*

- **Comprehensive and cohesive**. The network is planned to allow bicyclists to travel comfortably and conveniently to destinations and neighborhoods throughout Flagstaff. The system is unified through a system of wayfinding, identification, and branding.

Bicycle parking

Bike parking encourages bicycling because it provides a location for secure bicycle storage when bicyclists reach their destination. When bike parking is unavailable, inconvenient, or not functional, people may be discouraged from bicycling. Additionally, accommodating bicycle

parking eliminates the clutter, hazards, and damage that can result from unintended or unplanned bicycle storage.



At locations where bikes will be left or stored for longer periods of time, such as employment centers, student housing, transit centers, and high-density residential development, there is a need for greater security and protection from the weather. Options for long term parking include shelters, lockers, cages, and indoor rooms. Flagstaff's Zoning Code includes requirements for short term bike parking, but does not cover longer term bike storage.

Bike parking for special events encourages bicycling, minimizes the traffic impacts of events, and reduces demand for vehicle parking. Some opportunities for special event parking include encouraging community groups to sponsor valet bike parking, adding permanent bike parking at event venues, and working with event organizers to provide banks of temporary bike parking.

Bicycle support facilities

A variety of other facilities provide support and encouragement for bicycling:

- **Bike stations**. Bike stations or hubs are facilities that provide a variety of services, typically intended for commuter cyclists, that might include secure indoor bicycle storage, showers and changing rooms, repair services or self-serve repair stands, sale of basic parts like inner tubes, lights, or locks, and commuter assistance and information. Stations and hubs are scalable and can range from a basic self-serve facility to a deluxe facility that has regular staff and offers repair services, retail sales, or even a coffee shop. Space in public parking garages is often used for bike stations.

- **Repair stands**. Essentially a micro version of a bike station, these small, self-service repair stands typically include a place to hang a bicycle for repairs, an air pump, and basic tools. Because they are small and inexpensive, they can be scattered throughout the community at a variety of public and private locations.

- **Bicycle collectives**. A bicycle collective – or community bike shop, bike kitchen, or bike co-op – is typically a non-profit, community-based entity that provides a variety of services for low-

income and other disadvantaged populations, such as inexpensive or free bicycles, low-cost or free repairs, rentals, tool libraries, bicycle and parts recycling, earn-a-bike programs, and safety and maintenance classes. Such facilities increase bicycle access to underserved populations that rely on walking and bicycling for mobility.

Trails

Flagstaff Urban Trails System (FUTS)

The Flagstaff Urban Trails System, or FUTS, is a citywide network of shared use pathways that are used extensively by walkers, bicyclists, and other users for both recreation and transportation. The current network of FUTS, which comprises 59 miles of multi-use pathways, is an important pedestrian and bicycle facility and a complement to on-street networks.



About half of the miles of existing FUTS trails are paved, either in concrete or asphalt, and half consist of a hard-packed, aggregate surface. FUTS trails are generally eight or ten feet in width to allow mixed pedestrian and bicycle traffic. With a few exceptions, FUTS trails are operated and maintained by the City.

FUTS trails offer a diverse range of experiences for walking and biking; some trails are located along busy streets, while others traverse beautiful natural places – canyons, riparian areas, grasslands, meadows, and forests – all within the urban area of Flagstaff. The system connects neighborhoods, shopping, places of employment, schools, parks, open space, and the surrounding National Forest, and allows users to combine transportation, recreation, and contact with nature.

Transportation and recreation

FUTS trails serve both a transportation and a recreation function. Although some trails are used primarily for transportation, and others function mainly for recreation, most strike a balance somewhere in between. In fact, FUTS are most successful when they serve both functions. For example, an ideal FUTS trail is one that gives access to destinations and serves a meaningful transportation function, but also traverses natural areas and provides an enjoyable and pleasant experience.

FUTS as bikeways

Flagstaff's practice for bicycle accommodation along busy streets has consisted of conventional bike lanes on street and FUTS trails adjacent to some streets for those bicyclists who are not comfortable in the bike lane. Implementation of a low stress bikeways network, as described in the section above, means that in many locations FUTS trails may no longer be required to function as an alternative for bicyclists along busy streets. FUTS trails, howeverm, will remain an important component of the bikeways network.

Greenways and open space

Greenways describe linear, open corridors along FUTS trails in a variety of conditions and configurations. In some cases, greenways can be expansive in scale and part of the regional park and open space system. In other cases, a greenway can be narrow and specific to the trail. Parks and recreation space, natural areas, landscaping, and undisturbed portions of a site along a trail can all function as a greenway.



The presence of a greenway can significantly enhance the recreational or commuting experience for trail users by creating a more pleasant experience, providing a way to access nature at a local level, and offering a contrast or respite from urban development. At the neighborhood or regional level, greenways can help organize neighborhoods and define urban form, create corridors between neighborhoods and regional parks and open space, and complete a regional interconnected open space system. FUTS trails often follow natural corridors, so there is already substantial overlap between FUTS and the linear greenways system of washes, hillsides and canyons throughout Flagstaff.

There are two options available to help secure and implement greenways, both of which will require further exploration and refinement, as well as adoption of guidelines and standards. The first is to review current Zoning Code standards for ways to secure greenways as part of private development, including resource protection standards, civic space, and open space requirements. The second is to plan for greenways in conjunction with the City's overall open space strategy and plan, to ensure the City is positioned to take advantage of emergent opportunities for acquisition and preservation.

Other trails and facilities

A series of other kinds of trails and trail facilities are planned as complementary to the main FUTS system. These are described in more detail in Chapter 8, and include the following:

- Neighborhood trails
- Singletrack trails
- Singletrack access trails
- Forest access points
- Trailheads and trail hubs
- Outlying neighborhood connections

Crossings

This section describes facilities that allow pedestrians and bicyclists to cross busy streets safely and comfortably. Two general categories are described here: at-grade and grade-separated crossings.

At-grade crossings

At-grade crossings are an essential component of the pedestrian and bicycle network, and the ability to cross a street comfortably and safely is as important to walkability and bicycle-friendliness as walking or biking along the street. In general, additional formal crossings would be beneficial for walking and biking along most major streets in Flagstaff, and finding opportunities to increase available crossings is an important component of this plan.

Pedestrian behavior is a function of human nature. Pedestrians wish to cross the street for the basic purpose of reaching a destination on the other side. Where formal crossings are not present or are spaced far apart, pedestrians will cross where it is most convenient, even if it involves an element of risk.



Crossing hierarchy

Appropriate facilities for an at-grade crossing are determined by the characteristics of the street at the crossing location; in particular, the speed and volume of traffic, the number of lanes to cross, the presence of a raised median in the middle of the street. In general, streets that are higher volume and

speed, have more lanes to cross, and lack a raised median require additional facilities to make the crossing safe and comfortable for pedestrians and bicyclists.

Crossing types

Four types of crossings are considered here, listed generally in order of how much assistance is provided for the crossing.

- **Beacon crossing**. Crossing beacons are pedestrian-activated flashing lights that are appropriate on streets where the width, volume, and speed of traffic make crossing difficult without the aid of the beacon. Two types of pedestrian-activated flashing beacons are presently in use in Flagstaff:
  - **Round or rectangular rapid flashing beacons** (RRFB) feature an amber flashing light that draws attention to the crossing and reminds drivers to yield to pedestrians in the crosswalk
  - **Pedestrian hybrid beacons** (PHB) are a traffic control device with red lights that require vehicles to stop for pedestrians. They are sometimes referred to as a HAWK crossing.

- **Enhanced**. Enhanced crossings include a variety of features that help slow traffic, shorten crossing distances, break crossings into separate parts, increase visibility, or in general make the crossing safer and more comfortable. Enhanced crossing treatments may include median islands, curb extensions, landscape features, high-visibility markings, advance warning signs, and pedestrian-scaled lighting. Enhanced crossings are appropriate on moderate to high speed and volume roadways.

- **Median**. This type of crossing uses median islands in a series at several locations along the length of the corridor. Median crossings are suitable for three-lane streets that include one travel lane in each direction plus a two-way center lane; the medians can be added along sections of the center turn lane. Other enhanced features can be considered as well when necessary or beneficial.

- **Basic**. This includes basic crossing features, such as curb ramps and crosswalk markings (in suitable locations), at defined intersections along minor collector and commercial street corridors. For high use crossings, additional features like pedestrian lighting, crossing signs, and in-street crossing markers can be used.

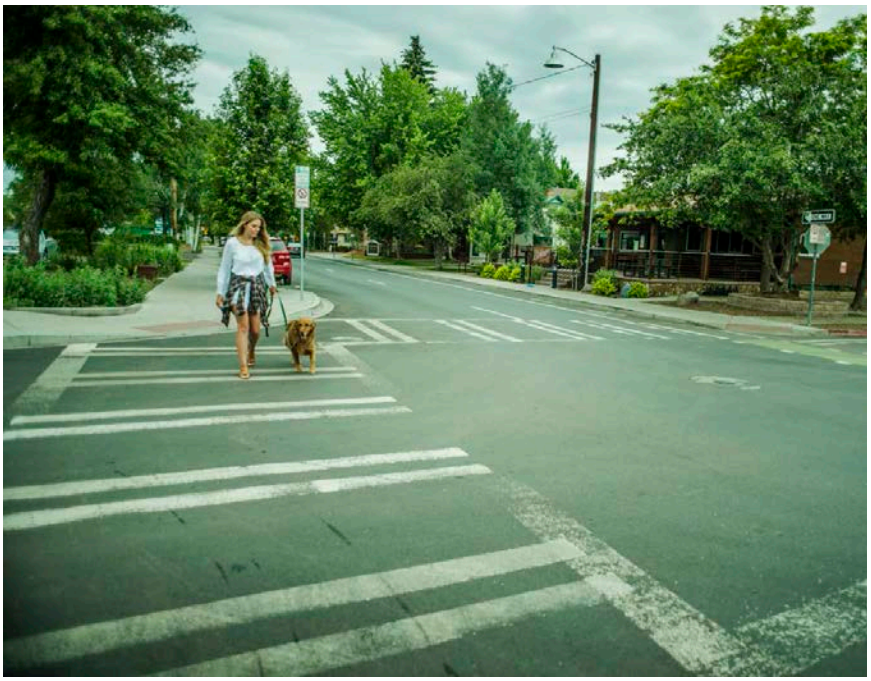
Crosswalks

Per Arizona Revised Statutes § 28-601, legally defined crosswalks exist at all street intersections, whether or not they are painted with crosswalk markings. Legal crosswalks also exist at non-intersection, mid-block locations when they are distinctly marked.

Simply marking a crossing does not make it safer. When a street is unsafe to cross, it is typically due to a combination of factors including vehicle speed and volume, crossing distance, sight distance, visibility, and driver expectation. Making the crossing safer may require other improvements and enhancements to mitigate these conditions, as illustrated in the preceding passage on crossing types. Contrary to popular belief, there is little evidence to support the notion that marked crosswalks give pedestrians a "false sense of security" when crossing.

Other crossing types

This plan includes some specific crossing types that deserve additional guidance:



- **Bikeway crossings**. There are a variety of crossing types that are designed specifically to accommodate bicyclists, including bike hawks, toucans, and separated intersections and roundabouts. Bikeway-specific crossings are planned in conjunction with the bikeways plan, but in some cases overlap with the planned at-grade and grade-separated crossings described in this section.

- **FUTS crossings**. There are a number of locations along the FUTS system where trails cross major streets, including many midblock crossings. In some cases, midblock locations are preferred to intersections, because there are fewer lanes to cross and the crossing is simpler. All midblock FUTS locations should include formal crossing facilities to avoid any ambiguity with state law. The design of FUTS crossings should support both pedestrian and bicycle use.

Grade-separated crossings

Grade-separated crossings refer to structures that convey pedestrians and bicyclists over or under interstates, railroad tracks, and major roads. Grade-separated structures include dedicated bridges and tunnels for the exclusive use of pedestrians and bicyclists, as well as street underpass and overpass structures that include facilities for walking and biking.

Grade-separated crossings can add significant value to the walking and biking environment by providing access across features that otherwise create barriers in walking and biking networks. Bridge and tunnel structures are also very expensive to build, so locations must be carefully planned to have the most impact and serve the greatest need.

Good design is also key to the success of grade-separated structures. A few basic guidelines should be considered as part of planning for any grade-separated crossing:

- **At-grade crossings**. Where a bridge or tunnel is built across a busy street, it should not be made a substitute for at-grade pedestrian and bicycle crossings. Bridges and tunnels work best for linear facilities, like FUTS trails. They do not work well as an alternative to an at-grade

crossing, because the additional distance needed to climb or descend to the crossing will discourage their use.

- **Topography**. Grade-separated crossings work best when existing topography allows for a structure under or over without the need for long or steep ramps to gain or lose elevation.



- **Design**. Grade-separated crossings that are perceived as uncomfortable or unsafe will not be used. Structures should be open, inviting, and well-lit. Approaches to a tunnel should be long and straight and allow users to see into and through the tunnel well in advance.

- **Opportunities for placemaking**. Amenities such as plazas, landscaping, pedestrian lighting, seating areas, interpretive displays, and public art make structures more attractive and inviting to users, and help establish these facilities as neighborhood and community assets.

- **Activity and safety**. Tunnels that are well-used provide a greater sense of security and safety for all users. When a tunnel is used frequently, it is regularly monitored by other users, and those who seek to engage in nefarious behavior will be discouraged.

Maintenance and operations

Maintenance

Maintaining walking and biking facilities is just as important as building them. Cracked sidewalks, faded bike lane markings, and eroded FUTS trails discourage their use and can create safety hazards. However, resources needed for maintenance compete with many other municipal needs, and it can be challenging to make an effective case to decision makers when asking for additional maintenance resources.

The first line of defense is to build facilities that require less ongoing maintenance by design. Building FUTS trails with good drainage features, for example, reduces the need to repair future erosion problems. The second approach is to collect good information about maintenance quantities, practices, standards, and costs to make maintenance operations as efficient as possible

and to effectively make the case for the need.

Ultimately, it may come down to policy choices about resource allocation and resolving to dedicate adequate funds to take care of walking and biking facilities. In some cases, this may mean finding a balance in maintenance resources between vehicular facilities and pedestrian and bicycle facilities.

Snow removal

Although Flagstaff sometimes gets heavy snowfalls, a good part of the winter is clear, dry, reasonably warm, and viable for bicycling and walking. However, when snow is left on or plowed into bike lanes and sidewalks, it can form an ice pack that tends to remain long after the adjoining street is clear and dry. This discourages walking and biking, can create dangerous conditions, and hampers mobility for a portion of the population.

The use of cinders on streets during snow events makes it challenging to keep bike lanes clear through the winter and spring. Cinders also accumulate on sidewalks throughout the winter, and often remain into spring and summer months, making sidewalks difficult to use.



Clearing sidewalks of snow and cinders is the responsibility of the adjoining parcel owner, per Section 8-03-001-0004 of Flagstaff City Code. This means that the challenge for keeping public sidewalks clear is more of a compliance problem and less of an operations issue for the City.

Like maintenance, good design can help minimize issues with snow and cinders. For example, including a parkway between the street and the sidewalk provides a place for storage of snow and accumulation of cinders; as a result, they are less likely to end up on the sidewalk.

Beyond design, two practices will help improve snow and cinder removal. The first is to establish hierarchies and priorities within walking and biking networks, so the most important routes and facilities can be cleared first. The second is to provide good information about snow and cinder removal policies and practices so the public knows what to expect and can easily find up-to-date and accurate information.

Snow and cinder removal can be another policy question related to resource allocation. The City may consider a different allocation of resources for snow clearing between vehicular facilities and pedestrian/bicycle infrastructure, including practices that support walking and biking while still ensuring the safety of drivers, bikers, and pedestrians.

Closures and detours

Closure of sidewalks, bike lanes, and FUTS facilities due to construction, repairs, utility work, and other activities is inevitable. However, how closures are managed makes a significant and visible difference in how well pedestrians and bicyclists are accommodated overall. The City needs formal policies and practices for closure of walking and biking facilities, based on the following guidelines:

- **Keep facilities open**. Walking and biking facilities should be closed only when necessary; the first effort should be finding a way to keep the facility open. Charging developers and contractors a fee to close facilities would serve as an incentive to keep them open.
- **Prioritize pedestrians and bicyclists**. The needs of pedestrians and bicyclists should always be considered above the convenience of construction activities.
- **Limit scope and duration**. Close only what is necessary; for example, it may not be necessary to close a long section of sidewalk to replace a single panel. Similarly, limit the duration of closures to only the time needed for work that affects the facility; pedestrian and bike routes should be reopened as soon as possible.
- **Provide detours**. Provide alternate routes and detours to maintain connectivity when pedestrian and bicycle facilities are closed.
- **Prioritize primary facilities**. Use context and the hierarchy of facilities to guide closure policies. More of an effort should be made to keep priority facilities and important routes open, or to provide good detours when they must be closed.



- **Share information**. Keep the public informed before and during closures using on-site signage, the City's website, social media, and press releases to disseminate information. Reliable information helps engender public trust and goodwill.

8 Infrastructure recommendations

This chapter includes recommendations and a plan for new and enhanced infrastructure for walking and biking. The term "infrastructure" refers to physical facilities for walking and biking, and includes sidewalks, bikeways, urban trails, and crossings. Facilities that are functional, convenient, and comfortable for walking and biking are essential to supporting active transportation.

Infrastructure purpose and intent

Purpose

This section of the ATMP establishes a plan for pedestrian and bicycle infrastructure to guide for active transportation improvements in both the short term and long term. More specifically, the infrastructure section will:

- Inventory existing facilities and create a plan for missing and needed additional infrastructure.
- Develop a consistent and transparent process for prioritizing planned improvements to make sure resources are used on improvements that are most needed and will provide the most benefit.
- Support the capital planning process by identifying priority projects that can be built over the next 20 years with available funding, principally the pedestrian and bicycle portion of the transportation sales tax and First Mile Last Mile grant funding. This list can be further refined to include projects in the five-year capital planning process.
- Plan for pedestrian and bicycle infrastructure that will be built by other projects, in particular private development and public roadway and capital projects.
- Position the City to take advantage of opportunities for funding and implementation when they come up, including grants.

Infrastructure intent

Recommendations for walking and biking infrastructure included in this section are intended to create robust and comprehensive networks for walking and biking:

- Complete gaps and missing facilities to form complete networks for walking and biking, and integrate across networks to create seamless connectivity.
- Address some of the infrastructure challenges for walking and biking identified in Chapter 2 of this document.
- Plan for additional enhanced and separated crossings at key locations to limit the extent to

which major streets, the interstates, and the railroad create barriers for walking and biking connectivity.

- Enhance the network of FUTS trails by adding important trail links and connections, improving and enhancing existing trails, and planning for seamless connectivity to regional trails and open space.
- Establish a citywide network of low-stress bikeways that features higher-level separated facilities and comprehensive wayfinding.
- Provide better pedestrian and bicycle access to and from Flagstaff's neighborhoods, especially those that are isolated or lack basic walking and biking accommodation.
- Facilitate better access to transit by addressing pedestrian and bicycle facilities around bus stops and routes.
- Allow seamless walking and biking connectivity between the NAU campus and the community.

Prioritization process

Process

To help organize, evaluate, and prioritize pedestrian and bicycle projects in a systematic way, this four-step process was used to plan and prioritize basic infrastructure, including sidewalks, bikeways, enhanced crossings, bridges and tunnels, and FUTS trails.

Priorities should be reviewed and updated to reflect changes in circumstances, and to make sure the evaluation is current and responsive to the needs and desires of the community.



- **Inventory**. The first step involves a detailed inventory of existing facilities, as well as a detailed plan for facilities that are missing or needed.
- **Implementation**. This step categorizes new infrastructure according to how it will be built: some of the missing facilities will be

built as part of other private development or public roadway projects, while remaining facilities must be funded and constructed by the City as stand-alone capital projects.

- **Prioritization**. A formal prioritization process, described in more detail below, helps determine which walking and biking facilities are most needed and will provide the most benefit.

- **Programming**. For the final step, concept-level cost estimates are prepared for all planned facilities, and priority projects are programmed in the City's five-year capital plan. This final step is beyond the scope of this master plan, but would be done as part of the capital planning and programming process.

Priority factors

Sidewalks, crossings, and FUTS trails

Four prioritization factors are used to determine a priority score for each planned facility. Of the four factors, three are common and used for all types of facilities:

- **Generators and attractors**. Include places and land uses that encourage and support walking and bicycling trips.

- **Social factors**. Describe circumstances or conditions that make people more likely to walk or bike and include traditionally underserved populations who would benefit from enhanced mobility.

- **Need and functionality**. This represents an aggregate of several sources of information, including knowledge and experience, anecdotal evidence, results of previous surveys, safety and crash data, conversations with community members, and discussions at Pedestrian and Bicycle Advisory Committee meetings.

A fourth prioritization factor is specific to each type of facility:

- **Sidewalks | Pedestrian comfort index**. A quantitative measure of how comfortable a street is for pedestrians, based on a variety of street characteristics.

- **Crossings | Crossing comfort**. A composite score that is a measure of how comfortable or difficult it is to cross the street.

Generators and attractors

- Schools
- Parks
- Transit stops
- Residential neighborhoods
- Commercial areas
- Employment centers
- Institutions
- NAU and CCC campus

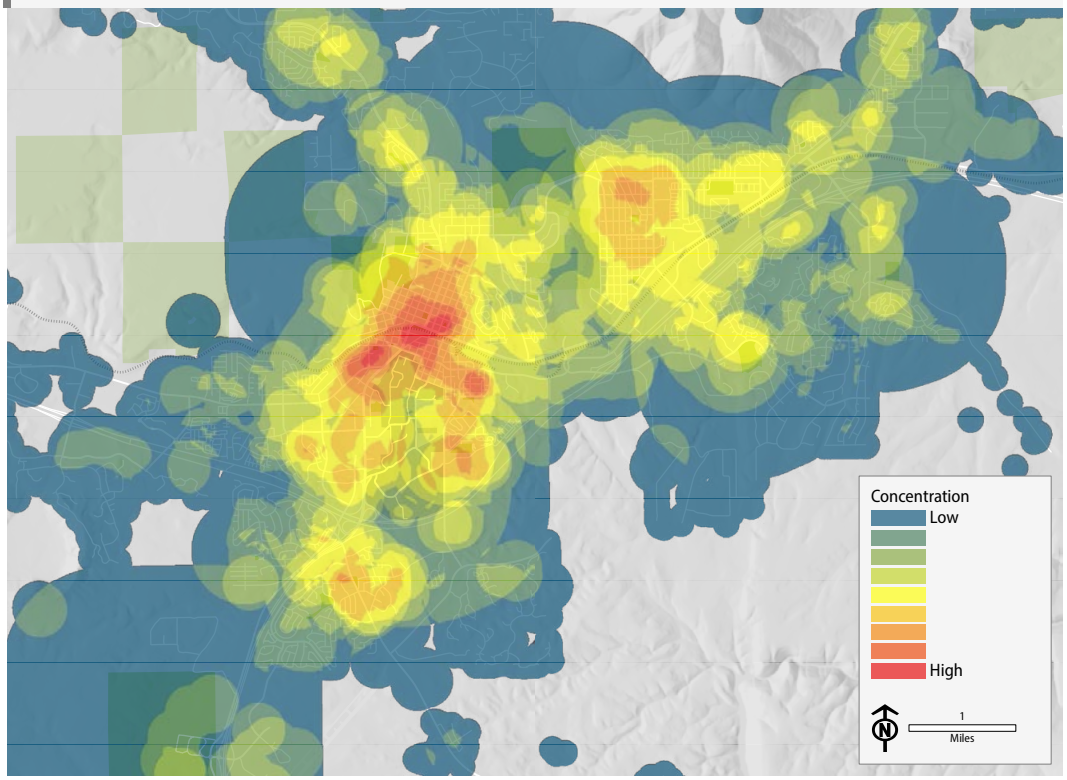
Social factors

- Elderly populations aged 65 and over
- Children under 18
- Persons with disabilities
- People of color
- Household poverty status
- Households without access to a vehicle
- Affordable and assisted housing locations
- Human service facilities

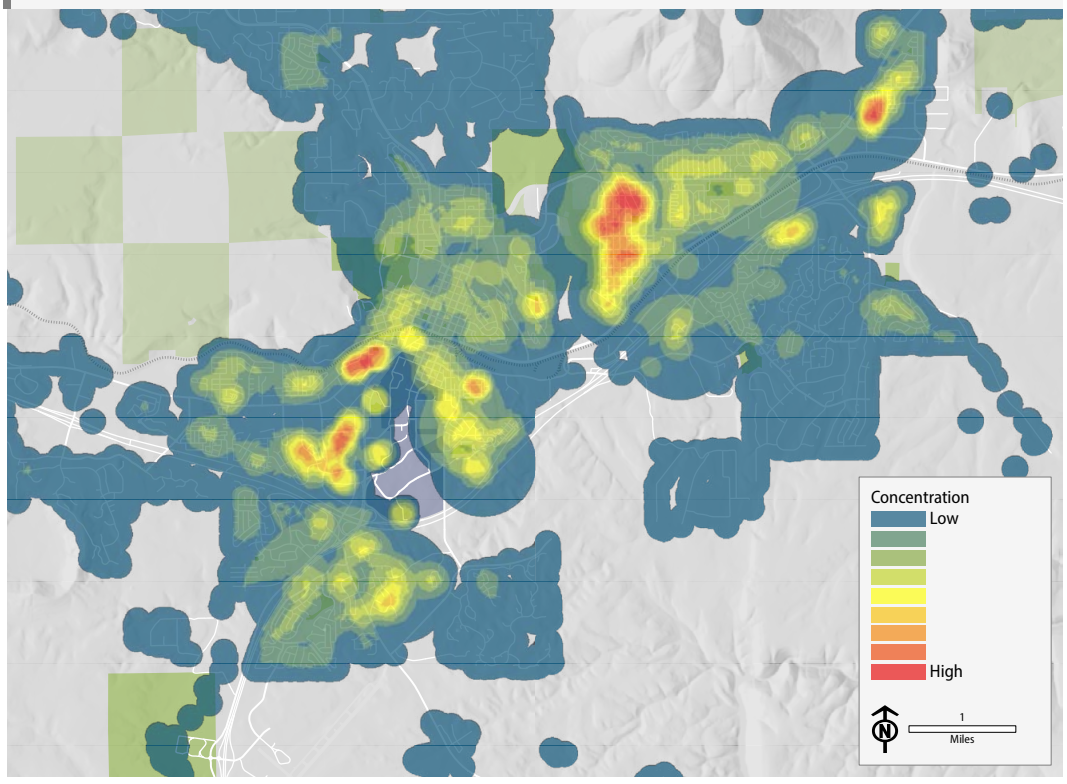
Need and functionality

- Serves an important function
- Identified as a community need
- Expected level of use
- Addresses safety issues
- Community support
- Difficulty or constructability

Generators and attractors



Social factors



- **FUTS trails | Completion and connectivity**. Qualitative assessment of the extent to which the planned FUTS will connect the system, complete gaps, and serve new neighborhoods or areas.

The four factors for each facility type are combined to generate a priority score of 0 to 100, where a higher score indicates a higher priority. Projects are separated into four priority levels based on the score.

Bikeways

Prioritization of bikeway improvements considers several factors:

- **Bikeways hierarchy**. Primary bikeways are given a higher priority than secondary and tertiary bikeways.
- **Completion**. Projects that help connect or complete missing segments in existing bikeways are favored.
- **Reliance on other projects**. Priorities may be lowered for projects that are reliant on other roadway, capital, or development projects for which timing is uncertain or several years in the future.
- **Function and use**. Higher priorities are assigned to bikeways that serve an important, identifiable function in the transportation network and are anticipated to be well-used.
- **Need**. Considers the character of the street and the extent to which the facility will make the street more comfortable for bicyclists.



Priorities and timeframes

The ATMP identifies a long list of potential pedestrian and bicycle projects and establishes priorities between them using a formal prioritization process. The capital programming process, which follows but is not part of the ATMP, assigns an approximate timeframe to projects – within five years, within 20 years, or beyond 20 years – based on anticipated funding for pedestrian and bicycle projects from the transportation sales tax and First Mile Last Mile grant. The capital programming process is fiscally constrained, meaning that the total cost of projects included in the five and 20-year

timeframe does not exceed available funding. The prioritization process is not fiscally bounded.

It is important to note that anticipated funding over the next 20 years will cover most, but not all the projects identified as first priorities. Projects at the second, third, and fourth priority level are generally unfunded and therefore fall outside the 20-year timeframe of the transportation sales tax.

Additionally, both project costs and anticipated funding are best estimates at this time. Construction costs, sales tax revenues, and project priorities will change over the course of 20 years and affect which projects are built in the next 20 years and which are not.

Infrastructure recommendations

This section provides a summary of the ATMP's recommendations for pedestrian and bicycle infrastructure. Maps to illustrate these recommendations are included at the end of this section, beginning on page 79. An online map of planned walking and biking facilities can be accessed at this link: https://flagstaff.maps.arcgis.com/apps/instant/sidebar/index.html?appid=a53a041956f5473490a93b48d32f8f80

Sidewalks

Plan for sidewalks

Existing sidewalks along all public streets, and missing sidewalks along major streets, are depicted on Map 8.01 on page 79 at the end of this section. Map 8.02 on page 80 shows missing sidewalks by priority.

Existing sidewalks. At present, there are a total of 302.0 miles of existing sidewalks along all public streets in Flagstaff. This number includes 143.5 miles of existing sidewalks along major streets, which are defined as having a functional class designation of arterial, collector, or commercial local street.

Missing/planned sidewalks. The sidewalk inventory also identifies a total of 58.3 miles of missing sidewalks along major public streets. Missing sidewalks along local residential streets have not been inventoried and are not included in this total.

Implementation. Of the missing sidewalk miles, it is anticipated that planned roadway projects will complete 10.5 miles, and future private development will account for another 8.4 miles. A total of 35.7 miles of missing sidewalks must be funded and built as stand-alone sidewalk projects.

Sidewalks | plan summary	
Inventory	
Existing sidewalk miles	302.0
Missing sidewalk miles	58.3
Implementation	
Private development	8.4
Public roadways	10.5
Other sources	3.8
Sidewalk projects	35.7
Total miles	58.3
Priorities	
First priority	7.9
Second priority	6.1
Third priority	4.9
Fourth priority	16.8
Total miles	35.7
Estimated cost	
First priority	$4.96 million
Total	$21.80 million

Priorities. A total of 7.9 miles of missing sidewalk have been identified as first priority projects, and another 6.1 miles are considered second priority.

Estimated cost. The cost to complete all missing sidewalks is estimated at $21.80 million; this includes $4.96 million for sidewalks that are considered first priority.

Sidewalk planning considerations

Neighborhood sidewalks. In several locations, missing sidewalks have been prioritized along the main collector streets in neighborhoods that do not have sidewalks. Completing these sidewalks will provide a way for residents to walk to or from their neighborhood, even if local streets within the neighborhood do not have sidewalks.

Infill sidewalks. The inventory identifies numerous short missing sidewalk segments, typically less than 200 feet in length, that are categorized as infill projects. Infill projects are generally less complicated to engineer and build, and can be grouped together for project delivery and construction. As a result, infill segments are planned for completion in the first five years.

Other sidewalk recommendations

Upgrade, replace or repair sidewalks that are deficient or in disrepair. The sidewalk inventory documents only whether a sidewalk is present along a street or not; it does not indicate the quality, adequacy, or condition of the sidewalk. It is recommended that additional information be collected to address enhancements, replacements and repairs, including an inventory of sidewalk condition and needed improvements, a summary of potential funding sources, and a listing of other opportunities as part of public roadway and private development projects.

Add curb ramps where missing. Information about curb ramps was not collected as part of this plan, but a subsequent effort could include an inventory of missing and existing curb ramps, an assessment of condition, estimated costs, potential funding sources, and opportunities to complete as part of other projects. When the City collects information about curb ramps, or sidewalk condition as described above, it is important to dedicate funding and resources as part of the effort so the City can begin to address the deficiencies identified in the inventory.

At-grade crossings | plan summary	
Inventory	
Existing crossings	21
Planned crossings	70
Implementation	
Private development	1
Public roadways	7
Other sources	0
Crossing projects	62
Total crossings	70
Priorities	
First priority	13
Second priority	16
Third priority	15
Fourth priority	18
Total crossings	62
Estimated cost	
First priority	$ 4.72 million
Total	$ 18.72 million

At-grade crossings

Plan for enhanced at-grade crossings

Existing and planned locations for enhanced at-grade crossings are included on Map 8.03 on page 81. Map 8.04 shows planned enhanced crossings by priority.

Existing crossings. There are 21 existing enhanced at-grade crossings in Flagstaff, including two pedestrian hybrid beacons, nine rapid flashing beacons, and 10 crossings with enhanced features.

Planned crossings. A total of 70 new locations have been identified for new enhanced crossings. This number includes 32 potential beacon crossings, 20 enhanced crossings, and 18 median crossings (crossing types are described in more detail above in Chapter 7).

Implementation. Of the 70 potential new crossing locations, most (62) are planned as stand-alone crossing projects. Seven will be built in conjunction with planned roadway projects, and one crossing is anticipated as part of future private development.

Priorities. Thirteen new at-grade crossings have been designated as first-priority locations, and another 16 locations are considered second priorities.

Estimated cost. The total estimated cost for all planned enhanced crossings is $18.72 million. First-priority crossings are estimated to cost $4.72 million.

Crossing planning considerations

Planned locations. Locations for new crossings were identified based on several considerations:

- Locations along long stretches of major streets where there are no formal crossings.
- Places where there are existing needs for a crossing based on observation, anecdotal information, crash history, crossing difficulties, public surveys, and community feedback.
- Locations where there are important pedestrian generators and attractors on one or both sides of the street, including transit stops.
- Along three-lane streets that have a continuous center turn lane and provide an opportunity for median crossings.

Locations identified in this plan should be considered preliminary and subject to further review to determine feasibility and optimal locations.

Other at-grade crossing recommendations

Consider locations where basic crossing facilities are needed. Review minor collector and commercial local corridors for locations where basic crossing facilities like curb ramps and crosswalk markings are missing or would be beneficial. At locations where pedestrian activity is high, for example along commercial corridors, additional minor crossing enhancements can be considered. Map 8.05 on page 83 shows locations for basic crossings.

Enhance Downtown/Southside crossings. Consider additional crossing improvements in the Downtown and Southside areas, including midblock crossings that correspond to public alleys and curb swellings, crosswalk markings at additional intersections, and other minor enhancements like in-street pedestrian warning signs.

Review locations where crossings are prohibited. There are 15 signalized intersections in Flagstaff where pedestrian crossings are expressly prohibited on one or more legs. These locations should be reviewed for opportunities to add facilities and remove prohibitions. Intersections with prohibited crossings are depicted on Map 8.06.

Grade-separated crossings

Plan for grade-separated crossings

Map 8.07 on page 85 shows existing and planned grade-separated crossings, and Map 8.08 depicts separated crossings by priority.

Existing grade-separations. Flagstaff has a total of 23 existing grade-separated structures, including two bridges and nine tunnels for the exclusive use of pedestrians and bicyclists. The other twelve crossings are roadway overpasses and underpasses that include facilities for walking and biking.

Planned grade-separations. The plan shows 47 potential new locations for grade-separated crossings, including seven bridges and 26 tunnels. A total of 14 roadway overpasses and underpasses are on the list, of which five will be new structures, and nine are existing structures that need completion of walking and biking facilities.

Implementation. There are opportunities to build 21 of the planned grade-separations with future roadway projects. Twenty-one other crossings must be funded and built as stand-alone projects.

Priorities. Four planned grade-separated crossings are identified as first priority, and three are considered second priority.

Estimated cost. The total cost for all planned grade-separated crossings is $65 million. First priority projects add up to $12 million.

Grade-separated crossings | plan summary	
Inventory	
Existing crossings	23
Planned crossings	47
Implementation	
Private development	2
Public roadways	21
Other sources	3
Crossing projects	21
Total crossings	47
Priorities	
First priority	4
Second priority	3
Third priority	8
Fourth priority	6
Total crossings	21
Estimated cost	
First priority	$ 12.00 million
Total	$ 65.00 million

Grade-separation planning considerations

Planned locations. Candidate locations for new grade-separated crossings are based on several considerations:

- Locations where planned FUTS and major bikeways cross interstates, BNSF tracks, and major streets.
- Places along the interstates or railroad where there is evidence that people are already crossing.
- At points where there are long distances between crossings along the interstate and BNSF tracks.

- At existing street underpasses and overpasses that lack accommodation for pedestrians and bicyclists.

Roadway projects. Pedestrian and bicycle tunnels under a street are less expensive to build as part of new roadway construction compared to adding a tunnel as a retrofit under an existing street. Pedestrian and bicycle tunnels should be included with new road construction in future capital projects or private development where new grade-separated crossings under planned roads have been identified.

Bikeways

Plan for bikeways

The planned bikeway network, depicted by hierarchy, is included on Map 8.09 on page 87. Map 8.10 shows the long-term plan for bikeways by facility.

Existing bikeways. There are 87.5 miles of existing bikeways in Flagstaff, including 56.4 miles of streets with bike lanes and 15.7 miles of existing FUTS trails that are used as bikeways.

Planned bikeways. The plan for bikeways envisions a total network of 168.2 miles at full buildout. Planned bikeways include 81.9 miles of new bikeways, as well as enhancements and upgrades to 72.0 miles of existing bikeways.

Implementation. About three-quarters (113.3 miles) of new and upgraded bikeways will be funded and implemented as bikeway projects. A total of 18.3 miles will be built with roadway projects, and 14.9 miles are anticipated with future private development.

Priorities. First priority bikeways comprise 61.1 miles of the total network, while second priority bikeways total 25.7 miles. The plan designates 21 primary bikeway routes totaling 54.3 miles.

Estimated cost. The total estimated cost to complete the bikeways network is $62.93 million. First priority bikeways are estimated at $17.3 million.

Bikeways | plan summary	
Inventory	
Existing bikeway miles	87.5
Planned bikeway miles	153.9
Implementation	
Private development	14.9
Public roadways	18.3
Other sources	7.4
Bikeway projects	113.3
Total miles	153.9
Priorities	
First priority	61.1
Second priority	25.7
Third priority	15.7
Fourth priority	10.8
Total miles	113.3
Estimated cost	
First priority	$17.30 million
Total	$62.93 million

Bikeways planning considerations

Implementation. The intent of the bikeways plan is to front-load implementation to create a functional and visible bikeway system within five years:

- Complete and connect primary bikeways to the greatest extent possible, including using interim facilities.
- Build a few high-visibility and impactful bicycle

enhancements that include higher level facilities such as separated bike lanes and separated intersections.

- Introduce other types of advanced facilities to better accommodate bicyclists, including bike boulevards, two-stage left turns, and cross bike markings.
- Implement basic elements of important second and third level bikeways, including bike lanes and bike routes, to help flesh out a more robust overall network.
- Pull the network together through a comprehensive system of signage, branding, identification, mapping, and information.

FUTS trails

Plan for FUTS trails

Existing and planned FUTS trails are shown on Map 8.11 on page 89 at the end of this section. Map 8.12 shows planned FUTS trails by priorities.

Existing FUTS. Flagstaff has 59.0 miles of existing FUTS trails. About half of the existing miles (29.2) are paved in either concrete or asphalt, and the other half (29.8 miles) is aggregate surfaced.

Planned FUTS. The plan for FUTS shows an additional 76.3 miles of future FUTS trails, for an ultimate system of 135 miles.

Implementation. Of the planned trails, a total of 38.6 miles must be funded and built as standalone projects. Another 26.2 miles are anticipated as part of private development, and 7.0 miles will be built with roadway projects.

Priorities. There are 5.0 miles of planned trails that are considered first priorities, and 4.7 miles that are second priority.

Estimated cost. The total cost to complete all planned FUTS is estimated at $28.74 million, while first priority FUTS will cost $4.29 million to construct.

FUTS trails | plan summary	
Inventory	
Existing FUTS miles	59.0
Planned FUTS miles	76.3
Implementation	
Private development	26.2
Public roadways	7.0
Other sources	4.5
FUTS projects	38.6
Total miles	76.3
Priorities	
First priority	5.0
Second priority	4.7
Third priority	15.3
Fourth priority	13.5
Total miles	38.6
Estimated cost	
First priority	$ 4.29 million
Total	$ 28.74 million

FUTS planning considerations

Planning history. The first plan for FUTS trails dates from 1988 as the final report from an Ad Hoc Urban Trails Committee convened by the City. That report recommends an initial system of 3.2 miles of trails. Since then, more expansive plans for the FUTS network have been mapped in Flagstaff's succession of general and regional plans. The current FUTS master plan is contained in Map 26 of the Flagstaff Regional Plan 2030, which was adopted in 2014.

FUTS as bikeways. With the adoption of a comprehensive plan for bikeways as described in the preceding section, it is no longer necessary to use FUTS trails along major streets as an alternative to on-street bike facilities for those who are not comfortable adjacent to traffic. This allows the FUTS network to function as a walking and biking network that is complementary to but separate from on-street pedestrian and bicycle facilities. As a result, the role of FUTS as a sidepath along busy streets is deemphasized in this plan.

Other trail facilities. The plan for FUTS also includes a variety of other trail types and ancillary facilities – which are described in more detail in the section below – to complement the FUTS network and create an integrated system of trails.

Other FUTS recommendations

Make improvements and enhancements to existing trails. Potential improvements, enhancements, and repairs have been identified at more than 200 locations along existing FUTS. Some of these will help address existing maintenance concerns, while others improve the functionality of the system and enhance user experience.

Plan to systematically replace asphalt trails. The FUTS includes a total of 8.3 miles of asphalt trails. For a variety of reasons, asphalt has not been proven to be a long-lasting material for trails, and it is no longer used when new trails are built. For existing asphalt trails, the long-term solution is to resurface them with concrete. However, this will be expensive and should be planned and funded over time. Priorities for a replacement program can be determined based on a combination of the condition and function of existing asphalt trails.

Other trail facilities

Neighborhood trails

This category includes a variety of short pedestrian and bicycle connections that provide shortcuts through neighborhoods, connections between local destinations, and access to the FUTS system. Neighborhood trails take several different forms, including sidewalks, FUTS trails, and singletrack trails. Most are privately managed, for example, by neighborhoods HOAs, although some are the responsibility of the City.



An inventory has identified 3.8 miles of existing neighborhood trails in a number of locations across town. Neighborhood trails are prevalent in the Ponderosa Trails neighborhood as access trails to the FUTS, and in the

Boulder Pointe neighborhood as non-motorized connections between streets. Four potential new neighborhood trails are identified in this plan. Existing and planned neighborhood trails are shown on Map 8.13 on page 91.

Singletrack access trails

These trails allow connectivity between the FUTS system and recreational singletrack in the surrounding forest. In a number of locations, singletrack access trails are shown as an interim facility along the alignment of a planned FUTS trail. A singletrack trail is significantly less expensive and less complicated to build than a FUTS-standard trail; as a result, they can be in place in the short term rather than waiting several years or more for a FUTS to be completed. Because their primary function is to provide access to recreational singletrack trails, a singletrack trail is usually sufficient and, in some cases, may be preferred by users to a FUTS trail.

Planned alignments for singletrack access trails are included on Map 8.13 on page 91. Flagstaff has eight existing singletrack access trails totaling 1.1 miles. Most of the existing trails are located along the interface between Flagstaff and the south flank of Mt. Elden in the northeast part of the city. The plan calls for 31 new singletrack access trails totaling 20.9 miles in length.

Forest access points

Forest access describes locations around the perimeter of the city where access is gained to regional open space and the national forest, typically via a trail connection. These locations are important because they connect the community to the vast tracts of forest and natural areas that surround the city.

There are hundreds of locations around Flagstaff that are currently used for forest access; however, most are informal and lack formal improvements or permanent rights-of-access. Without a permanent right of access, access points are not secure and may be closed, blocked, or removed without notice. Access may also be lost when private parcels are developed. Planning for access locations will help protect and enhance access to regional open space.



Because forest access locations often involve multiple jurisdictions, for example, a FUTS trail that transitions to a singletrack trail in the national forest, it is important for the City to work with the Forest Service and other land managing agencies to coordinate locations and facilities.

Map 8.14 on page 92 shows existing and planned forest access points. Forty-two existing access points have formal trail improvements and permanent access rights. The map also shows 40 planned locations for forest access points. Of these, 27 locations are already used informally, but lack improvements and access rights. The remaining 13 represent new locations for access.

Trailheads and trail hubs

Trailheads are defined as major points of access to the FUTS system where vehicle parking is available. Basic facilities for trailheads include signing, maps and information, and accessible parking. Advanced facilities might include restrooms, bike parking, picnic tables, interpretive information, paved parking, and other amenities.

Trail hubs are trailhead locations where there is significant connectivity between the FUTS system and surrounding recreational singletrack system. At these locations there is an opportunity to highlight the connectivity between the two trail systems and create a seamless experience.

In general, providing parking for FUTS trails is a lower priority than enhancing pedestrian and bicycle access to FUTS from all parts of the community. However, there are a few circumstances for which vehicular parking is beneficial, such as to better serve visitors to the community and people with mobility limitations.

Map 8.15 on page 93 shows existing and planned trailheads and trail hubs. There are 17 existing trailhead locations that give access to FUTS and other trails. Only a few of these are dedicated solely for trail access; the remainder are parking lots that primarily serve other park or recreation facilities, but can provide access to trails as a secondary function. Opportunities for enhancements or expansion have been identified at 13 of the 17 existing trailheads. New trailheads are planned at eight locations. Eleven new or existing trailheads are planned as trail hubs.

Outlying connections

This category addresses non-motorized commuter routes to county neighborhoods outside Flagstaff, including Bellemont, Fort Valley, Timberline-Fernwood, Doney Park, Cosnino, Mountainaire, and Kachina Village. For most of these neighborhoods, pedestrian and bicycle access is limited to major highways and interstates which often lack adequate pedestrian and bicycle accommodation and are generally not comfortable for walking and biking. Past community surveys, however, have indicated a consistent desire for pedestrian and bicycle connectivity to these neighborhoods.

While FUTS trails would be ideal as a facility, they are expensive and complicated to build, operate, and maintain. Singletrack trails are a less expensive option, but they are generally not conducive to commuting. As an alternative, it may be possible to designate a series of forest roads to form a continuous route. Establishing routes using forest roads would require signage and wayfinding, but potentially few other physical improvements.

Map 8.16 on page 94 shows a variety of potential alignments for non-motorized connections to outlying communities using existing forest roads. These routes are conceptual only and would require further review and agency coordination before they are finalized. However, available information suggests that these routes are already used to some degree for non-motorized travel.

The plan also illustrates alignments for two multiuse pathways along busy roads: a paved path along Highway 89 to Timberline-Fernwood, and another along Highway 180 to Fort Valley. Both pathways are previously addressed in Coconino County planning documents.

Because outlying connections serve neighborhoods outside of City limits, funding and implementation is beyond the City's scope and would require regional coordination among several agencies.

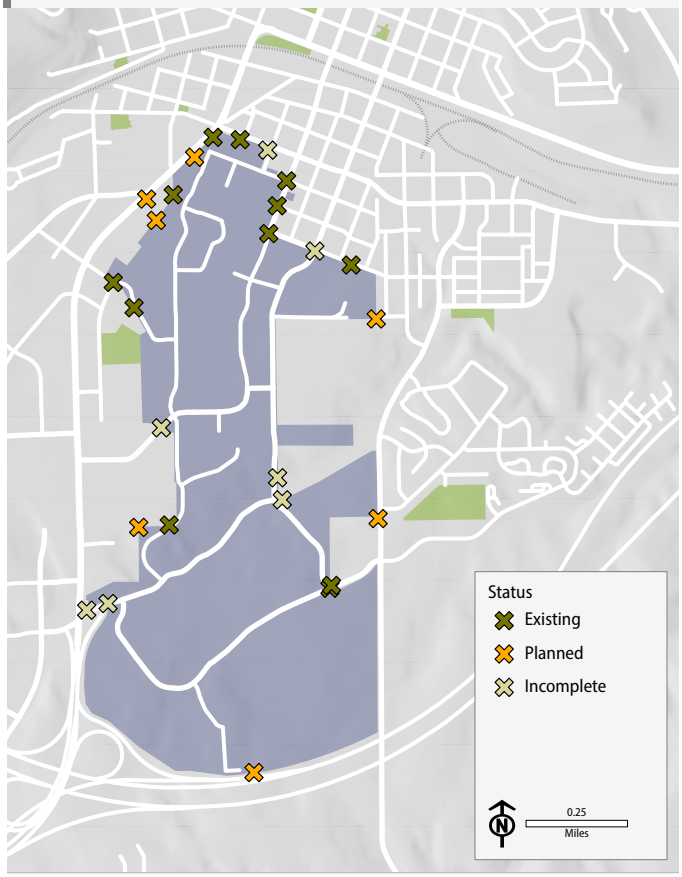
NAU access points

This section considers locations and quality of non-motorized points of access for walking and biking around the perimeter of the NAU campus. Pedestrian and bicycle access onto the campus takes several forms, including sidewalks, FUTS trails, and streets that accommodate walking and biking.

The map on this page shows the locations of existing and planned points of access to NAU. A total of 26 are shown on the map, including 19 existing and seven planned new locations. Of the 19 existing points of access, seven are planned for additional improvements to better accommodate walking and biking. Of the seven planned locations, six are planned FUTS trails, and one is a planned street (the fourth leg of the intersection of Milton Rd and Route 66).

All of the planned new and improved NAU access points are covered in this section in the recommendations for sidewalks, FUTS trails, and bikeways.

NAU access points



Complete street conversions

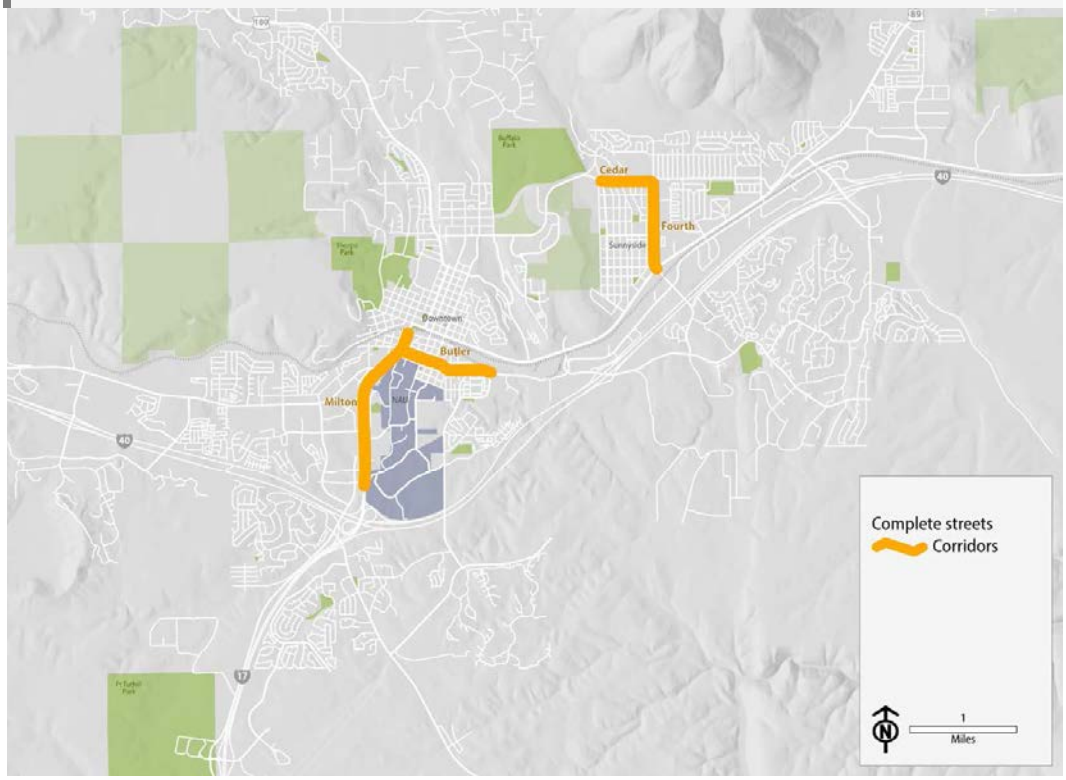
The map on the following page depicts four street corridors that can be considered for complete street conversion projects. There is typically a combination of missing infrastructure along the corridors, such as sidewalks, enhanced crossings, bikeways, and FUTS trails. Additionally, the street would benefit from other pedestrian and bicycle amenities, including median islands, parkway strips, landscaping and streetscaping, and accessibility improvements.

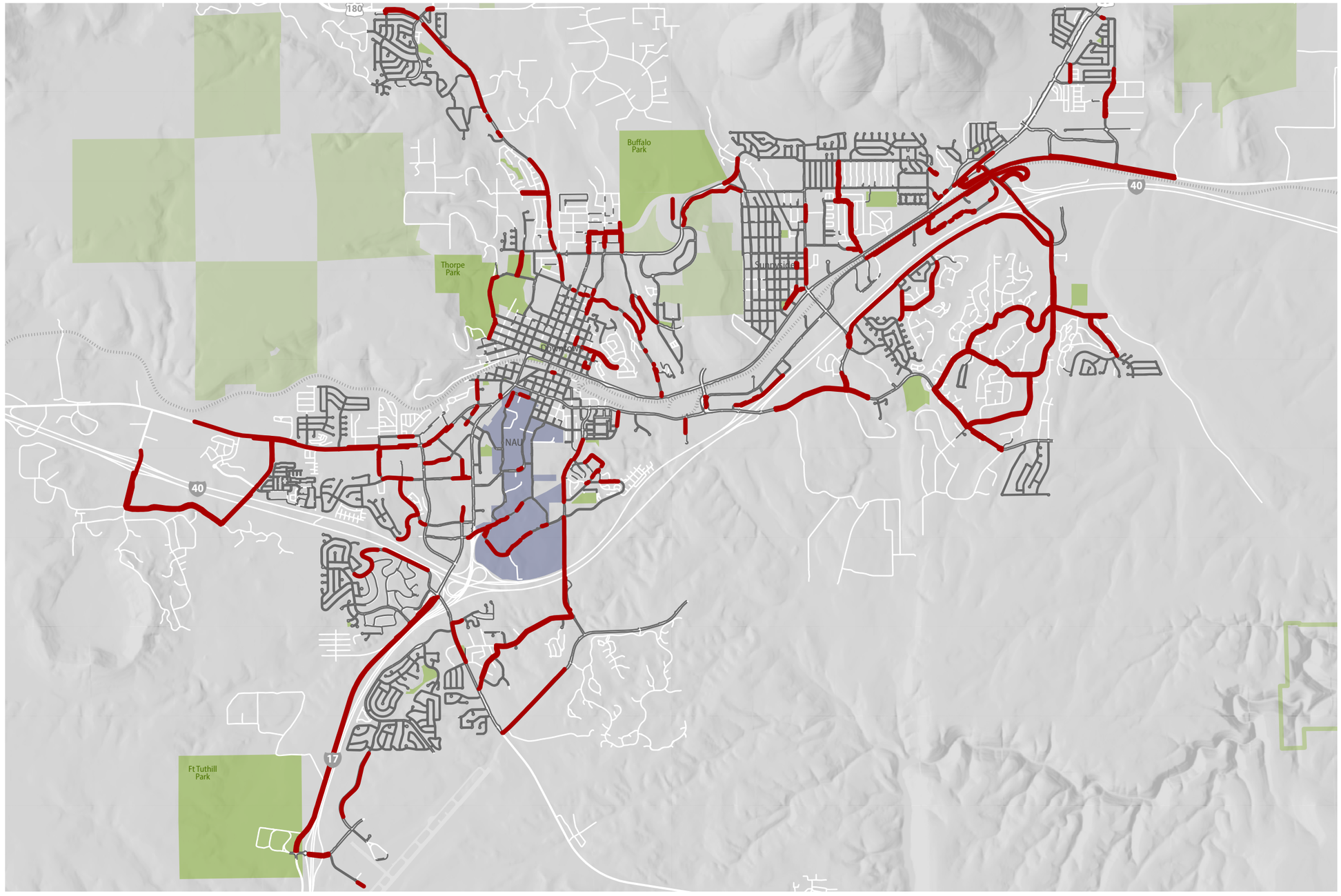
These corridors are highlighted based on several common characteristics, including significant walking and biking activity, above-average incidence of pedestrian and bicycle crashes, and

proximity to traditionally disadvantaged neighborhoods. For all of these streets, the speed and volume of traffic make it uncomfortable to walk or bike along and difficult to cross. A conversion to a complete street would alleviate the barrier effect, improve safety for all users, enhance the corridor for walking and biking, and create an amenity for the neighborhood.

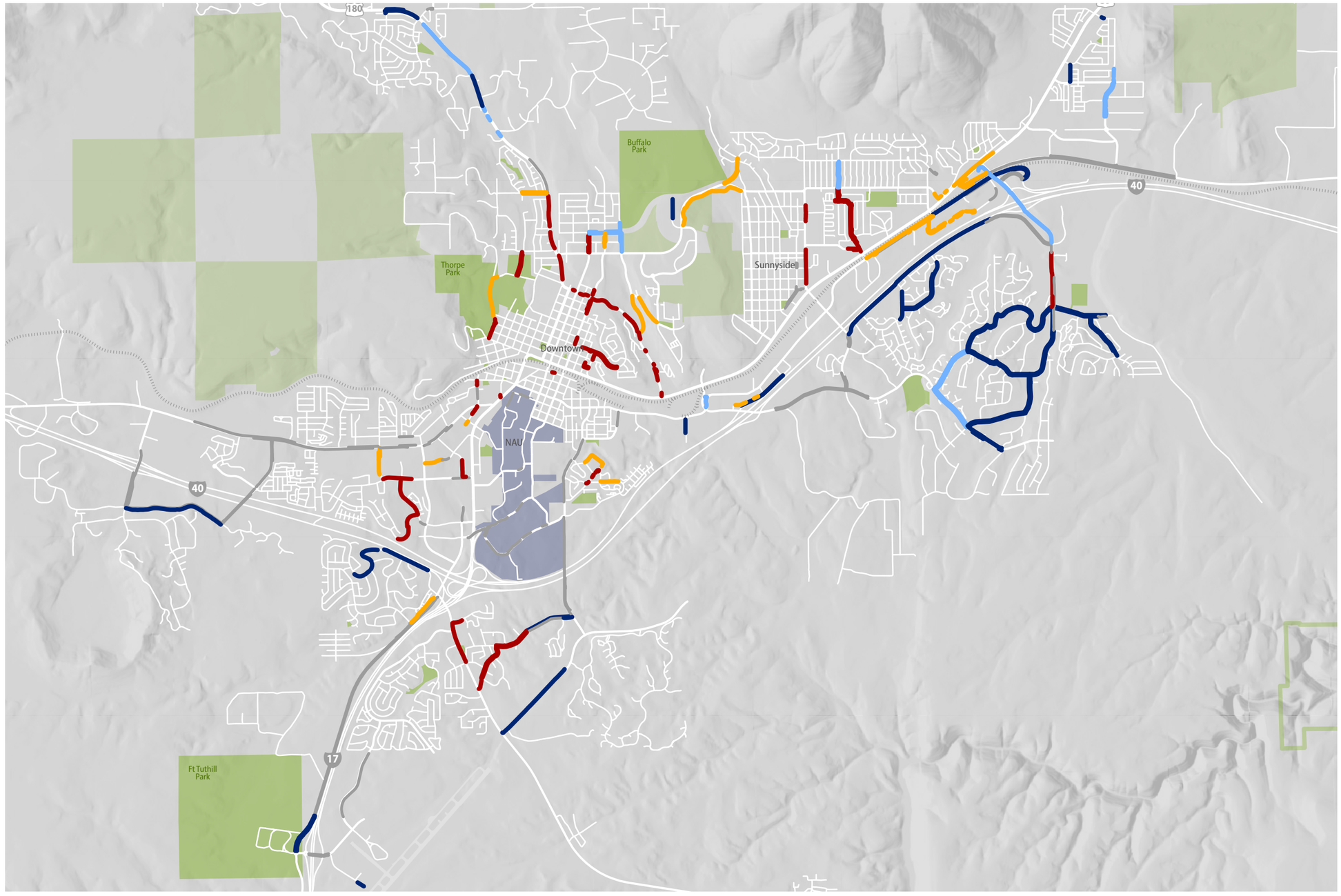
- **Butler Avenue** - Milton Rd to Sawmill Rd
- **Cedar Avenue** - West St to Fourth St.
- **Fourth Street** - Route 66 to Cedar Ave
- **Milton Road** - Forest Meadows St to Phoenix Ave

Complete street conversions





Map 8.01
Sidewalks
Existing and missing

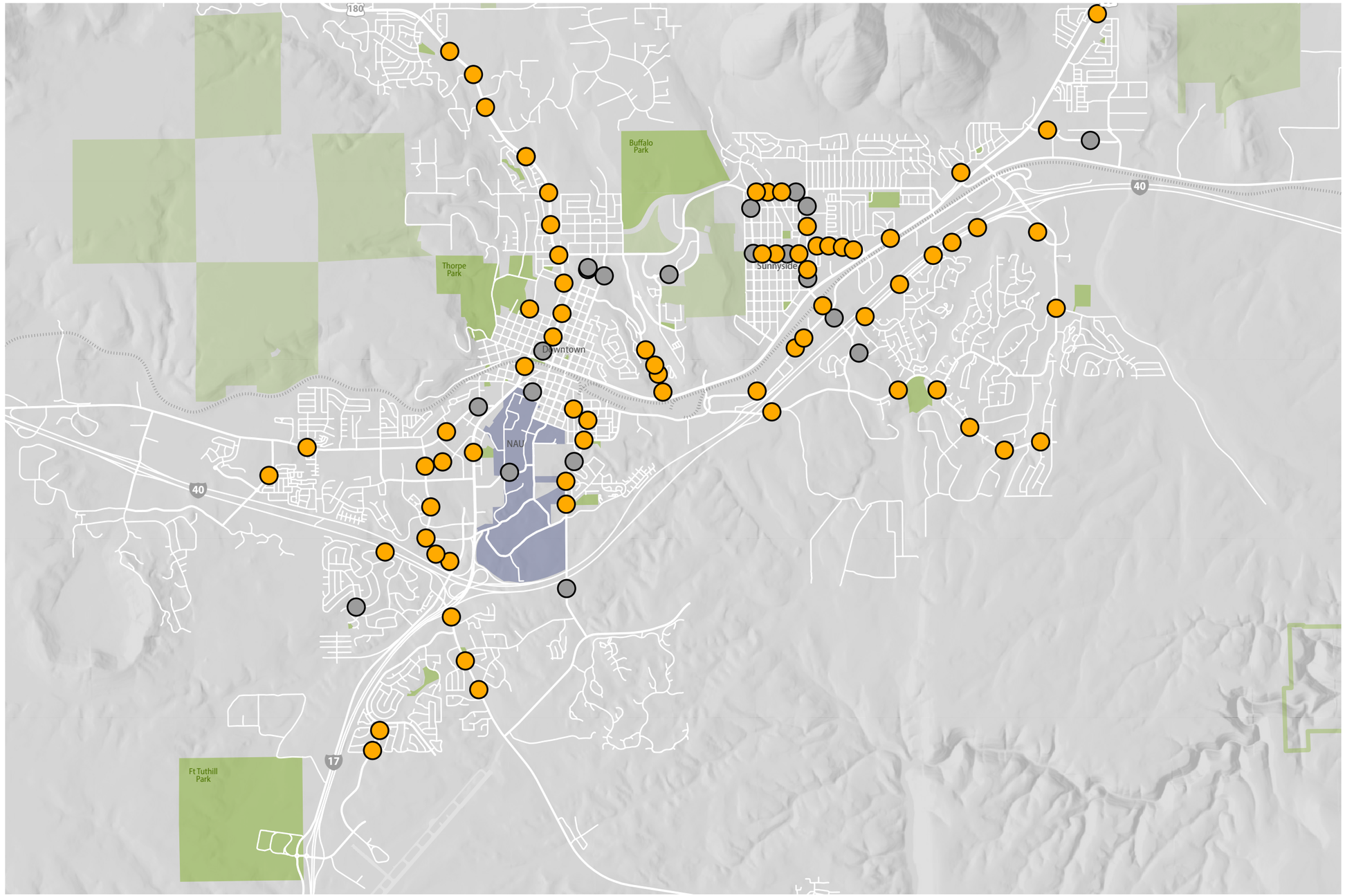


Map 8.02
Sidewalks
Missing by priority

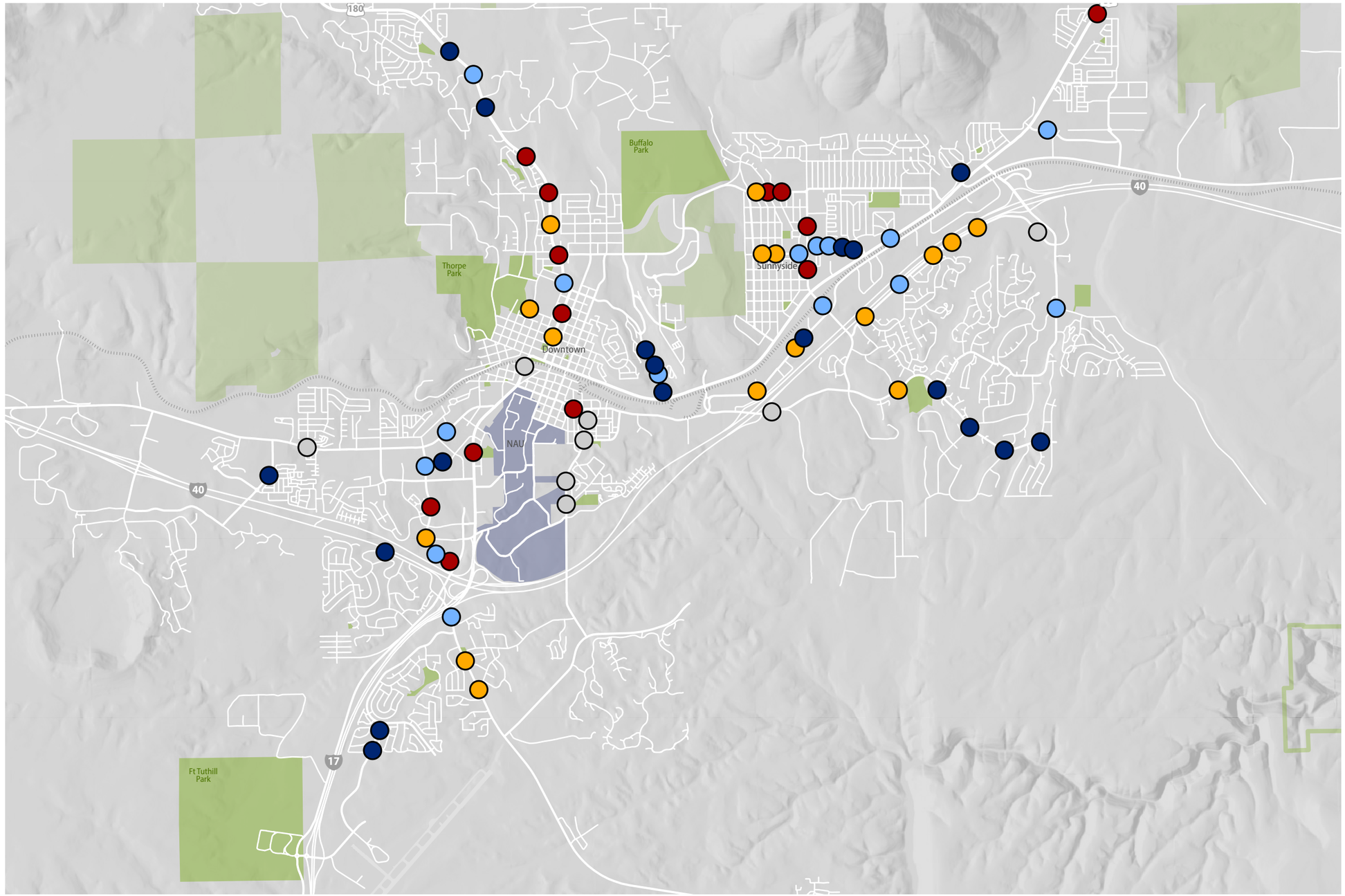
Sidewalks | by priority
- 1 First
- 2 Second
- 3 Third
- 4 Fourth
- Other project

N

1
Miles



Map 8.03
Enhanced crossings
Existing and planned

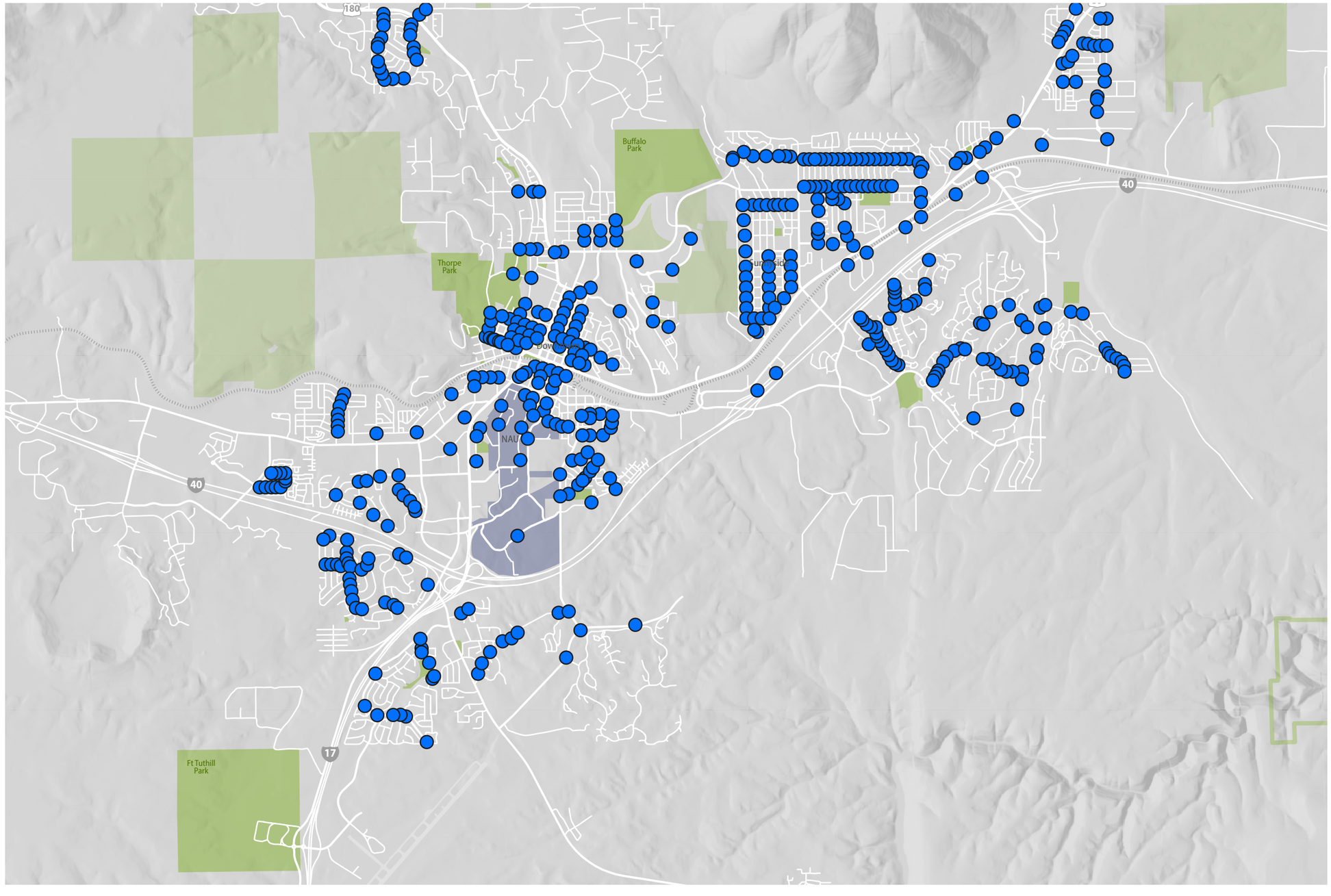


Map 8.04
Enhanced crossings
Planned by priority

Enhanced crossings | by priority
- 1 First
- 2 Second
- 3 Third
- 4 Fourth
- Other project

N

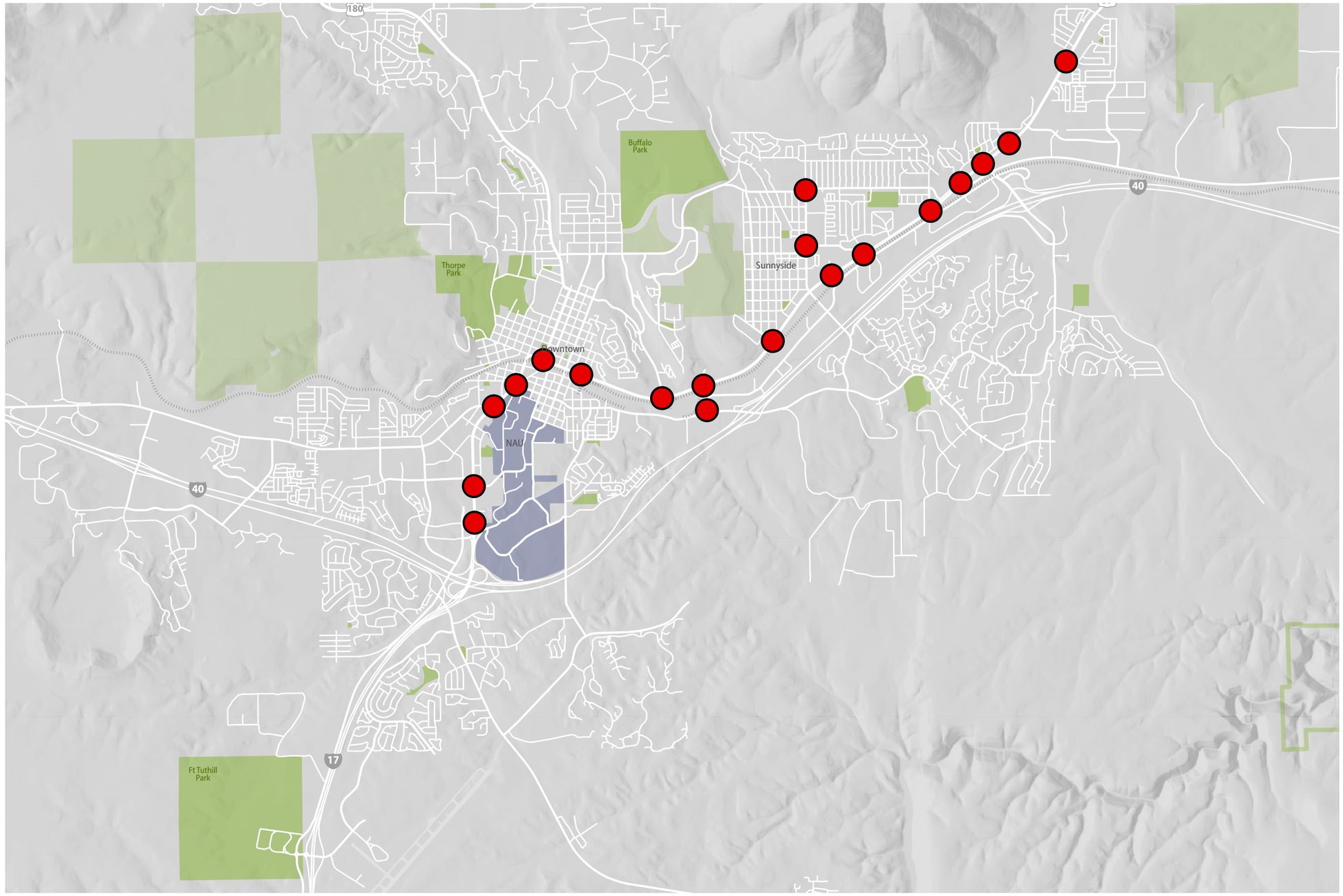
1
Miles



Map 8.05
Crossings Basic

Crossings | basic

1
Miles

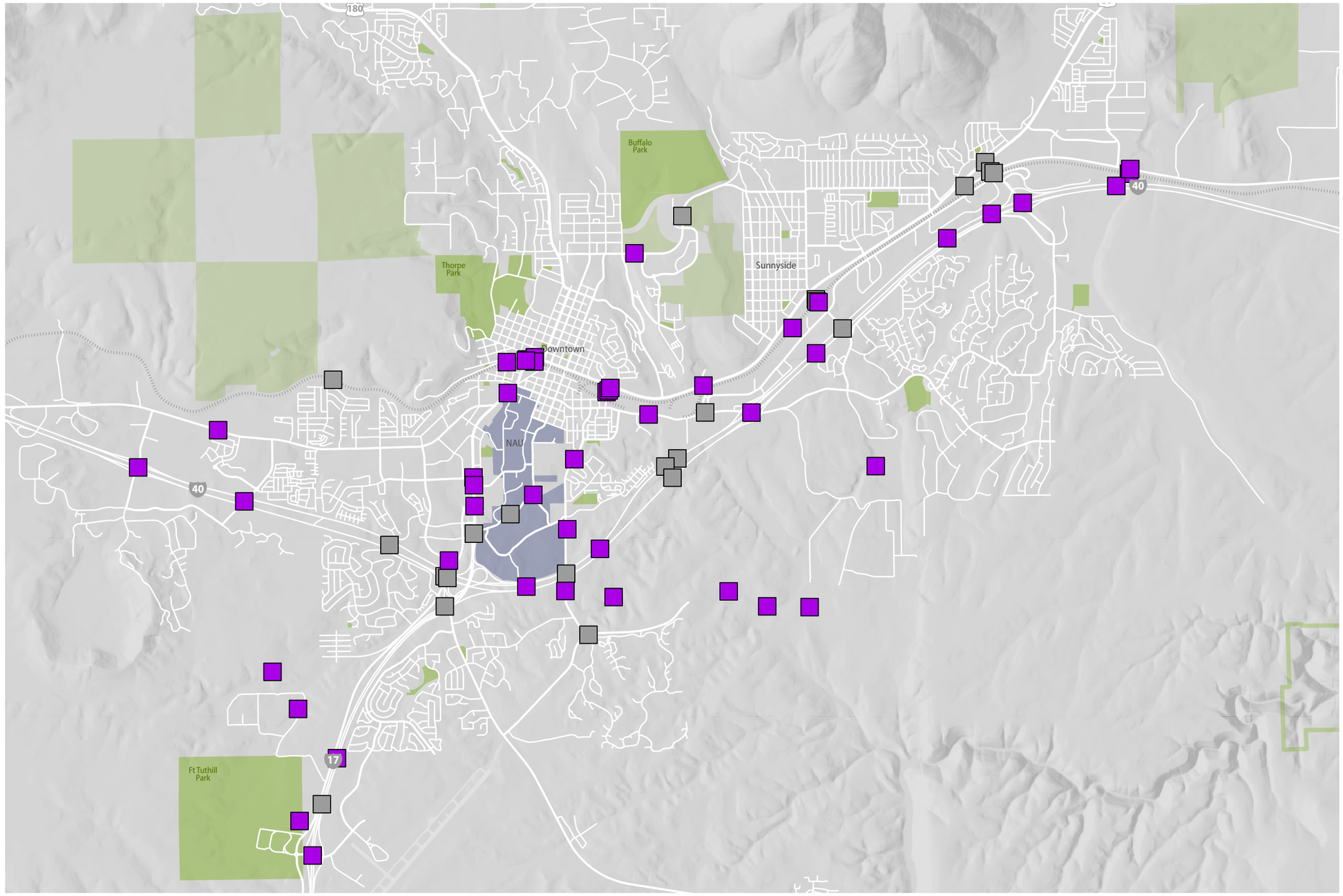


Map 8.06
Crossings Restricted

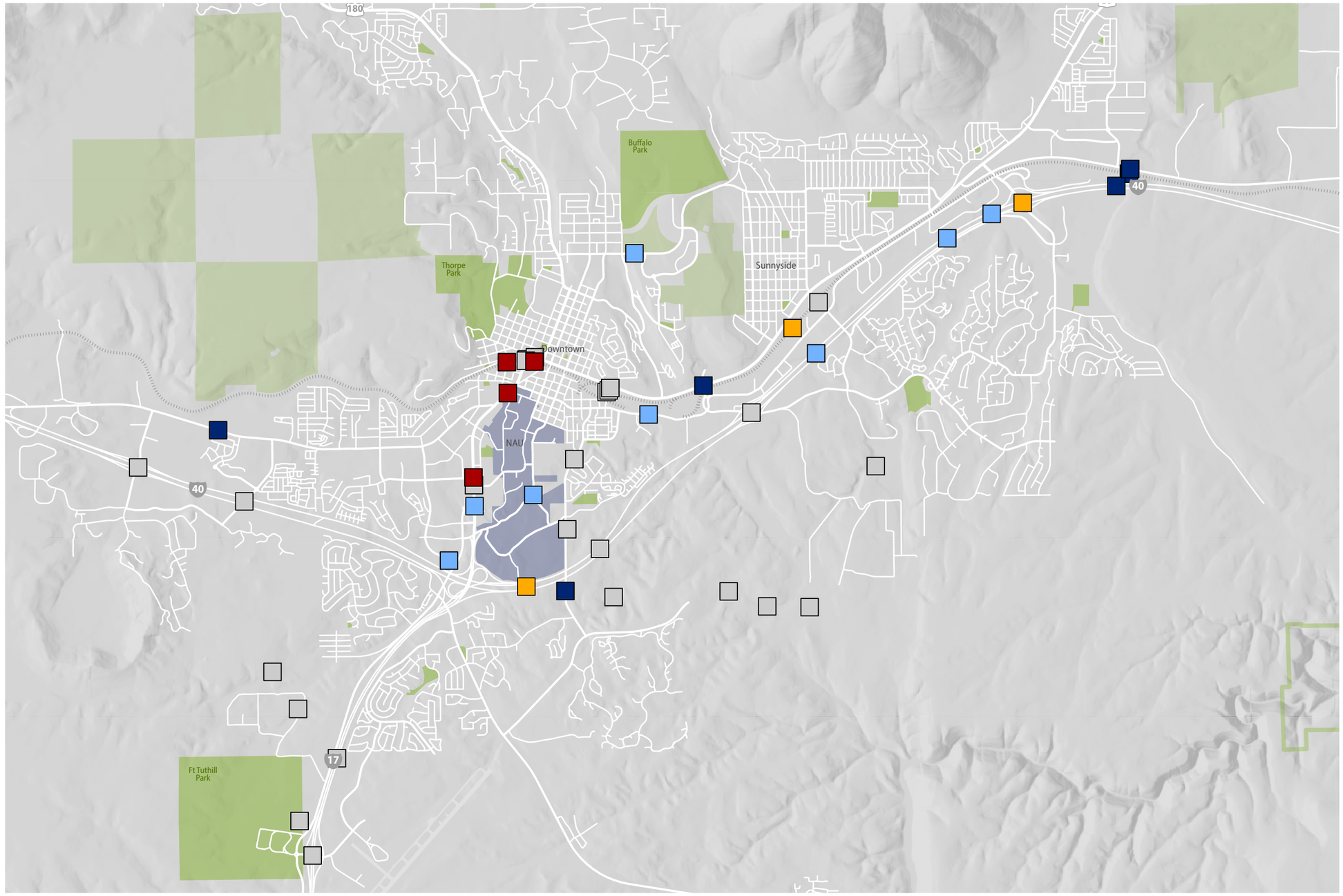
Crossings | restricted

N

1
Miles



Map 8.07
Separated crossings
Existing and planned

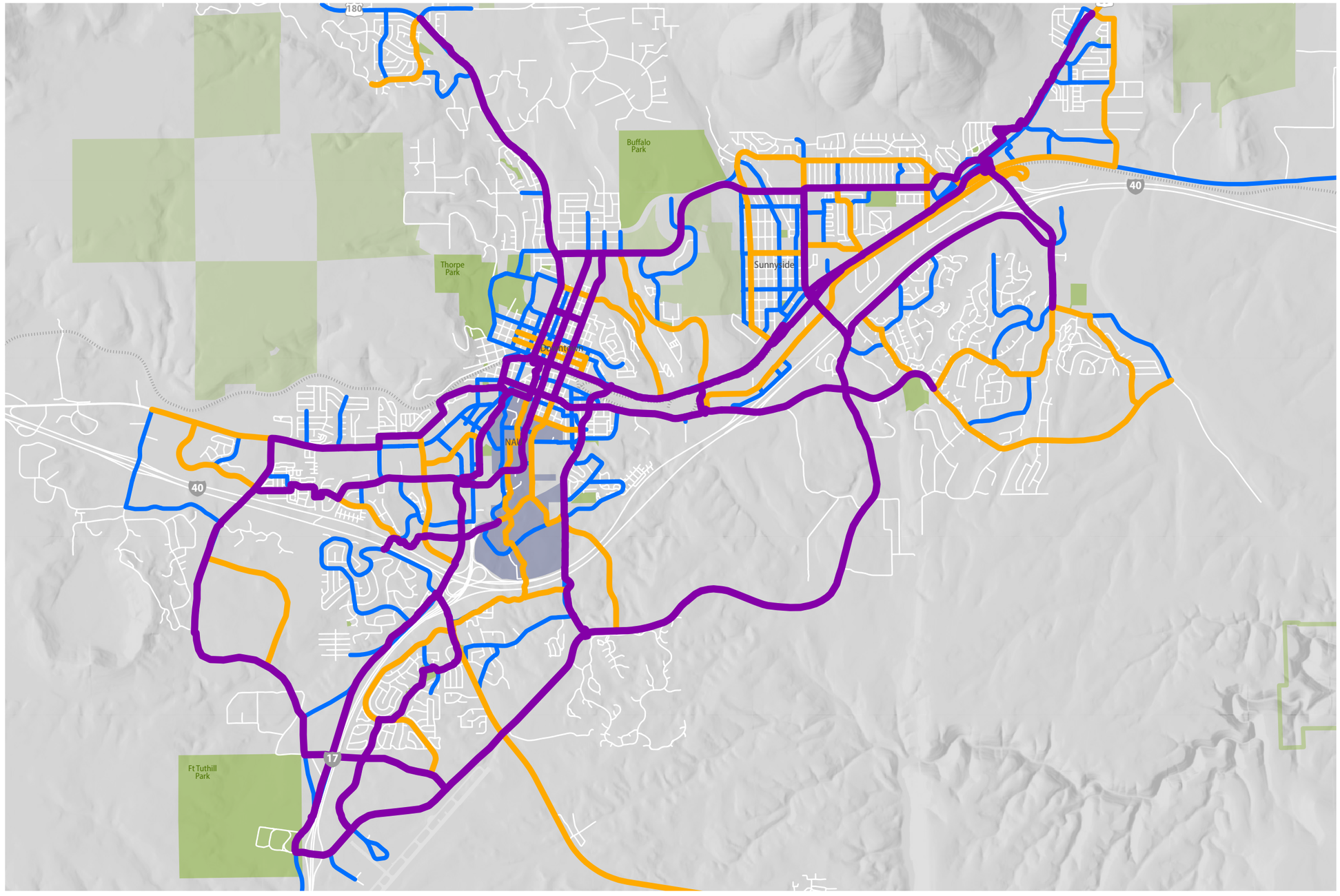


Map 8.08
Separated crossings Planned by priority

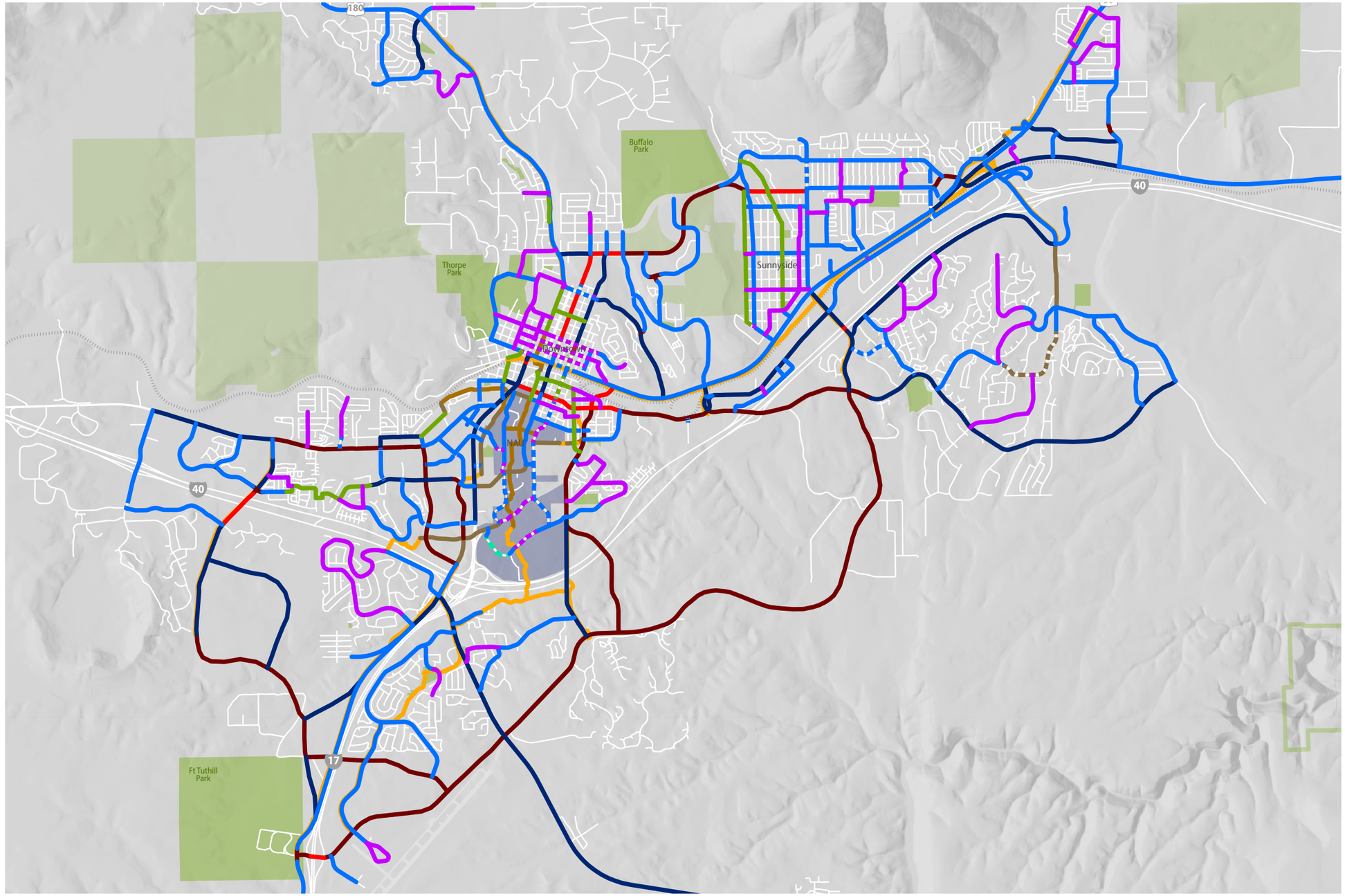
Separated crossings | by priority
- 1 First
- 2 Second
- 3 Third
- 4 Fourth
- Other project

N

1 Miles



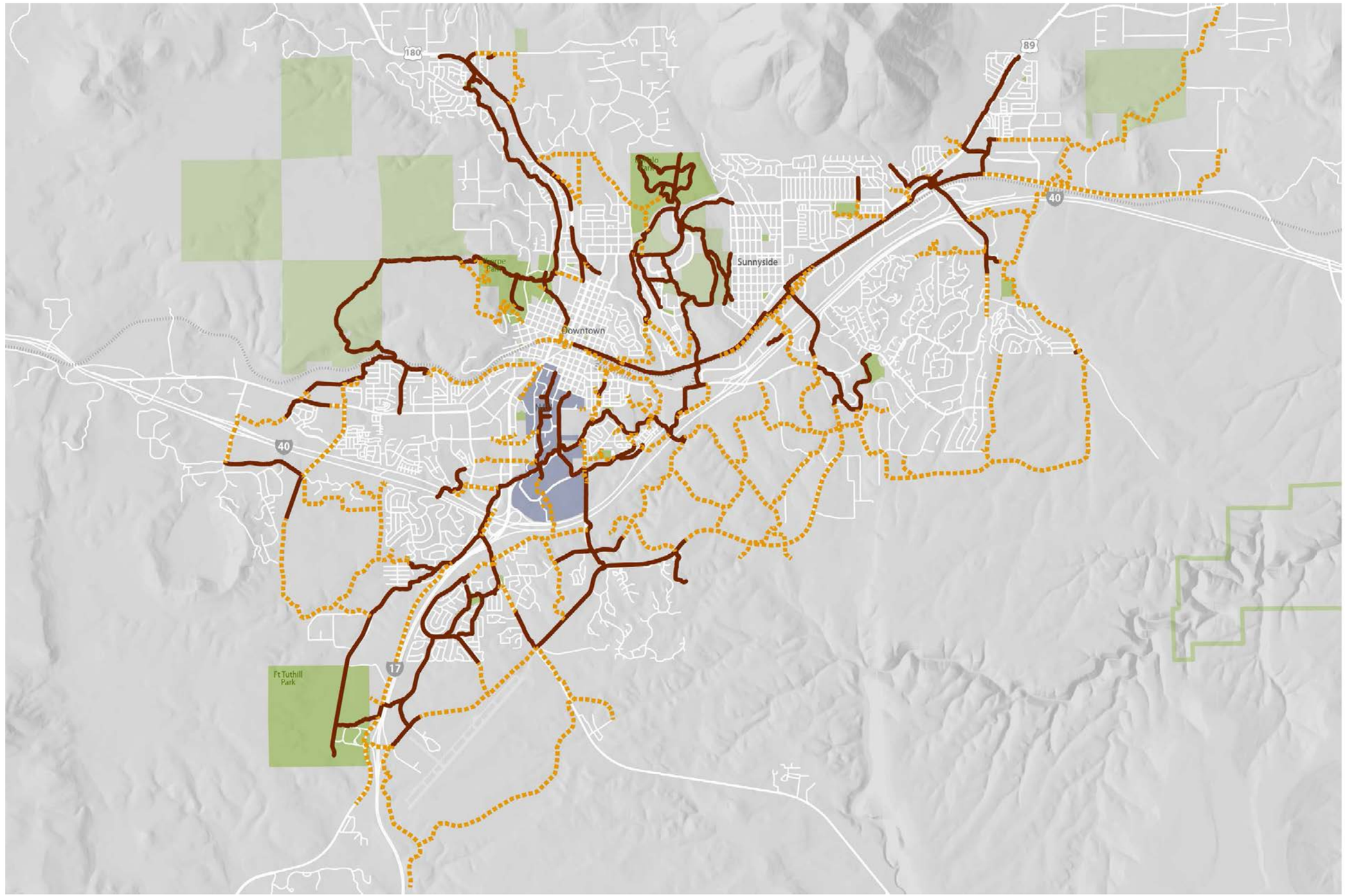
Map 8.09
Bikeways
By hierarchy



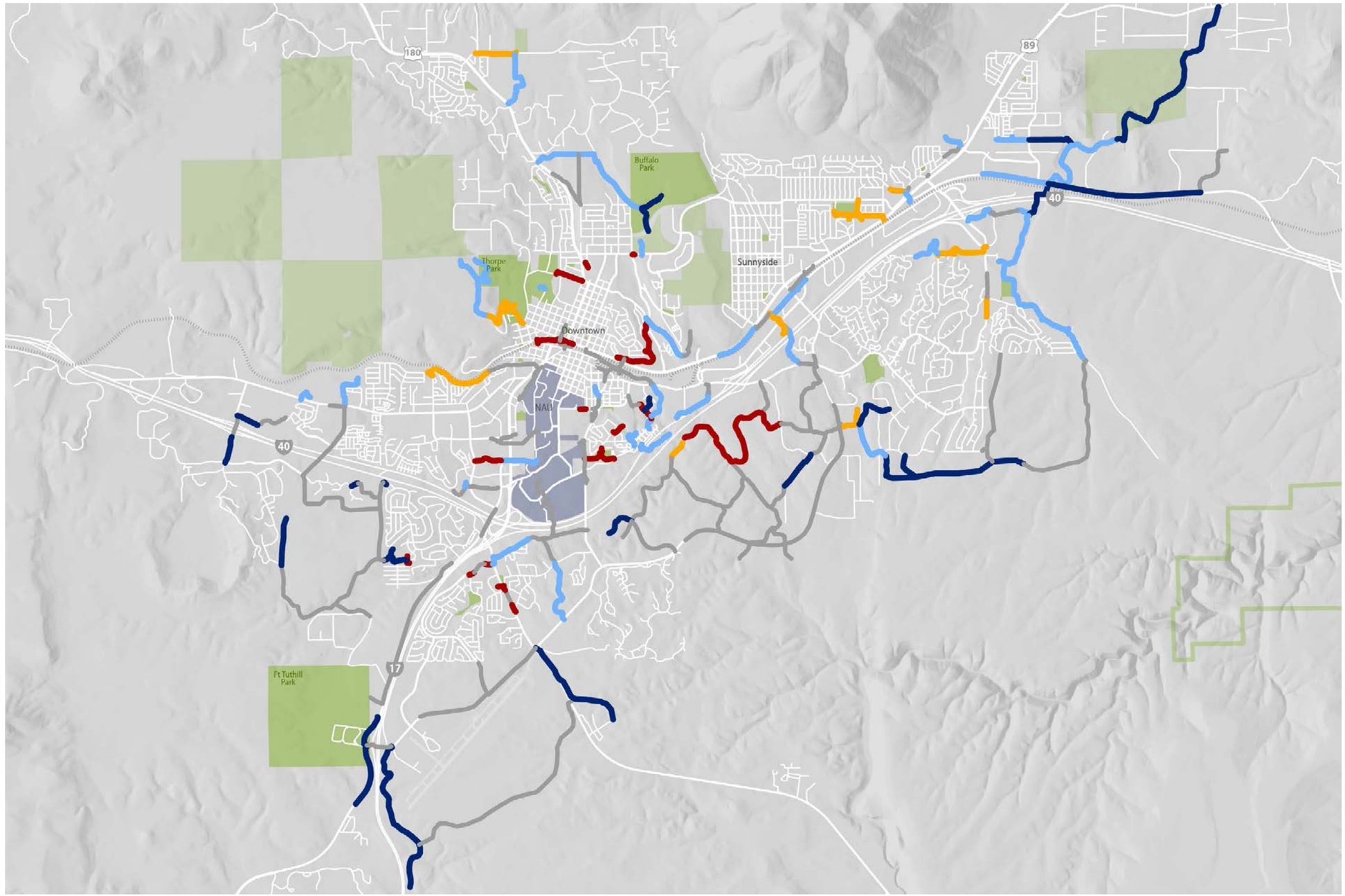
Map 8.10
Bikeways
By facility

Bikeways | facility
- Route
- Boulevard
- Shared lane markings
- SLM/bike lane
- Green SLM
- Advisory bike lanes
- Bus/bike lane
- Shoulders
- Bike lanes
- Buffered bike lanes
- Separated - vertical
- Separated - horizontal
- Cycletrack
- FUTS
- Divided FUTS
- Sidewalk

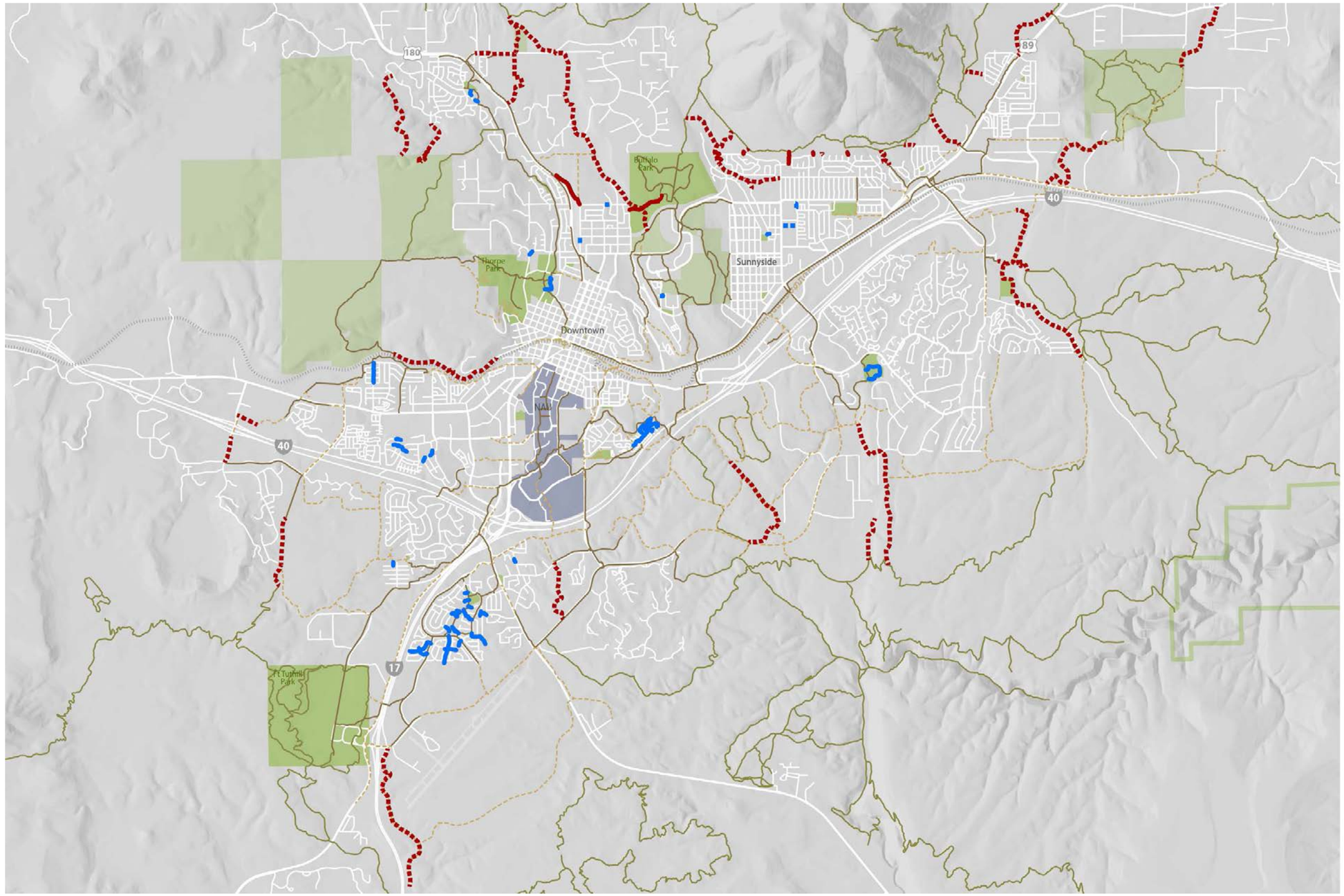
N
1
Miles



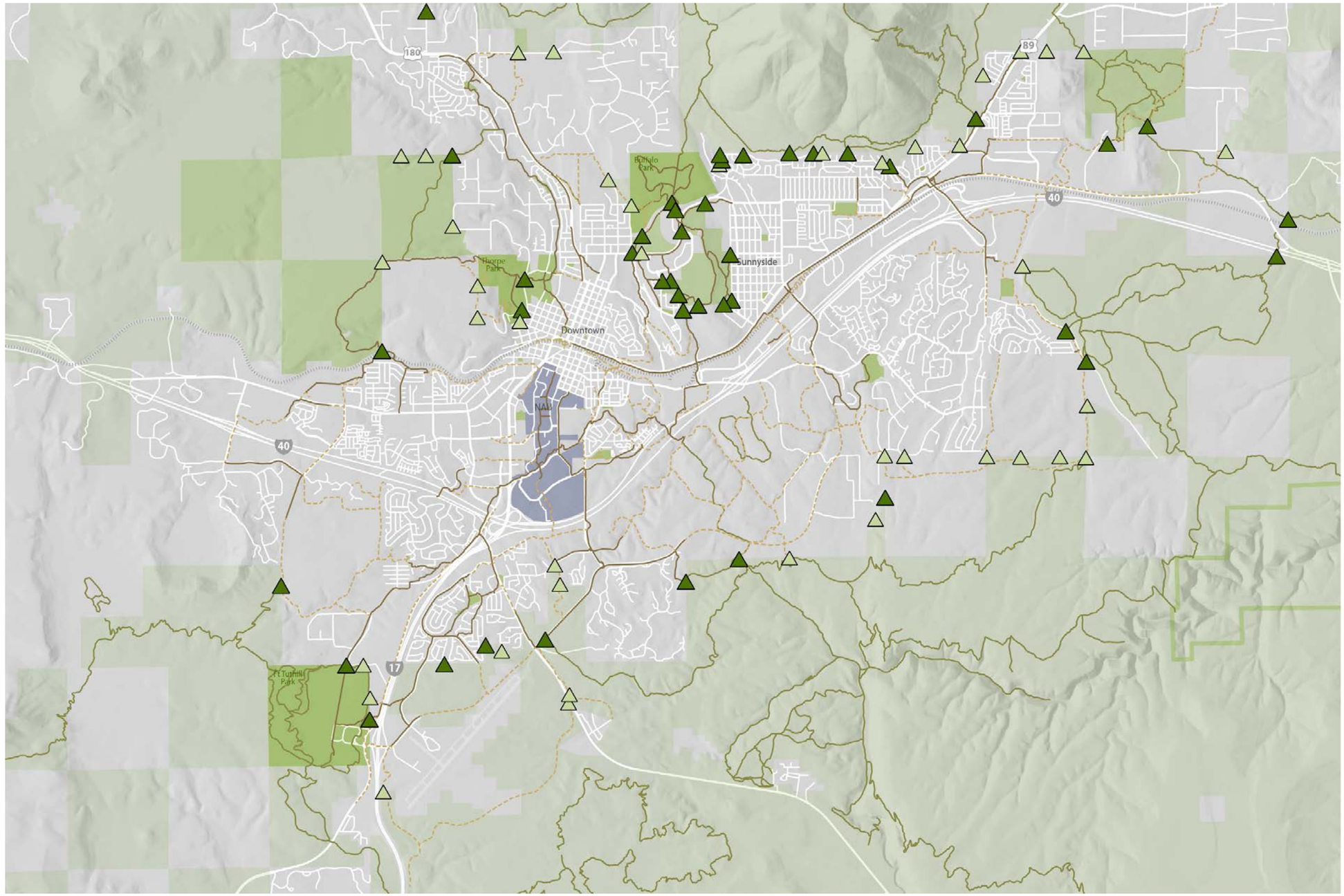
Map 8.11
FUTS trails
Existing and planned



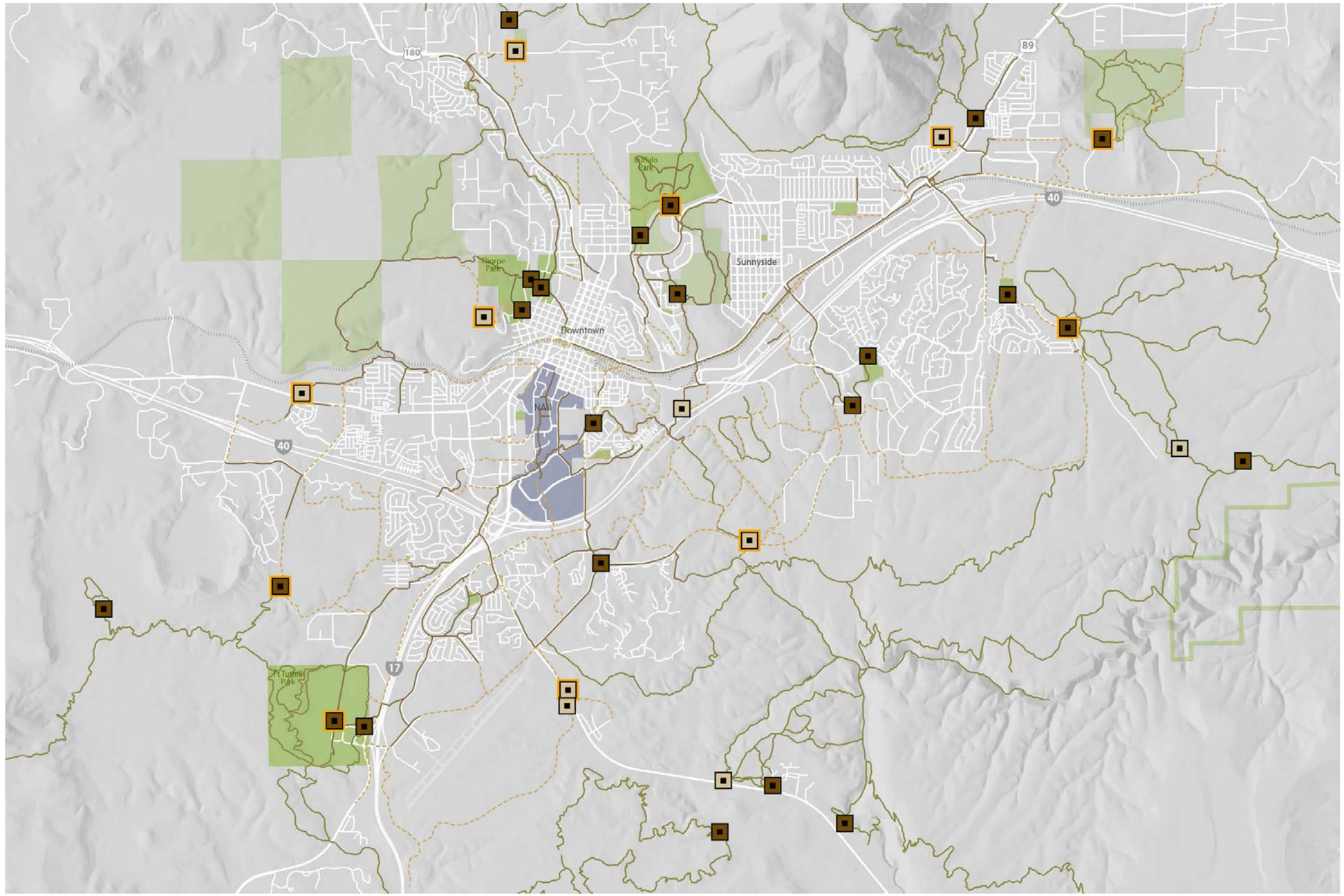
Map 8.12
FUTS trails
Planned by priority



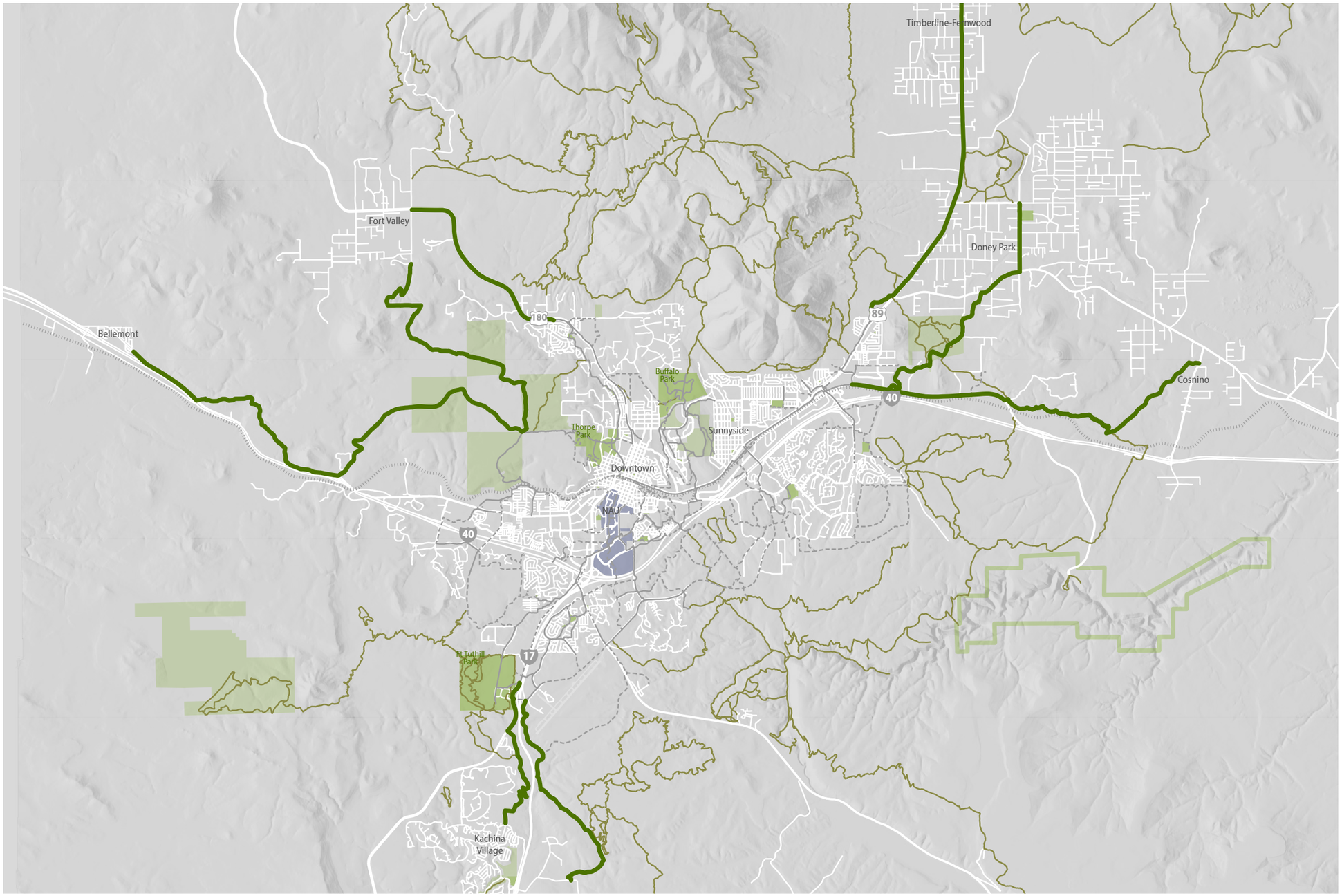
Map 8.13
Neighborhood and singletrack access trails



Map 8.14
Forest access points



Map 8.15
Trailheads and trail hubs



Map 8.16
Outlying connections

A Policies and strategies

1 Infrastructure

1.1 Implement networks for walking and biking that are continuous, attractive, safe, comprehensive, and convenient.

- Complete missing sidewalks along major streets and develop a complete pedestrian network of sidewalks, FUTS trails, walkways, and crossings.
- Implement a citywide network of low-stress bikeways.
- Expand and enhance the network of FUTS trails.

1.2 Provide frequent and comfortable crossings to eliminate barriers and avoid breaks in pedestrian and bicycle networks.

- Develop policies, guidelines, and design guidance for at-grade crossings to ensure that pedestrians and cyclists have safe and convenient crossing opportunities.
- Review intersections and other locations along minor collector and commercial local streets where basic crossing facilities such as curb ramps and crosswalk markings are missing or would be beneficial.
- Work with ADOT to identify locations for crossings on state-managed streets within Flagstaff and develop a plan for appropriate facilities.
- Review intersections where pedestrian crossings are prohibited on one or more legs for opportunities to remove the prohibitions.
- Consider additional crossings and improvements in Downtown and Southside, including midblock crossings and additional marked crosswalks.

1.3 Ensure the availability of functional bike parking.

- Maintain an inventory of existing bicycle parking, and conduct an analysis based on the inventory to identify where additional bike parking is needed.
- Review current provisions for bike parking in the Zoning Code for minimum applicability thresholds, number of spaces required, and incentives for enhanced bicycle parking.
- Develop standards and requirements for the Zoning Code for long-term bike parking for multi-family residential development and employment areas.
- Explore options for temporary or valet bike parking for events and festivals; work with other City divisions, event organizers, and civic organizations to develop incentives and requirements.
- Implement a City program to provide low-cost or no-cost bike racks to private locations and facilities where bike parking is needed.
- Evaluate current development review processes to help developers meet bicycle parking requirements and standards.
- Add bike parking clusters and corrals at suitable locations in Downtown, the Southside, and other major activity centers.

1.4 Incorporate wayfinding signage to enhance the functionality of walking and biking networks.

- Establish standards and guidelines for signage that is coordinated across pedestrian, bicycle, and FUTS networks.
- Develop and implement a comprehensive system of signage and pavement markings as an integral part of the bikeway network.

- Install additional wayfinding signs for the FUTS system, including additional map kiosks at key locations.

1.5 Work with the City's transportation partners to unify walking and biking networks.

- Integrate walking and biking connections with the transit network.
- Coordinate with Northern Arizona University to complete the pedestrian and bicycle network to and through the NAU campus, including new or enhanced points of non-motorized access between the community and campus.
- Participate in the planning processes of other road-managing agencies, and include them as stakeholders in City plans, to support coordination across jurisdictions.

1.6 Connect walking and biking facilities with regional trails and open space to ensure convenient access from all Flagstaff neighborhoods.

- Plan and implement a system of greenways, parks, and open space in conjunction with the FUTS network.
- Collaborate with the Flagstaff Trails Initiative and other trail managing agencies on regional trails planning and implementation.
- Work with regional partners to implement a plan for trail connectivity and other non-motorized points of access between Flagstaff neighborhoods and the national forest and regional open space.
- Plan for direct connectivity and integration between pedestrian, bicycle, and FUTS networks and regional recreational trails, including the Arizona National Scenic Trail and the Flagstaff Loop Trail.
- Develop a system of trailheads and trail hubs to improve access and enhance connectivity between regional trails and the FUTS system.
- Work with Coconino County and the Forest Service to plan for non-motorized commuter access from outlying communities to Flagstaff.

1.7 Identify and take advantage of opportunities to fund and implement the pedestrian and bicycle network.

- Develop 5-year and 20-year plans for construction of pedestrian and bicycle projects for inclusion in the City's capital improvements program.
- Develop guidelines and standards to ensure that pedestrian and bicycle accommodation is addressed in City capital projects and private development, in a fair and consistent manner.
- Find opportunities to include pedestrian and bicycle facilities in capital and street projects undertaken by other agencies, including NAU, Coconino County, and ADOT.
- Monitor grant opportunities that could be used for pedestrian and bicycle projects.
- Explore options to make project delivery more efficient and faster, including alternative project delivery methods, especially for small projects.

2 Maintenance and operations

2.1 Maintain walking and biking infrastructure in a state of good repair.

- Keep up-to-date inventories of facilities and conditions, coordinate information sharing across City divisions, and establish shared priorities for maintenance so the most important facilities and concerns are addressed first.
- Ensure that maintenance budgets are adequate to keep facilities in good condition and explore additional funding sources.
- Conduct a review of peer communities and other cities for ideas, programs, and best practices for maintenance.

- Develop standards and guidelines for sustainable facilities to reduce the need for and costs of maintenance.
- Establish a regular maintenance schedule and program for walking and biking facilities, based on minimum standards or targets for condition.
- Review current maintenance practices to find efficiencies and implement best practices.

2.2 Clear ice and snow from pedestrian and bicycle facilities to keep them usable through the winter months.

- Adopt snow clearing policies and practices for bike lanes, sidewalks, and FUTS trails.
- Establish a hierarchy of routes for sidewalks, bikeways, and FUTS trails to help prioritize snow clearing.
- Provide detailed information, schedules, and maps for snow clearing so the public knows what to expect during snow events.
- Conduct a review of our peers and other communities for ideas, programs, and best practices for snow clearing.
- Consider a range of options for compliance and enforcement of private snow removal on sidewalks.
- Include considerations for snow clearing and snow storage in the design and construction of facilities.

2.3 Keep walking and biking facilities free of blockages and debris.

- Provide and promote convenient ways for the public to map and report obstructions and other problems to the City, including the Citizen Tracker function on the City's website.
- Work with the Flagstaff Police Department on reporting and enforcement of parked vehicles on sidewalks, bike lanes, and FUTS trails.
- Review street sweeping schedules and practices for efficiencies and effectiveness, particularly in the winter and spring, to keep sidewalks and bike lanes clear of cinders.
- Support volunteer and neighborhood efforts that could be expanded to include sidewalk sweeping and vegetation removal.
- Expand the public outreach and education campaign to increase public awareness and encourage the public to keep sidewalks, bike lanes, and FUTS trails clear of blockages, including trash and recycling bins and bulky trash.

2.4 Limit the impact of closures on walking and biking facilities.

- Review the City's procedures for temporary traffic control plans to ensure that sidewalks, bike lanes, and FUTS trails are included and addressed.
- Develop guidelines and standards for closures to minimize the impacts of closures on pedestrians and bicyclists and to ensure they are accommodated when closures occur.
- Consider a fee structure for closures to reflect the cost to the community and to encourage better planning for closures.
- Establish procedures for consistent and systematic notification of closures to the community.

2.5 Improve and enhance existing pedestrian and bicycle facilities to meet basic levels of functionality and accessibility.

- Create an inventory of potential improvements and enhancements for walking and biking, including those that support accessibility and universal design, and prioritize those that are most needed.
- Include funding for improvements and enhancements as part of the capital plan and budget for pedestrian and bicycle facilities.
- Identify opportunities to address improvements and enhancements as part of other projects, including capital projects and private development.

- Maintain a list of improvements and enhancements to the FUTS; prioritize the list and find ways to fund and implement.

3 Support and encouragement

3.1 Use information and maps to promote, encourage, and make it easier to walk and bike.

- Update the City's web page to include useful and current information on walking, biking, and trails.
- Use MoveMeFLG (movemeflg.com) as a central clearing house for information on walking, biking, transit, and other sustainable travel options.
- Create a dedicated social media presence for active transportation that regularly communicates with the public.
- Continue publication of the Flagstaff Urban Trails and Bikeways Map in both printed and digital form.
- Explore the use of online maps with interactive route planning functionality to help users find the best way to walk or bike to their destination.
- Provide private map services with current and accurate walking and biking information, including OpenStreetMap, Google maps, and Apple maps.
- Create walking maps for Downtown, Southside, and other neighborhoods, or for specific themes like public art, historic sites, or bird watching, to encourage residents and visitors to explore the community.
- Integrate travel information across a variety of modes – walking, biking, transit, bikeshare, micromobility, ride hailing services, car share, vanpools, paratransit – to support flexibility and options for mobility.

3.2 Promote events and activities that support walking and biking.

- Promote Bike to Work Week and Flagstaff Walks! as signature Flagstaff events for walking and biking.
- Work with community partners to organize additional walking and biking events, such as theme walks, community bike rides, or group hikes.
- Create a walking calendar as a centralized listing of all the organized walking events around Flagstaff.
- Organize cyclovias, open streets, slow streets, and other events that temporarily close street segments and corridors to vehicles and open them to walking, biking, and other activities.
- Seek and publicize national recognition for Flagstaff as a walkable and bikeable community.

3.3 Work towards equity and inclusion in pedestrian and bicycle programs.

- Conduct equity analyses of infrastructure plans to ensure equitable distribution of facilities and to verify that low income and underserved neighborhoods are covered.
- Develop working relationships with community and neighborhood groups to encourage more public involvement in transportation projects and planning processes.
- Establish formal equity guidelines and practices to foster better inclusion in our planning processes.
- Engage with relevant boards and commissions, including the City's Diversity Awareness Commission and Commission on Inclusion and Adaptive Living, and MetroPlan/Mountain Line's Coordinated Mobility Council.
- Recruit women, people of color, and other under-represented groups to serve on the Pedestrian Advisory Committee, Bicycle Advisory Committee, Transportation Commission, and other transportation-related groups.

3.4 Incorporate universal access as a key component of walking and biking.

- Review the City's practices and standards for walking and biking facilities to verify that they are compliant with best practices for accessibility.

- Conduct an inventory of missing and existing curb ramps, an assessment of condition and ADA compliance, estimated costs, potential funding sources, and opportunities to complete as part of other projects.
- Incorporate principles of Universal Design to create facilities that are usable by everyone regardless of age, ability, or status.
- Improve accessibility of FUTS trails for all users, and provide better information to the public about accessibility and trail conditions.

3.5 Pursue other programs and facilities that are supportive of walking and biking.

- Implement a citywide bike share program.
- Work with local groups to establish a Flagstaff community bicycle collective.
- Explore space and programming for bike stations and mobility hubs in future public projects, including the Downtown Connection Center, parking garages, and other public facilities.
- Support the use of bikes, e-bikes, and other micromobility devices for more of the community to enhance mobility options through creative programs and potential financial incentives.

3.6 Develop beneficial relationships with our community partners to promote walking and biking.

- Coordinate with the Convention and Visitor's Bureau to produce useful information on walking, biking, and trails to share with visitors.
- Work with the City's business retention and attraction specialists to promote walking, biking, and trails as community assets for business retention and attraction.
- Coordinate efforts to promote walking and biking with Northern Arizona University.
- Stay engaged with a broad range of stakeholder groups and individuals, including advocacy groups, public health professionals, neighborhood associations, healthcare providers, wellness coordinators, and bike and outdoor shops.
- Support local advocacy groups for walking and biking.

3.7 Explore ways to grow City staff resources for active transportation.

- Add new program staff for walking and biking.
- Bolster staff resources using interns, student projects, and AmeriCorps VISTA workers.
- Find ways to share the workload with other divisions, programs, and staff where work programs and missions overlap.

4 Safety

4.1 Establish comprehensive education and safety programs for pedestrians, bicyclists, and motorists.

- Organize an ongoing schedule of safety and education classes.
- Recruit community members to become League Certified Instructors (LCI) for bicycle safety, including individuals from the Flagstaff Police Department, NAU, and the Pedestrian Advisory Committee, the Bicycle Advisory Committee, and Transportation Commission.
- Expand the Bicycle Diversionary Class program to provide an education alternative for bicyclists who receive traffic citations.
- Use ongoing safety campaigns to disseminate pedestrian and bicycle safety information.

- Explore options to help educate motorists on safe and courteous driving practices around pedestrians and bicyclists.

4.2 Adopt a comprehensive transportation safety action plan and strategy with the explicit intent and goal to eliminate traffic fatalities and serious injuries.

- Establish a City or regional safety panel which meets regularly to share and review transportation safety information, with representation from a variety of stakeholders, including law enforcement, transportation planning, engineering, and public works, as well as regional partners such as Mountain Line, NAU, ADOT, and MetroPlan.
- Conduct roadway safety audits or assessments at locations identified as having high volumes or high rates of crashes.
- Collect before-and-after counts and crash data for major transportation projects to assess their impact and better understand the factors that affect pedestrian and bicycle crashes.

4.3 Re-establish a community-wide Safe Routes to School (SRTS) program.

- Work with FUSD and charter schools to develop detailed inventories of walking, biking, and transit opportunities in the vicinity of school campuses with the goal of creating safe to school routes and maps.
- Partner with FUSD on improvement projects using Adjacent Ways and other available funding sources.
- Team with the Coconino County Injury Prevention program to identify ongoing sources of funding for an SRTS coordinator and program.
- Develop a toolkit of options for schools to address drop-off and pick-up traffic that focuses on walking, biking, transit, school buses, carpooling, and other programmatic solutions.
- Engage school bicycle and mountain bike clubs to promote education and encouragement.

4.4 Work with the Flagstaff Police Department to advance enforcement efforts that improve safety for pedestrians and bicyclists.

- Support additional resources needed to re-establish a bicycle patrol within the Flagstaff Police Department.
- Conduct regular targeted enforcement efforts; work with the Flagstaff Police Department to identify the most serious and impactful offenses to target, and include an educational component to maximize the effectiveness.
- Hold in-service pedestrian and bicycle training for officers to ensure they are well-versed in pedestrian and bicycle laws and safe behaviors.

4.5 Verify that walking and biking facilities allow and encourage safe behavior for all users.

- Discourage bicycling on sidewalks through better infrastructure and education.
- Promote user courtesy on FUTS trails via public outreach and education.
- Address perceived safety concerns along FUTS trails with better design and information.
- Encourage bicycle helmet use through education and enforcement.
- Work with law enforcement to reduce the incidence of bike theft through convenient bicycle registration and better bicycle parking and storage.

5 Transportation and land use planning

5.1 Use Travel Demand Management (TDM) as a guiding principle for transportation and land use planning.

- Develop a plan for TDM that includes a broad list of potential strategies and an assessment of how they might be implemented.
- Work with Mountain Line, NAU, the Downtown Business Alliance (DBA,) and other community partners to develop and implement TDM strategies.
- Consider a process that allows a developer to choose from a menu of TDM strategies to offset or mitigate traffic impacts, including adding or enhancing pedestrian and bicycle facilities, as an alternative to building road capacity projects.
- Explore ways to manage the demand for parking and mitigate its impacts.

5.2 Establish a "complete transportation" process for all City transportation plans and projects that incorporates broad community objectives.

- Expand considerations for walking, biking, and transit in transportation impact analysis (TIA) and traffic modeling.
- Follow principles of context-sensitive solutions and complete transportation in all transportation plans and projects.
- Adopt and implement a formal Complete Streets policy.

5.3 Review current transportation-related standards, guidelines, and processes to identify opportunities to implement this plan and better support walking and biking.

- Conduct a comprehensive review of the Zoning Code and Engineering Standards for provisions that affect walking and biking, and develop recommendations for revisions.
- Review street and intersection standards to ensure that street design emphasizes safety and comfort for all users.
- Review other transportation processes and permits for their impact on walking and biking.
- Consider corridors with excess vehicle capacity for possible implementation of road diets.

5.4 Adopt design guidelines that reflect best practices for streets, intersections, pedestrian and bicycle facilities, and trails.

- Develop detailed design guidelines for walking and biking facilities based on best practices, innovative facilities, and reference guides from national sources such as AASHTO, PROWAG, and NACTO.
- Revise the Zoning Code and Engineering Standards to incorporate new standards where appropriate.
- Provide training and education on best practices for pedestrian and bicycle facilities for staff, design professionals, policy makers, and the community.

5.5 Incorporate principles of placemaking in street design and pedestrian and bicycle infrastructure.

- Incorporate public art and decorative design elements in transportation facilities.
- Integrate Great Streets principles in pedestrian, bicycle, street, intersection, and corridor projects and plans.
- Protect and celebrate cultural, historic, and natural resources where they exist along walking and bicycling networks.
- Find locations for and install benches, seating areas, civic spaces, and gathering areas along walking and biking networks.

6 Evaluation

6.1 Collect and analyze data related to walking and biking.

- Establish a regular program of pedestrian and bicycle counts, including counts on FUTS trails.
- Explore other sources for information on walking and biking patterns, including acquisition of third-party data.
- Produce an annual report for pedestrian and bicycle crash data.
- Collect and analyze mode share data to assess the health of walking and biking.
- Support MetroPlan's periodic Trip Diary Survey and other data collection efforts regarding travel patterns and mode share.

6.2 Provide opportunities for community engagement and feedback.

- Keep the City Council, boards and commissions, and committees informed and actively engaged in walking, biking, and trail issues.
- Conduct regular, periodic surveys on walking and biking through the Flagstaff Community Forum, including annual user surveys for walking, biking, and FUTS.
- Facilitate convenient methods for public reporting of walking and bicycling concerns.

6.3 Conduct regular assessments of walking and biking conditions.

- Use pedestrian, bicycle, intersection, and crossing comfort indices to help assess the pedestrian and bicycle environment.
- Use feedback from national programs like the Walk Friendly Community and Bicycle Friendly Community programs to better understand where improvement is needed.
- Conduct regular neighborhood walking, biking, and accessibility audits as a community-based tool for evaluation and education.
- Conduct periodic reviews to assess the progress made on implementation of this ATMP, and report the results to the public, stakeholders, boards and commissions, committees, and the City Council.

B Common acronyms

- AASHTO American Assn of State Highway Transportation Officials
- ACS American Community Survey
- ADA Americans with Disabilities Act
- ADAAG Americans with Disabilities Act Accessibility Guidelines
- ADOT Arizona Department of Transportation
- ADT Average daily traffic
- APS Accessible pedestrian signals
- ARS Arizona Revised Statutes
- ATMP Active Transportation Master Plan
- BAC Bicycle Advisory Committee
- LBI Lead bicycle interval
- CIP Capital Improvement Program
- CSS Context sensitive solutions
- CVB Convention and Visitor's Bureau
- DBA Downtown Business Alliance
- FHWA Federal Highway Administration
- FMPO Flagstaff Metropolitan Planning Organization (now MetroPlan)
- FTA Federal Transit Administration
- FUTS Flagstaff Urban Trails System
- GHG Greenhouse gases
- IIJA Infrastructure Investment and Jobs Act
- LAB League of American Bicyclists
- LCI League Certified Instructor
- LOS Level of service
- LPI Lead pedestrian interval
- MOV Multiple occupant vehicle
- MUTCD Manual on Uniform Traffic Control Devices
- NACTO National Association of City Transportation Officials
- NAU Northern Arizona University
- NPS National Park Service
- PAC Pedestrian Advisory Committee
- PHB Pedestrian hybrid beacon
- PROWAG Proposed Rights-of-Way Accessibility Guidelines
- PTN Permanent transit network
- ROW Right-of-way
- RRFB Round or rectangular flashing beacon
- RRSS Road Repair and Street Safety
- SOV Single occupant vehicle
- TDM Travel Demand Management
- TIA Transportation impact analysis
- TND Traditional neighborhood design
- TOD Transit oriented development
- TWLTL Two-way left turn lane
- USFS US Forest Service
- VMT Vehicle miles traveled



The Flagstaff Carbon Neutrality Plan

An evolving framework for action

Revised December 2022

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Cover image: Flagstaff students protest for climate action in the fall of 2018. Photo credit: Jake Bacon.

The Carbon Neutrality Plan is revised annually. This is the second version, adopted on December 6, 2022.

Letter from the Flagstaff City Council

June 15, 2021

To the Flagstaff community,

Thank you. Flagstaff's climate action is rooted in the efforts and energy of the community members that hold us to the climate leadership goals we set for ourselves. Community members initiated the Climate Emergency Declaration, which is the foundation for this document. The community helped to develop the Flagstaff Carbon Neutrality Plan and will be integral in achieving Flagstaff's climate goals.

This document represents Flagstaff's hopeful, ambitious, and necessary approach to climate action. It is Flagstaff's contribution to the international effort to restore a safe climate, protect the earth's diversity of culture and life, and prioritize vulnerable communities. This Plan outlines fifteen target areas and accompanying strategies to proactively reduce emissions, build a stronger community, and prepare for coming change.

We take on this work with the knowledge that climate change will challenge Flagstaff and will negatively affect Flagstaff's vulnerable community members, including low-income families, communities of color, and the elderly. Equity and climate justice will be foundational elements of our work, to avoid harm to underserved groups and to ensure the benefits of climate action are fairly distributed.

The path to carbon neutrality will require leadership, bold action, perseverance and creativity. Each step closer to carbon neutrality offers hope for a healthy, prosperous, and equitable future for the Flagstaff community—and the world.

We invite all community members to remain involved as we work to achieve the goals of this Plan. Community voices will be needed to assist in our efforts – to create creative partnerships, to bring more residents into the conversation, to ensure we act equitably, and to help us remain accountable to our goals. Residents can receive assistance in home energy retrofits, join a neighborhood clean-up, review our greenhouse gas emissions reports, or learn how to talk to their neighbors about climate change. Find out more ways to get involved at www.flagstaff.az.gov/CNP.

In partnership,

The Flagstaff City Council



KEY TERMS

Climate terms used throughout this Plan are defined below to clarify their meaning in the context of Flagstaff's work.

The fundamentals of climate action:

- **Climate change:** A shift in long-term, average weather patterns fueled by increased greenhouse gas emissions into the atmosphere. Globally, climate change is leading to increased temperatures and instability in the atmosphere, causing extreme weather events like drought, rising sea levels, and catastrophic wildfires.
- **Greenhouse gas emissions**: Greenhouse gas (GHG) emissions include carbon dioxide, methane, nitrous oxide, and fluorinated gases that are released into the atmosphere naturally or through human activities. The increased concentration of GHG emissions in the atmosphere causes climate change. GHG emissions are often standardized and reported in metric tons of carbon dioxide equivalent (MT CO2E).
- **Carbon neutrality**: A state where an entity has achieved a net zero GHG emissions footprint. This is achieved by balancing every ton of human-caused GHG emissions produced with an equivalent amount of GHG emissions removed from the atmosphere, on an annual basis.

There are three central objectives of climate action:

- **Adaptation**: Actions that increase the ability to withstand, respond to, or cope with climate change impacts.
- **Mitigation**: Actions that decrease GHG emissions, which cause climate change.
- **Equity**: The just distribution of the benefits of climate protection and alleviation of unequal burdens created by climate change.

These terms represent growing areas of climate action:

- **Carbon dioxide removal (CDR)**: Refers to techniques and processes that remove carbon dioxide from the atmosphere.
- **Clean electricity**: Electricity generated from sources that do not produce GHG emissions.
- **Fuel switching**: Converting appliances, machines, and systems that rely on fossil fuels like natural gas, oil, or coal to another power source. This includes electrification, which is switching fuels to electricity.
- **Electric mobility**: The use of modes of transportation that are fueled by electricity instead of fossil fuels, including electric buses, electric bikes, small electric devices like scooters and hoverboards (electric micro-mobility), and electric vehicles (EVs).
- **Resilience**: The capacity of a community, business, or natural environment to prevent, withstand, respond to, and recover from a disruption.



I. TAKING ACTION

Climate change, accelerated by human-caused greenhouse gas emissions, is disrupting global weather patterns and threatening communities across the world. While climate shifts have occurred in the past, current climate change is happening at a faster rate than any recorded in history. If the increasing amount of greenhouse gases in the atmosphere is not reduced, life as we understand it will be altered irreversibly. On June 23, 2020, the Flagstaff City Council declared a climate emergency, calling on each of us to do all we can to protect the earth's diversity of culture and life. See page 153 for a copy of the Climate Emergency Declaration.

The Flagstaff Carbon Neutrality Plan (**the Plan**) establishes a vision for how Flagstaff will create a carbon-neutral future. Achieving this goal will require reducing our greenhouse gas emissions through drastic shifts in how we heat and power our buildings, travel from place to place, and manage our waste. These shifts must occur at multiple levels within our community, as well as across the state, our country, and the world. This Plan includes fifteen target areas for reducing our community's emissions, each with specific strategies to guide Flagstaff's work. This Plan replaces the 2018 Flagstaff Climate Action and Adaptation Plan (CAAP) and builds upon its goals of adaptation and equity.

Climate action can create a stronger Flagstaff and reduce the negative economic, social and environmental costs of climate change – reducing the amount of global warming will pay dividends for generations. Yet our work to reduce emissions and prepare for change isn't just about avoiding costs – it is about improving life here in Flagstaff. Climate action can have co-benefits ranging from lower home energy costs and air that's easier to breathe, to healthier forests, neighbors who can rely on each other, and more enjoyable ways to get to work.

The voice of the Flagstaff community will provide critical guidance to the City of Flagstaff as we work together to reach carbon neutrality. The path to carbon neutrality will not be easy: it will require perseverance and creativity. Yet each step closer to carbon neutrality offers hope for a healthier, safer, and more prosperous future for the Flagstaff community—and the world.

VISION FOR THE FUTURE

The Flagstaff community takes ambitious action to reduce greenhouse gas emissions and build community resilience, resulting in a higher quality of life for all residents. This transformation involves the entire community, is supported by collaborations with regional and tribal partners, provides opportunities, and centers disproportionately impacted communities in an equitable transition towards carbon neutrality.

Overarching Goals

Goal One: **Achieve carbon neutrality by 2030.**

Flagstaff will arrive at carbon neutrality, also known as net-zero community greenhouse gas emissions, by 2030. Carbon neutrality will be achieved through a combination of emissions reductions and carbon dioxide removal (CDR) initiatives. For more information on carbon neutrality, see the Approach Chapter starting on page 18.

Mitigation target: Reduce greenhouse gas emissions by 44% by 2030, from the business-as-usual emissions projection.

Flagstaff will reduce greenhouse gas emissions as much as possible: this Plan aims to reduce Flagstaff's annual community emissions by 44% compared to the business as usual (BAU) scenario - our predicted emissions if we took no climate action.

Carbon dioxide removal (CDR) target: Balance any remaining greenhouse gas emissions with carbon dioxide removal, to achieve carbon neutrality by 2030.

To achieve carbon neutrality, we will measure the emissions produced each year by the Flagstaff community on an annual basis, and then balance those emissions with an equivalent amount of carbon dioxide removal (CDR). In 2030, Flagstaff will need to remove approximately 471,000 tons of carbon dioxide from the atmosphere – equivalent to our 2030 emissions.

Goal Two: **Prepare Flagstaff's communities, systems, and resources to be more resilient to climate change impacts.**

Climate changes have already taken place in northern Arizona; natural and societal shifts will continue to occur. The Flagstaff community must begin to respond to climate change through adaptation, or preparing for change and strengthening our community's social, economic, and infrastructure systems. Adaptation actions will ensure Flagstaff is better equipped for and can thrive amidst both short-term disruptions and long-term change.

Goal Three: **Address climate change in a manner that prioritizes those most impacted and ensures the costs and benefits of climate adaptation and mitigation are equitably distributed.**

Climate change disproportionally impacts certain communities like older adults, people of color and low-income neighborhoods. As we act, we must consider how both climate change and climate action can affect people differently. The City of Flagstaff will center equity in its climate action decisions to ensure all communities in Flagstaff can benefit from a carbon neutral future.

Our Path to Carbon Neutrality

To reach carbon neutrality, we will take action in 15 target areas, grouped into four priorities:

Neighborhoods

- Community Resilience
- Equitable Systems
- Decreased Dependence on Cars
- Housing for All
- Inclusive Recreation

Energy

- Electric Mobility
- Clean Electricity
- Building Fuel Switching

Consumption

- Reduced Building Energy Use
- Sustainable Consumption
- Water Security

Commitments

- Healthy Forests and Open Spaces
- Health and Safety
- Economic Prosperity
- Carbon Dioxide Removal

TARGET AREAS AND STRATEGIES

Flagstaff will achieve carbon neutrality by taking action in the following target areas, which are detailed starting on page 47.

- Community Resilience
- Equitable Systems
- Decreased Dependence on Cars
- Housing for All
- Inclusive Recreation
- Electric Mobility
- Clean Electricity
- Building Fuel Switching
- Reduced Building Energy Use
- Sustainable Consumption
- Water Security
- Healthy Forests and Open Spaces
- Health and Safety
- Economic Prosperity
- Carbon Dioxide Removal

1. PRIORITY ONE: WE WILL STRENGTHEN OUR NEIGHBORHOODS

Community resilience

- **CR-1** Ensure all mitigation actions improve Flagstaff's ability to adapt to the future.
- **CR-2** Strengthen existing community systems to create resilience to both short-term shocks and long-term change.

Equitable systems

- **ES-1** Incorporate equity as a foundational element of every climate action the City develops and implements.
- **ES-2** Proactively engage community members on an ongoing basis.
- **ES-3** Design targeted climate policies and programs to serve disproportionately impacted communities first.
- **ES-4** Actively seek to recognize past harms, repair trust, and build deeper relationships with community members.

Decreased Dependence on Cars

- **DD-1** Encourage vibrancy, appropriate density, and attainability in existing neighborhoods, so that more residents live within walking distance of their daily needs.
- **DD-2** Create inclusive networks for walking and biking that are continuous, attractive, safe, comprehensive, and convenient for people of all ages.
- **DD-3** Encourage Flagstaff residents and visitors to walk, bike, roll and take the bus.
- **DD-4** Transform transportation policies and planning to incorporate greenhouse gas emissions analysis and reduce dependence on driving.
- **DD-5** Invest in comprehensive and equitable transit.
- **DD-6** Proactively invest to protect Flagstaff's clean air status.

Housing for All

- **HA-1** Create housing options for households at all income levels and family sizes occupied by local residents.
- **HA-2** Connect people to equitable housing solutions.
- **HA-3** Preserve affordable housing.
- **HA-4** Protect people from housing discrimination and remove housing barriers.

Inclusive Recreation

- **IR-1** Protect natural areas and ecosystem services that are most vulnerable to the impacts of increased visitation and climate change.
- **IR-2** Ensure equity, accessibility, and inclusion across all City of Flagstaff Parks and Recreation facilities, helping all members of the Flagstaff community to meet their health and wellness needs.
- **IR-3** Plan for changes to recreation, reduce emissions, and respond to the impacts of climate change on current Parks and Recreation facilities and operations.

2. PRIORITY TWO: WE WILL CLEAN OUR ENERGY SOURCES

Electric Mobility

- **EM-1** Advance the electrification of buses across Flagstaff.
- **EM-2** Welcome electric micro-mobility devices as legitimate, healthy, affordable, and low-carbon modes of transportation.
- **EM-3** Support residents, businesses, and institutions in the transition to electric vehicles.

Clean electricity

- **CE-1** Produce 100% renewable electricity to cover all City of Flagstaff municipal electricity needs.
- **CE-2** Increase renewable energy installations and usage in new buildings.
- **CE-3** Support solar installations on existing residential and commercial buildings.

Building Fuel Switching

- **FS-1** Reduce or remove natural gas usage in municipal buildings
- **FS-2** Encourage new buildings to rely on the electric grid as their main energy source.
- **FS-3** Support fuel switching in existing residential and commercial buildings.
- **FS-4** Provide training and education on fuel switching.

3. PRIORITY THREE: WE WILL MANAGE OUR CONSUMPTION

Reduced Building Energy Use

- **BE-1** Achieve net zero energy City of Flagstaff facilities.
- **BE-2** By 2030, require new homes in Flagstaff to be net zero energy homes.
- **BE-3** Reduce energy use in existing buildings.

Sustainable Consumption

- **SC-1** Manage emissions from the Cinder Lake Landfill.
- **SC-2** Encourage sustainable consumption.
- **SC-3** Divert more waste from the landfill.
- **SC-4** Reduce organic waste going to the landfill and reduce food insecurity.

Water Security

- **WS-1** Improve water infrastructure and expand water reuse.
- **WS-2** Improve ecosystem management for protection of water resources.
- **WS-3** Continue to support water conservation efforts across the Flagstaff community.
- **WS-4** Maximize passive and active community rainwater infiltration.

4. PRIORITY FOUR: WE WILL UPHOLD OUR COMMITMENTS

Healthy Forests and Open Spaces

- **HF-1** Protect existing forests, resources, and meaningful open spaces.
- **HF-2** Restore and maintain the natural fire-adapted structure and pattern of the forests of the greater Flagstaff region through collaboration with partners.
- **HF-3** Educate the public on forest health and wildfire risk reduction.
- **HF-4** Support innovation in the forest health and wildland fire sectors.
- **HF-5** Encourage diverse native plant ecosystems in the built environment.
- **HF-6** Proactively manage for expected ecosystem transitions, including the potential threats to ponderosa pine forests.

Health and Safety

- **HS-1** Identify community health impacts from climate change and target support to assist at-risk populations in adapting to change and protecting their health.
- **HS-2** Prepare for changing risks to public health due to climate change and increase collaborations across agencies to improve health and climate awareness, preparedness, and resilience.
- **HS-3** Adequately fund services for disaster preparedness.
- **HS-4** Improve the resilience of public infrastructure and City facilities.

Economic Prosperity

- **EP-1** Accelerate the transformation to a low-carbon economy that minimizes emissions and spurs innovation.
- **EP-2** Support the adaptation efforts of local businesses as the climate changes and the economic landscape shifts.

Carbon Dioxide Removal

- **CD-1** Develop a portfolio of local and regional carbon dioxide removal initiatives to meet Flagstaff's commitment to carbon neutrality.
- **CD-2** If local carbon dioxide removal projects are insufficient, obtain high-quality carbon offsets and CO2 Removal Certificates (CORCs).

THE PATH TO CARBON NEUTRALITY STARTS WITH A 44% REDUCTION IN EMISSIONS

Achieving carbon neutrality involves two core actions:

- First, a community must reduce emissions as much as possible,
- and then balance the remaining emissions with carbon dioxide removal.

The City's carbon neutrality strategy starts with significant emissions reductions. Without action, we project that the Flagstaff community will produce approximately 846,000 metric tons of greenhouse gas emissions in 2030 – this is called the **business-as-usual scenario**. **The strategies and outcomes envisioned by this Plan will lead to a 44% reduction in emissions** compared to the business-as-usual scenario. While this reduction is significant, our community will still produce an estimated 471,000 tons of greenhouse gasses in 2030 (MTCO2e).

To achieve carbon neutrality, Flagstaff will need to pursue carbon dioxide removal initiatives at an equivalent scale. If 471,000 tons of greenhouse gasses are still produced over the course of a year, then 471,000 tons will need to be removed.

The two graphs below, Figures 1 and 2, display these emission reductions in different ways. This Plan uses 2016 as the 'base year' for its greenhouse gas emissions inventory – it is the benchmark against which the City compares current and future emissions. This Plan also uses the business-as-usual scenario to set goals and targets. For updated greenhouse gas emissions inventory for Flagstaff's emissions, see page 156.

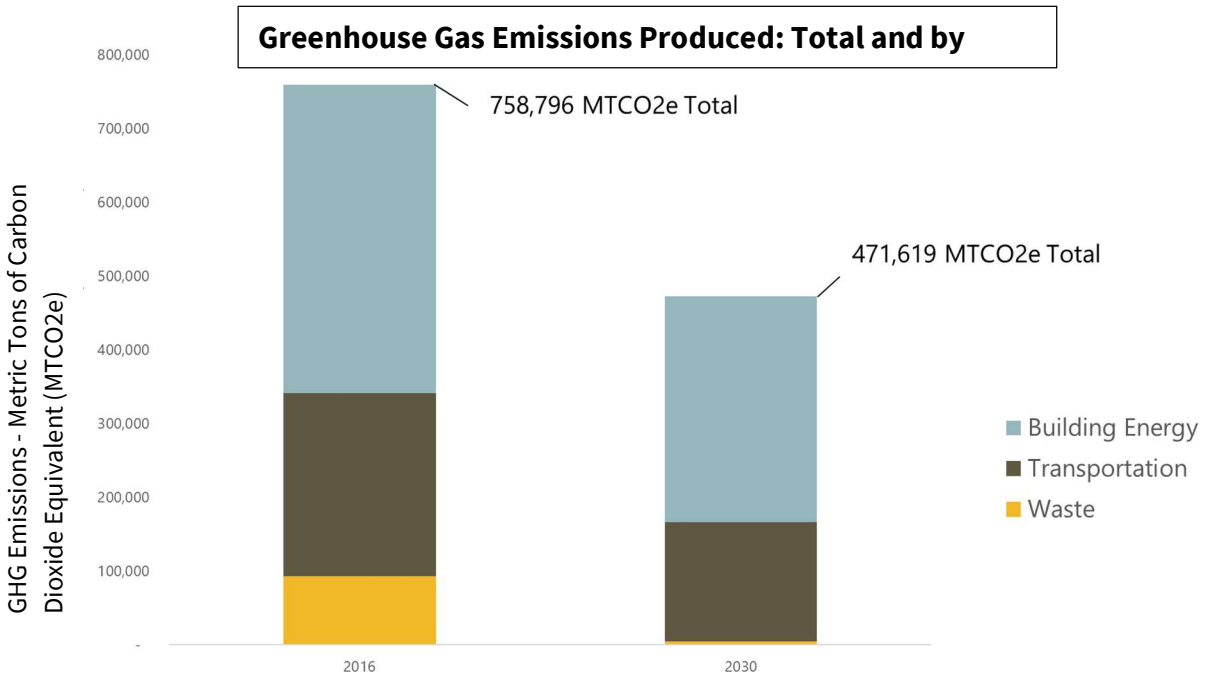
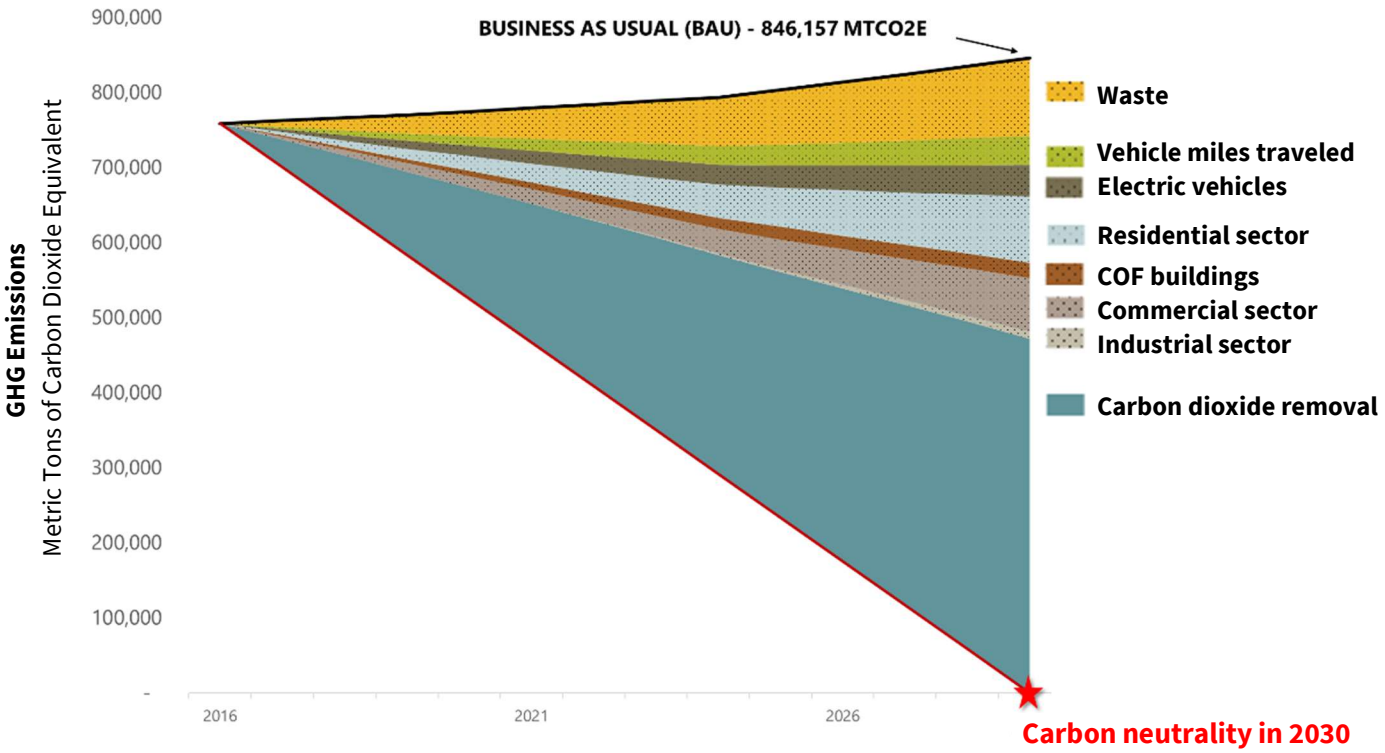


Figure 1: Remaining emissions still produced in 2016 (measured) and 2030 (projected). This bar graph only considers the emissions produced and does not consider the net impact that carbon dioxide removal (CDR) initiatives would have.



Reductions from waste
Flaring and diversion

Reductions in vehicle miles traveled (VMT)
Maintain 2019 VMT levels

Reductions from electric vehicles
30% of vehicle miles will come from electric vehicles

Reductions from residential sector
43% reductions in total energy use. 62% reduction in emissions from natural gas. 72% of electricity is zero-emissions.

Reductions from COF Buildings
28% from reductions in total energy use. 60% reduction in emissions from natural gas. 100% renewable electricity.

Reductions from commercial sector
11% reduction in total energy use. 20% reduction in emissions from natural gas. 69% of electricity is zero-emissions.

Reductions from industrial sector
68% of electricity is zero-emissions.

Carbon dioxide removal
471,619 MTCO2e

Figure 2: Wedge graphic of carbon neutrality. This graph shows the emissions reductions and carbon dioxide removal required to achieve net-zero emissions by 2030.

GETTING TO NET-ZERO: KEY SHIFTS TO REACH CARBON NEUTRALITY

Flagstaff needs to commit to substantive change in our community to reach carbon neutrality. We will need to collectively and individually take big and bold actions on an aggressive timeline. The table below describes some of the outcomes Flagstaff will need to reach.

Significant reductions in the miles we travel by passenger vehicles	- Vehicle **Miles Traveled (VMT).** Hold internal VMT measured steady at 2019 levels, even amidst community growth. Internal VMT = trips that start and end within the Flagstaff community.
	- 30% of our internal VMT will be in **electric vehicles** (or have zero tailpipe emissions).
Rapid solar energy development	- **2,000 new home solar systems** are installed by 2030 - **15 Megawatts (MW**) **of new solar** on commercial and industrial buildings/lots
Extensive building retrofits and electrification	- **Retrofit ~50% of existing homes** (12,500 total residential retrofits) to reduce energy use and electrify homes. - 25% of all commercial buildings get a **deep energy efficiency retrofit**. - 15% of commercial buildings **fully electrify**.
City of Flagstaff: Renewable energy + energy use	- **100% renewable electricity** for the municipality by 2025. - Energy efficiency and fuel switching in **municipal buildings**.
Low-impact new buildings	- By 2030, ensure new buildings use **net-zero energy**, meaning they contribute to the creation of as much energy as they use.
Carbon dioxide removal	Removing approximately 471,000 tons of carbon dioxide from the atmosphere per year by developing and supporting a **portfolio of carbon dioxide removal initiatives.** Potential projects include biomass, bioenergy or biochar initiatives on City land and Open Space.

For a progress update on these key outcomes, see www.Flagstaff.AZ.Gov/CNP.

What is a megawatt?

A megawatt is how we measure large amounts of power. One megawatt (MW) = 1,000,000 watts. For reference an LED lightbulb uses about 8 watts. A typical home rooftop solar system is about 5 kilowatt (kW) in size. One MW is equivalent to 200 typical home systems. The solar array at the Flagstaff City Hall is 150 kW in size – so to get 15 MW we would need about 100 additional systems of this size.

About this Plan

What this Plan does

This Plan will guide the City of Flagstaff as it works to achieve carbon neutrality and respond to the climate emergency.

This Plan sets a vision, overarching goals, and specific strategies to reach carbon neutrality and other elements of Flagstaff's Climate Emergency Declaration. This Plan will guide the City of Flagstaff's decisions about policies, funding, investments, and program development.

This Plan is also a communication tool, to help Flagstaff community members understand the City's goals, strategies, and potential actions. This Plan identifies areas for action by individuals, opportunities for collaboration with businesses, and how these issues are interconnected.

The science is clear

As the climate changes, Flagstaff will continue to experience warmer temperatures, an increase in aridity or dryness, lower snowpack levels, and increased wildfire risk.

These changes will have cascading impacts on Flagstaff's natural environment, residents, and community systems. Just a few of the impacts include:

- The forests surrounding Flagstaff will become drier and more stressed, increasing their vulnerability to severe wildfire and disease.
- Visitation and tourism to Flagstaff will change. Snow in winter will become less predictable, and the Phoenix metro area will see increasingly extreme summer temperatures. This will have impacts on Flagstaff's economy, infrastructure, housing systems, and land use.
- Flagstaff will experience more days with temperatures above 90 degrees, increased allergens, and more days with poor air quality due to smoke, negatively impacting residents with health vulnerabilities.

All Flagstaff residents will need to adapt to these and other changes. Some changes will bring opportunity and others will bring challenges, particularly for disproportionately impacted community members like older adults, families with low incomes, or communities of color.

For more information on the anticipated changes to Flagstaff's climate and resulting impacts on its community: See Appendix A of this document, or find even more detail in the Flagstaff Climate Profile, available through the City of Flagstaff Climate website: www.flagstaff.az.gov/climate.

Systemic change versus individual action

In conversations about climate action, there tends to be extensive conversation around the value of systemic and individual change. This Plan utilizes both! As a municipality, the City of Flagstaff works on systemic, structural changes to decrease greenhouse gas emissions and improve quality of life. However, these systemic changes help make individual action easier! Think about transportation, for example. If you live in a walkable neighborhood, you're more likely to leave your car at home, since the system and infrastructure is set up for you to make that choice more easily. Systemic change and individual action are not mutually exclusive. Instead, they complement and support one another.

How this document relates to the 2018 Climate Action and Adaptation Plan

The Flagstaff Carbon Neutrality Plan builds on progress of the 2018 Climate Action and Adaptation Plan – also known as the CAAP.

The 2018 CAAP was developed over a year and a half of community conversations to create the first climate plan for Flagstaff. It was adopted unanimously, and was the first community-wide climate plan in Arizona. It established broad goals for reducing emissions, preparing for change, and ensuring that we act equitably, prioritizing our most disproportionately impacted community members.

The 2018 CAAP aligned with the best available science that formed the foundation for the Paris Climate Agreement. One month before the CAAP adoption, the Intergovernmental Panel on Climate Change (IPCC) published a report: Global Warming of 1.5° C, stating that urgent action was needed across the globe to hold warming to 1.5° C, which is equal to 2.7° F. When the Flagstaff City Council adopted the CAAP in late 2018, the CAAP acknowledged that this was a first step and that community conversations around this IPCC report were needed.

When adopted in 2021, the Carbon Neutrality Plan focused on mitigation and updating the greenhouse gas emissions goals of the 2018 CAAP. In December 2022, the Carbon Neutrality Plan was revised to incorporate the adaptation-related target areas of the 2018 CAAP. The following target areas were updated and migrated from the 2018 CAAP to this Carbon Neutrality Plan:

- Inclusive Recreation
- Water Security
- Healthy Forests and Open Spaces
- Health and Safety
- Economic Prosperity

As a result of the December 2022 revision, the Carbon Neutrality Plan represents Flagstaff's current mitigation, adaptation and equity goals. The 2018 CAAP is no longer a current document needed for reference purposes.

How this document relates to the Flagstaff Regional Plan 2030

The Flagstaff Carbon Neutrality Plan supports the vision, goals, objectives and policies of the Flagstaff Regional Plan 2030: Place Matters (Regional Plan). The Regional Plan sets forth a vision for a Sustainable Flagstaff, connecting development decisions to environmental impact and the need to plan for the future. It envisions active stewardship and vitality for both the current population and future generations – ideals that are supported by reducing greenhouse gas emissions, resilience-building and support for marginalized community members. This document builds upon the climate change and adaptation goals originally outlined in the Regional Plan.

- Major Amendment to the Regional Plan for carbon neutrality

In December 2021, the Flagstaff City Council adopted a major amendment to the climate change and adaptation goals and policies of the Flagstaff Regional Plan 2030 – revising pages IV-11, IV-12, and X-19. This amendment aligned the Regional Plan climate action section with the Flagstaff Carbon Neutrality Plan, closing the 'ambition gap' between the Regional Plan's broad goal of reducing greenhouse gasses and this Plan's commitment to carbon neutrality. The revised climate change and adaptation goals and policies of the Regional Plan are:

Goal E&C.2. Achieve carbon neutrality for the Flagstaff community by 2030.

- Policy E&C.2.1. Encourage the reduction of energy and material consumption.
- Policy E&C.2.2. Promote investments that create a connected and efficient community, decrease emissions from transportation and building energy, and strengthen climate resiliency.
- Policy E&C.2.3. Review and revise existing regulations, standards, and plans (codes, ordinances, etc.) to reduce community greenhouse gas emissions.
- Policy E&C 2.4. Promote developments that help the community achieve carbon neutrality through strategies that reduce the project's emissions from transportation, energy, and consumption.

Goal E&C.3. Prepare Flagstaff's community systems and resources to be more resilient to climate change impacts, and address climate change in a manner that prioritizes those most impacted and ensures the costs and benefits of climate adaptation and mitigation are equitably distributed.

- Policy E&C.3.1. Develop and implement a comprehensive and proactive approach to prepare the community for and to minimize the impacts of climate change induced hazards.
- Policy E&C.3.2. Review and revise existing regulations, standards, and plans (codes, ordinances, etc.) to reduce the community's vulnerability to climate change impacts and reduce the disproportionate impacts on vulnerable communities.

- Policy E&C.3.3. Invest in forest health and watershed protection measures.
- Policy E&C.3.4. Increase the region's preparedness for extreme climate events.
- Policy E&C.3.5. Improve the ability of vulnerable community members to adapt and thrive amidst the pressures of climate change.
- Policy E&C.3.6. Attempt to equitably distribute the burdens and benefits of climate action policies and investments to all segments of the community.

Goal E&C.4. Integrate available science into policies governing the use and conservation of Flagstaff's natural resources.

- Policy E&C.4.1. Assess vulnerabilities and risks of Flagstaff's natural resources in the context of anticipated climate changes and resulting changes to Flagstaff's systems.
- Policy E&C.4.2. Develop water use policies that attempt to integrate current best projections of climate change effects on the Colorado Plateau's water resources and emphasize conservation.

- Support for other Regional Plan goals and policies

This document also furthers many other goals of the Regional Plan, such as but not limited to:

- Goal E.1. Increase energy efficiency.
- Goal E.2. Expand production and use of renewable energy.
- Goal LU.1. Invest in existing neighborhoods and activity centers for the purpose of developing complete connected places.
- Goal LU.5. Encourage compact development principles to achieve efficiencies and open space preservation.
- Goal LU.6. Provide for a mix of land uses.
- Goal NH.3. Make available a variety of housing types at different price points, to provide housing opportunity for all economic sectors.
- Goal T.5. Increase the availability and use of pedestrian infrastructure, including FUTS, as a critical element of a safe and livable community.
- Goal T.6. Provide for bicycling as a safe and efficient means of transportation and recreation.
- Goal T.7. Provide a high-quality, safe, convenient, accessible public transportation systems, where feasible, to serve as an attractive alternative to single-occupant vehicles.

The Flagstaff Carbon Neutrality Plan will also inform potential priority areas for the next update to the regional plan.

II. OUR APPROACH

This document is a framework for action; it outlines broad strategies for how to achieve carbon neutrality. The principles below illustrate the approach the City will take as it works within the community to achieve its carbon neutrality goals.

OUR WORK IS INFORMED BY THE FOLLOWING PRINCIPLES:

Carbon neutrality is:

- 1. Community-driven
- 2. Motivated by urgency
- 3. Prescriptive
- 4. A commitment to accountability
- 5. An investment in our future
- 6. Supported by market leaders

Flagstaff will:

- 7. Be a leader
- 8. Embrace the Big Shift
- 9. Balance community tensions and create opportunities
- 10. Center equity and adaptation

Climate action in Flagstaff will:

- 11. Produce co-benefits
- 12. Rely on partnerships
- 13. Prioritize incentives
- 14. Iterate and adapt continuously



Carbon neutrality is …

- **Community-driven**
- **Motivated by urgency**
- **Prescriptive**
- **A commitment to accountability**
- **An investment in our future**
- **Supported by market leaders**

1. CARBON NEUTRAILTY IS COMMUNITY-DRIVEN

On September 20th, 2019, Flagstaff community members gathered on the City Hall lawn for the Global Climate Strike. At the gathering, community activists and organizers gathered signatures for a citizen petition, calling on Flagstaff City Council to declare a climate emergency. This Citizen Petition was submitted to the City Council on September 24th, 2019. Hundreds of Flagstaff community members organized into coalitions from farmers and doctors to students and grandparents. At the January 28th, 2020 City Council Meeting, they provided over three hours of public comment requesting a Climate Emergency Declaration and urgent action. On June 23rd, 2020, the Flagstaff City Council unanimously adopted the Climate Emergency Declaration.

Community organizers and residents led the creation of the Climate Emergency Declaration, and their involvement has continued throughout the development process. This Plan was created based on technical analysis, best practices from peer cities, and feedback from Flagstaff community members. A Steering Committee of community members was formed to guide Plan development and incorporate resident voices from the start.

Over the course of 10 months in 2020 and 2021, more than 2,500 residents engaged and contributed to the development of this Plan. Community members contributed to six surveys, attended 12 virtual open house forums, and contributed videos for the Climate Emergency Open House website. City staff made 50 carbon neutrality presentations to City Commissions and community groups. Community partners played an integral role in advising the Plan and inviting their networks to provide input.



2. CARBON NEUTRALITY IS DRIVEN BY URGENCY

The climate emergency is causing change in Flagstaff today and threatens to cause catastrophic events across the world in the coming decades. Urgent and bold action is necessary to take advantage of a small window of opportunity to avoid the worst effects of irreversible climate change. The IPCC's Special Report: Global Warming of 1.5°C states that limiting warming to 1.5 degrees Celsius (which equal to 2.7 degrees Fahrenheit), compared to 2 degrees Celsius, will allow 10 million people to avoid the health impacts of sea level rise, save the world approximately $30 trillion in damages, and avoid up to 2,000 heat-related deaths annually.

The severe impacts of climate change and the need to keep global warming below 1.5°C was a vital driving principle behind the June 2020 Climate Emergency Declaration, available on page 153.

Local governments are first responders to the climate emergency, like most other emergencies. Thus, local governments across the world have a responsibility to prepare for this looming threat, to reduce the potential harm, and to protect disproportionately impacted communities.

Like other emergencies, action must be swift, decisive, collaborative, and effective, while being rooted in community values and priorities.

3. CARBON NEUTRALITY IS PRESCRIPTIVE

To restore a safe climate for future generations, communities across the world must drastically reduce the amount of fossil fuels used in buildings, transportation, and consumption. Within the United States, getting to carbon neutrality looks similar across all cities undertaking this goal, and relies on several common strategies:

- Reducing the energy we use for buildings, transportation and consumption.
- Creating energy from renewable and clean sources.
- Switching buildings and vehicles to run on clean electricity or other renewable sources.

In this way, carbon neutrality is prescriptive: there is an agreed upon course of action to achieve the emission reductions necessary. These actions may be re-packaged or reframed from city to city, but the necessary high-level strategies are known. Flagstaff is no different – the necessary actions are pre-determined by where our emissions come from. We still rely on national best practices to dramatically reduce emissions from our buildings, transportation, and consumption.

Because there are only minor deviations from the standard pathway to achieve carbon neutrality, Flagstaff's actions will be similar to all other cities striving for carbon neutrality. There is still ample opportunity for creativity and innovation in *how* Flagstaff achieves these goals: policies and programs will be developed to meet Flagstaff's unique characteristics, population, economic drivers and climate.

4. CARBON NEUTRALITY REQUIRES ACCOUNTABILITY

Carbon neutrality is a framework of accountability. To be carbon neutral, each year we will measure the emissions produced by the Flagstaff community – those we were not able to avoid through emissions reductions (mitigation). We must then remove an equal amount of carbon dioxide from the atmosphere in order to arrive at carbon neutrality, or net-zero emissions.

In this way, the carbon neutrality framework has a built-in accountability feature: regardless of the City's success at reducing emissions, the City can still meet the goal of carbon neutrality through carbon dioxide removal (CDR). The City must use a combination of emissions reductions and carbon dioxide removal to get to net-zero emissions, balancing both sides of the scale, as seen below in Figure 3. If we fail to meet our emissions reduction goals, then our removal obligation will increase proportionately. Similarly, if we exceed our emissions reduction goals, then our removal obligation will decrease. Read more about our plans for CDR on page 147.

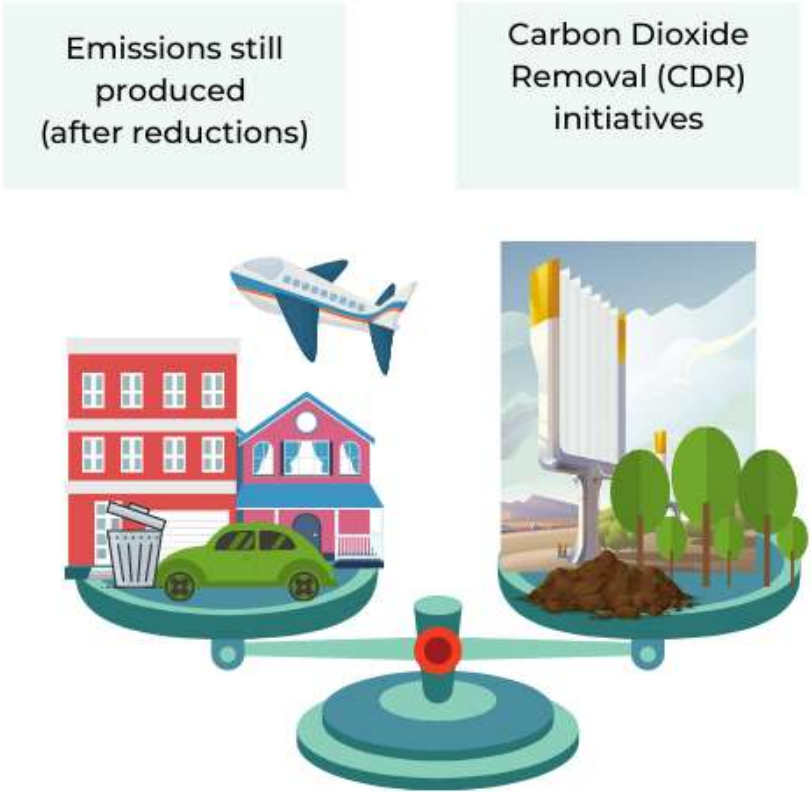


Figure 3. The two sides of the carbon neutrality scale: On the left side are the remaining emissions still produced (after reductions). On the right side is carbon dioxide removal. The two sides of the scale must balance out to achieve carbon neutrality. (Note: the mechanical tree illustration on right side of scale is courtesy of the Arizona State University Center for Negative Carbon Emissions.)

5. CARBON NEUTRALITY IS AN INVESTMENT IN OUR FUTURE

Taking climate action and avoiding the worst impacts of climate change makes sense economically and morally. Action is far less expensive and far more beneficial than inaction. Like forest health measures taken to avoid catastrophic wildfire, climate action is an investment in our future.

> In Flagstaff, forest protection provides a sobering example of the need for preparation: The 2010 Schultz wildfire and post-fire flooding had a total impact between $133 and $147 million.[1] By comparison, the phase one of the Flagstaff Watershed Protection Project (FWPP) required a $10 million investment from Flagstaff residents. This down payment on forest health will help Flagstaff avoid high-severity fires that could cause devastating flooding, and is projected to help the Flagstaff area avoid between an estimated $573 million and $1.2 billion in damages.[2]

Just as individuals prepare for retirement, climate action takes intentional preparation. It is said that the best time to start investing for retirement is 15 years ago, and the next best time is now. Like retirement, it may be helpful to approach the spending that will be required on climate action with an investment mindset. Investments require spending, but they also produce returns and benefits. The earlier someone starts investing, the easier and less expensive it will be for them to meet their retirement goals. The longer someone delays investing, the more difficult and expensive it becomes.

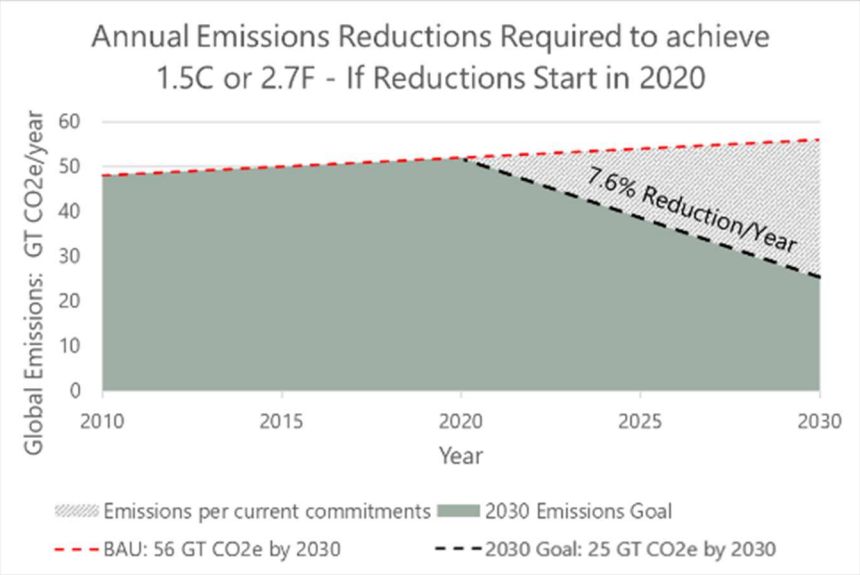
Investments in climate action are no different, and these investments produce returns for ourselves and future generations. The 2019 UN Gap Report shows that if governments worldwide had started 10 years ago, we could have made relatively modest and gradual investments to achieve annual emissions reductions of just 3.3%. Figures 4 and 5 show the reductions required based on different action timeframes.

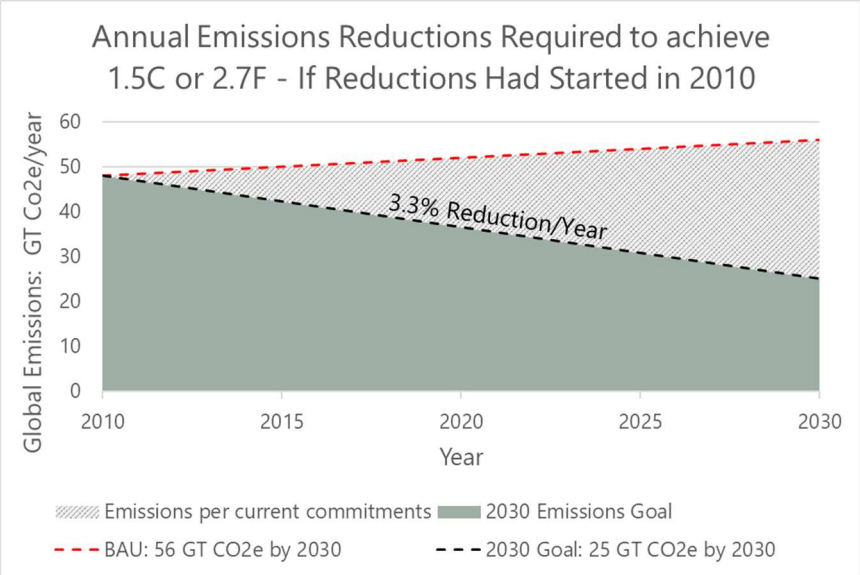
Because of our collective delay, the necessary investments will need to be more significant and rapid to achieve the annual global reductions of over 7.6% per year that are now required.[3] That trend only continues with further delay. Indeed, one recent study concluded that if the U.S. starts investing now in efforts to reach net-zero emissions by 2050, the total spending required would be nearly half as much compared to delaying our investments until 2030.[4] When it comes to making investments to achieve goals, the amount of time remaining can be either the greatest asset or biggest liability. There may still be enough time to meet our climate stabilization and adaptation goals, but only if we accelerate our ambition and start making the necessary investment contributions.

It is said that an ounce of prevention is worth a pound of cure. Part of the investment mindset is evaluating both the cost of action as well as the cost of inaction. Choosing to avoid oil changes only appears to save a

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[1] Full Cost Accounting of the 2010 Schultz Fire: http://openknowledge.nau.edu/1282/1/Combrink_EtAl_2013_ERIWhitePaper_SchultzFullCostAccounting.pdf
[2] The Cost of Inaction: Flagstaff Watershed Protection Project Cost Avoidance Study: https://arizonastatelawjournal.org/wp-content/uploads/2016/04/Fox_Final.pdf
[3] https://www.unep.org/interactive/emissions-gap-report/2019/
[4] https://energyinnovation.org/wp-content/uploads/2021/01/Cost_of_Delay.pdf





Figures 4 and 5: Depictions of the worldwide greenhouse gas reductions needed to achieve 1.5C (2.7F). Graphs reproduced from 2019 UN Gap Report Interactive Dashboard

car owner money until their engine seizes. Likewise, avoiding investments in climate action only gives the appearance of saving money until it clearly, irreversibly, and perhaps quite suddenly, doesn't. While there is a high level of uncertainty about what the exact cost of the required level of climate action will be on a global scale, there is a high level of agreement that **the risks and cost of inaction will be far greater**.[5] This consensus on the cost of inaction comes despite the fact that there are many externalities that economic models often struggle to measure (See the Social Cost of Carbon section on page 44). The City's Climate Emergency Declaration recognizes that the time to invest in our future is now.

[5] https://policyintegrity.org/files/publications/Economic_Consensus_on_Climate.pdf

6. CARBON NEUTRALITY IS SUPPORTED BY MARKET LEADERS

The market is moving towards climate action. Private companies and institutions across the world are acting based on scientific data to protect their investments and ensure their own financial health into the future. Climate action can represent a financial opportunity – from electric cars to solar systems, new companies have already made a global impact and large profits from providing climate solutions.

Market conditions are changing quickly, and the cost of climate action is falling as investment ramps up. Solar panel technology represents a telling example. Investments and advancements have caused the price of solar to fall 82% from 2010 to 2018.[6] Just ten years ago, we could not have anticipated that solar would now be the least expensive form of energy in history, according to the International Energy Agency.[7]

Technology is rapidly advancing in electric vehicles, home electrification, and carbon dioxide removal, too. The market will assist in climate action in these areas, bringing down the cost of beneficial technologies that make climate-friendly investments the obvious choice, simply on short term return on investment scenarios.

These market trends have three central implications for this Plan:

- Advances in technology will continue to bring down costs for climate action, resulting in savings for governments, businesses, and residents.
- Developing cost estimates for strong climate action has significant uncertainty, due to the rapidly changing market conditions. Action may not be as expensive as it looks today, and it will certainly be less expensive than inaction.
- This Plan must be flexible to adapt to the changing market conditions and take advantage of new technology.

The global move towards climate action in the private sector will create opportunities for the City of Flagstaff and its residents. The City of Flagstaff will be ready to partner with local, regional and national businesses in taking climate action.



[6] https://www.pv-magazine.com/2018/01/13/8th-irena-assembly-report-finds-utility-scale-solar-lcoe-falls-73-since-2010/
[7] https://webstore.iea.org/world-energy-outlook-2020

Flagstaff will…

- **Be a leader**
- **Embrace the Big Shift**
- **Balance community tensions and create opportunities**
- **Center equity and adaptation**

7. FLAGSTAFF WILL BE A LEADER

Although climate change is one of the more important challenges the world has ever faced, the international community has not taken necessary action. Due to inaction, climate change will cause coastline loss, crop failure, mass migration, and famine. The consequences for the world's poor are dire.

Leadership is needed both worldwide and in Flagstaff. Flagstaff is a part of the global community of cities and so Flagstaff's actions, along with the actions of every other city, contribute to the global fight against climate change.

Flagstaff will see both negative impacts and opportunity from climate change – the coming climate changes and related impacts to our community are outlined starting on Page 154. We must make the investments needed to avoid the worst scenarios of global temperature rise, while preparing for a future in a changing climate.

Leadership in climate action will require courage, bold action, and investment to ensure a safe future. Leaders are needed throughout the Flagstaff community: we need leaders in the business sector, within regional public agencies, among developers, throughout our neighborhood organizations, and in our schools.

In 2021, examples of leadership could be found both near and far:

- In April 2021, **the federal government** established a goal to reduce greenhouse gas emissions from 2005 levels by 50% to 52% by 2030 – a goal that is strongly aligned with this Plan's mitigation goal. This goal reflects the need for urgent action and the benefits of acting on climate. It also provides significant opportunity for local governments who are ready to partner with the federal government to develop programs with local benefits.
- **Businesses** are reading the same reports, coming to the same conclusions, urging governments to set align their targets with the urgency that is needed this decade, and committing to climate action and investment themselves.
- The **We Mean Business coalition**, comprised of over 1,776 companies that "recognize the transition to a zero-carbon economy is the only way to secure sustainable economic growth and prosperity for all," sent an open letter to the Biden administration supporting the 50 to 52% reduction by 2030 goals, calling the target "ambitious and attainable."
- Over 1,300 businesses and investors joined 165 local and tribal governments, including Flagstaff, as part of the **America is All In** campaign to support the same national targets.

- **Arizona Public Service (APS)**, which is Flagstaff's electric utility company, has committed to transitioning to a 100% carbon-free electric grid by 2050. Salt River Project (SRP) recently committed to doubling its renewable electricity capacity by 2050, driven by demand from business customers.
- **Arizona Forward** has membership from over 150 public and private organizations across the state that recognize the need to "address the increasingly harmful climate impacts and shape Arizona's long-term future… This is why we focus on brining local businesses and municipalities together to work toward actionable solutions – because inaction is not an option."
- Over 545 companies have become signatories to the **Business Ambition for 1.5C** commitment.
- Numerous companies from all sectors of business are recognizing the need for innovation and investment in solutions this decade, to bring down the costs and bring up the volume of necessary strategies that are not yet mature. Many companies - from Stripe to Microsoft to Shopify and others - are **voluntarily putting their assets to work** to accelerate the development of these necessary technologies and approaches.
- Cities across the world are moving forward. **Tucson** recently declared a climate emergency and set a goal of carbon neutrality by 2030. **Phoenix** has a carbon neutrality goal of 2050. Over 80 U.S. cities have committed to 100% renewable energy, from Moab, Utah and Orlando, FL to St. Louis, MO, and Fayetteville, AR to Denver, CO and Norman, OK.

Flagstaff is well-positioned to lead in Arizona.

Flagstaff is on the forefront of climate action in Arizona. This leadership stance will require bold action, risk, and even discomfort as we challenge the status quo and chart new paths for small cities. Flagstaff's leadership can help to move the needle, opening the way for other communities to make strong commitments and taken aggressive action.

8. FLAGSTAFF WILL EMBRACE THE BIG SHIFT

The framework of carbon neutrality establishes the 'rules of the game' for our work. Going forward, our community and our leadership will need to continuously evaluate and determine the 'gameplan.'

As we began developing this inaugural Carbon Neutrality Plan, we asked what level of emissions reductions might be possible in Flagstaff, before relying on carbon dioxide removal initiatives. This question resulted in an initial maximum reduction scenario that suggested that Flagstaff might be able to reduce local emissions by as much as 80% if we committed to ambitious, transformative change, and if favorable supporting actions and policies were quickly implemented at the utility, State and Federal levels.

Many of the actions in this initial maximum reduction scenario might be framed as being 'technological substitutions' or 'behind the scenes' actions that are critical but not especially noticeable in terms of how they might impact someone's daily life. For example, when someone turns on the faucet and feels warm water, they cannot tell whether that water is heated by a fossil fuel like natural gas or by a clean energy source like renewable electricity. Likewise, an electric car is still a car, and the way that car functions on a

daily basis is not very different whether it is an electric vehicle (EV) or a car fueled with gasoline. These technological solutions don't cause much disruption to daily life in Flagstaff.

Other actions and outcomes in the initial maximum reduction scenario would be more noticeable, disruptive, and ultimately transformative. This sense of disruption can be especially heightened if thinking about the outcome taking effect today, overlooking the years-long transition and the supporting actions that have yet to be implemented. Many of the actions and outcomes related to the key strategy of decreasing dependence on cars are likely to be some of the most noticeable. Imagine being able to dramatically cut the total miles driven in Flagstaff while people are still able to socialize, shop, and otherwise meet all daily needs. This outcome can only be realized if we fundamentally shift our approach to neighborhood design and transportation. We would build our transportation corridors with various forms of micro-mobility as primary goal, rather than supporting the continued growth of automobile travel. We would build our neighborhoods so they are more connected and complete; people wouldn't have to travel across town as often because they can get most of what they need nearby. This would require increasing the housing options, density, and businesses or services available in and around our neighborhoods. These 'noticeable' actions that maximize local emissions reductions by changing aspects of our community design and transportation systems are what we call the "Big Shift."

This Plan involves elements of both technological substitution as well as the "Big Shift." While the initial maximum reduction scenario was deemed to be infeasible due to various constraints, this Plan envisions a 44% reduction in emissions before carbon dioxide removal. This Plan includes the goal of maintaining the same level of vehicle miles traveled (VMT) that Flagstaff drivers traveled in 2019. Historically, VMT has steadily increased over time, and given that the Flagstaff's population is expected to continue growing, flattening this metric over the next 9 years will be large undertaking that will require a new approach – The "Big Shift." **For more information on VMT and detailed actions required to make the Big Shift**, see the Decreased Dependence on Cars target area on page 57.

9. FLAGSTAFF WILL BALANCE COMMUNITY TENSIONS AND CREATE OPPORTUNITIES

Flagstaff, like other communities, faces a multitude of community challenges and competing priorities. While there are strong benefits to carbon neutrality, there are also areas where climate action goals may seem to conflict with other community priorities. To achieve carbon neutrality and create a stronger community, Flagstaff must acknowledge the tensions between issues and seek to find common ground and mutual benefit. Tensions can arise between seemingly innocuous issues – as the City searches for the best fit for lighting that achieves both dark sky preservation and energy efficiency, or as residents grapple with the need for more housing and less driving or changes to how our community looks.

The tensions between climate goals and other community priorities must be met with open dialogue, innovative thinking, and good faith that we can find creative solutions that help Flagstaff move forward a vision for a healthier, more inclusive community.

Flagstaff's housing crisis is one example of the complexity of community challenges. Affordable and additional housing in Flagstaff has been a documented need for more than 50 years and has reached a crisis level in recent years. In December 2020, the City Council declared a Housing Emergency, and set in

motion the need to make housing a leading priority for the City organization and Flagstaff community, similar to carbon neutrality. Balancing these priorities is achievable, when approached holistically.[8] In response to the Declaration of a Housing Emergency, the City developed the Flagstaff 10-year Housing Plan. See page 69 for extended information on that plan.

Diving deeper into this discussion, is building electrification. Building electrification is gaining attention as one of the most affordable and effective tools to reduce greenhouse gas emissions from homes and buildings. While electrification has promising benefits for residents, it must be pursued equitably. It will require intentional policymaking and a planned transition for Flagstaff residents to gain access to the major benefits of electrification, including cleaner air, healthier homes, good jobs and empowered workers, and greater access to affordable clean energy and energy efficiency to reduce monthly energy bills.

- Building electrification means eliminating use of fossil fuels for functions like heating and cooking and replacing gas appliances with alternatives that use electricity. In Flagstaff, 50 percent of our greenhouse gas emissions come from the buildings we live and work in. As our electric grid gets steadily cleaner, building electrification can play a big role in fighting climate change.
- Electrifying our homes also has major health benefits. Burning gas releases nitrogen oxides and particulates, which can have serious health consequences.

Building electrification must focus first and primarily on the goal of improving the health and resilience of the people rather than the goal of decarbonizing our building stock. To do so, programs that promote electrification must integrate with energy and non-energy programs alike. An equitable transition will meet people where they are. Instead of adding one more problem for families to solve, an equitable transition will position electrification as a solution to existing household difficulties —one that lowers bills, improves health, and makes homes more comfortable.

Renters Have Limited Control – In 2021, 55 percent of Flagstaff residents were renters. Even if they do not bear the direct cost of electrification, low-income renters, especially low-income renters, nevertheless face barriers to electrification because they lack the property rights to make the decisions required to electrify their homes, such as switching out water heaters, stoves, or other appliances and upgrading the building's electrical lines and panels. Even if these residents wish to live in healthier, cleaner homes, the decision to electrify their building is out of their control and is up to the property owner.

Owners Have Few Incentives to Invest When Renters Pay the Utility Bill - Improvements to energy use, like solar, energy efficiency, and building electrification, primarily produce benefits for the person paying the bills even though the cost of improvement falls to the owner. This creates a split incentive which requires countervailing incentives to correct. This effect is exacerbated by Flagstaff's ongoing housing crisis, in which the demand for housing outstrips the supply, giving landlords little incentive to make clean energy investments. Renters rightly fear that an upgrade could cause their landlords to increase their rent, or convert the property to a short-term rental that could be more lucrative for the property owner. Currently, no regulatory or statutory protections ensure that Flagstaff renters who live in building that receive energy

[8] https://greenlining.org/wp-content/uploads/2019/10/Greenlining_EquitableElectrification_Report_2019_WEB.pdf

upgrades can remain in their homes with no increased rents after the upgrades are performed, or require that rent for upgraded properties remain at a price affordable to low-income residents.

Electrification will be the most effective with a whole-systems building approach, prioritizing energy efficiency, electrification then on-site renewable energy systems.

There are no quick fixes, addressing our housing and climate emergencies require on-going collaboration, hard conversation, and collective action. See pages 117, 129, 138, and 146 for extended and topical discussions of these tensions.

10. FLAGSTAFF WILL CENTER EQUITY AND ADAPTATION

Equity and adaptation are two of the three core goals of this Plan. The importance of these principles was established in the 2018 Flagstaff Climate Action and Adaptation Plan, and their importance is maintained in our Carbon Neutrality work.

Adaptation and resilience

Adaptation refers to actions that increase the ability to withstand, respond to, or cope with climate change impacts.

As we work to reduce greenhouse gas emissions, Flagstaff must continue to prepare for climate change. Adaptation, or adapting to the changing climate and preparing for its impacts, is critical for any forward-looking organization. While we work to avoid the severe temperature changes that will cause irreversible damage to our ecosystem, we must accept that climate changes are already occurring and will continue to occur. Global action must be taken to reduce the amount the climate changes and lessen the catastrophic consequences. At this point change cannot be avoided.

For local governments, adaptation must be part of its emergency planning and hazard mitigation, its economic development forecasting, and its housing and land use planning.

For every mitigation action we take to reduce greenhouse gas emissions, the City and its partners must consider the adaptation impacts and opportunities. The City must not take actions that result in a reduced ability to adapt in the future or make it more difficult to thrive among the temperature and aridity changes that Flagstaff will see.

Adaptation is achieved by building **resilience** – strengthening community systems to create stronger networks, more connected community members, and flexible systems that are prepared for change. **This Plan will work to advance community resilience by analyzing all actions through** an adaptation lens, to ensure that the action is helping to increase resilience and will help residents thrive amidst future changes.

Specific strategies to advance adaptation are discussed in seven resilience-focused target areas:

- **Community Resilience** – page 50
- **Housing for All** – page 69
- **Inclusive Recreation** – page 76
- **Water Security** – page 111
- **Healthy Forests and Open Spaces** – page 119
- **Health and Safety** – page 130
- **Economic Prosperity** – page 139

Community Equity

The City of Flagstaff seeks to serve community members equitably through all of its work in the Flagstaff community, from ensuring children from low-income families can access recreational programming to filling gaps in the sidewalk network to serve more residents. Because climate change will cause such disproportionate impacts to underserved community members, it is even more important to act equitably.

Equity is defined as the just distribution of the benefits of climate protection and alleviation of unequal burdens created by climate change.

Climate change affects people differently. While all populations are at risk of being impacted by climate change, certain groups are more impacted than others. Factors that influence climate vulnerability include:

- Age
- Education level
- Gender and sexual orientation
- Health, ability, and disability
- Immigration Status
- Language abilities
- Level of housing security
- Neighborhood or physical location
- Race and ethnicity
- Social ties
- Socioeconomic status and income
- Technology and internet access
- Working conditions, including exposure to the elements

Inequity in our society means that some individuals are better able to respond to change or stressors than others. Currently, different groups in Flagstaff have different levels of resilience, or ability to withstand challenges like a power outage, school closure, or a medical emergency. One's financial security, housing security, social network, job flexibility, or access to internet might impact their ability to adjust to changes in circumstances. Already, low-income residents, communities of color, and Indigenous individuals disproportionately experience environmental harm and health impacts from pollution. Existing advantages

and disadvantages will be exacerbated by the stresses, hazards and long-term shifts that result from climate change.

While Flagstaff takes action to reduce emissions and prepare for climate change, it must consider disproportionately impacted communities and pre-existing inequities. Flagstaff must ensure that those most at risk are protected and avoid negative impacts that would increase inequities. Flagstaff must also ensure that the benefits of climate action are equitably distributed across all groups, and that all groups can access climate programs. The City will work to advance community equity by analyzing all actions through an equity lens.

Specific strategies to ensure equity are detailed in the Equitable Systems target area. See page 56 for more information.

Relationships among the three goals

The three overarching goals of this Plan - mitigation, adaptation, and equity - are deeply interconnected. Since the framework of carbon neutrality is specific and quantitative in nature, attention to the numeric mitigation impacts has been spotlighted. However, the focus on mitigation to satisfy the quantitative framework should not overshadow these other goals.

In many cases, actions that reduce emissions often have adaptation and equity co-benefits. This can be particularly apparent when mitigation actions serve disadvantaged communities first while also increasing individual, family, and community resilience. For example, a large-scale effort to retrofit homes of low-income residents has the following benefits:

- Reduced energy demand, leading to reduced emissions (**mitigation**),
- Increased resilience of the homes, the community, and the energy infrastructure to withstand shocks (**adaptation**), and
- Improvements in affordability for the occupants, through greater comfort and lower monthly operating expenses of the homes (**equity**).

Home retrofits offer obvious benefits for all three goals. However, some mitigation actions offer few adaptation and equity co-benefits. These actions, with minimal benefits to adaptation and equity, should be given less emphasis and fewer resources. For example, transitioning to electric vehicles (EV) is a piece of the puzzle for lower emissions from transportation. However, too strong an emphasis on supporting EV adoption by individuals can be a distraction from more impactful, equitable strategies that would be accessible to the larger community and not only those who can afford a new electric car. Rather than thinking about how to subsidize getting another car on the road, electric or not, the City's focus and resources should prioritize transforming our community with infrastructure and policy to support biking, walking, public transit, and other forms of micro-mobility. This guidance is reflected in the framing and actions within this Plan's Target Areas related to transportation: Decreased Dependence on Cars and Electric Mobility.

The goals of equity and adaptation were used to evaluate all proposed mitigation strategies; actions with a high level of co-benefits will receive greater emphasis and more resources in Plan implementation. Going forward, this Plan will be reviewed by an Equity Advisory Working Group, as will every subsequent annual update.

Climate action in Flagstaff will:

- **Produce co-benefits**
- **Rely on partnerships**
- **Prioritize incentives**
- **Iterate and adapt continuously**

11. CLIMATE ACTION IN FLAGSTAFF WILL PRODUCE CO-BENEFITS

In addition to reducing our emissions, carbon neutrality can lead to healthier air quality, more secure water resources, more accessible and affordable transportation options, and a more diverse and robust economy. A carbon neutral city is one where neighbors help neighbors, people have multiple options for getting around town, and families have access to clean air and healthy homes.

Climate action has extensive co-benefits that can improve quality of life in Flagstaff and strengthen our community. During Plan implementation, the City will prioritize actions that have multiple co-benefits, from resilience and equity to return on investment and improvements in health.

The table below describes some potential benefits of climate action:

Mitigation action	Benefits
A new FUTS path	Low-emissions ways to get to work Healthy ways to travel to the store or to see friends New opportunities for socializing and meeting neighbors
Energy efficiency retrofit in a local office building	Lower emissions from heating space and water Reduced energy costs Healthier indoor air quality
A new community garden	Lower emissions food Access to healthy and delicious food Mental, social and physical health improvement opportunities for neighborhood residents
Reduced parking requirements in a new apartment building	Less space dedicated to parking, leading to decreased stormwater impacts and increased walkability Reduced vehicle miles traveled Lower total cost of the apartment building construction, leading to lower cost of housing De-coupling of rent and parking fees, so that renters who do not need parking don't have to pay for it

12. CLIMATE ACTION IN FLAGSTAFF WILL RELY ON PARTNERSHIPS

This Plan illustrates what the City of Flagstaff will do to reach carbon neutrality. However, the City will not be able to achieve its goals without collaborating with residents, businesses, and organizations. The City will create high-quality and high-impact support for businesses and residents as we move towards carbon neutrality. Local, regional, federal, and state partnerships are necessary to move Flagstaff forward.

- The City will engage residents and partner with community organizations to change behavior and develop creative local projects, to complement work on systemic shifts and policy change.
- While this Plan's strategies focus on actions the City can take, it highlights areas where legislative change is needed, and where community engagement can lead to positive climate and resilience impacts. The City looks forward to working with the state legislature to capitalize on opportunities for action, investment and benefits for all of Arizona.
- The Federal Government will be an important partner in climate action. The U.S. Government has set a goal to reduce greenhouse gas emissions by 50% by 2030 and to achieve 100% renewable energy by 2035.[9] Due to this Plan and its carbon neutrality goal, the City will be well-positioned to take advantage of federal programming and opportunities for investment.
- Regulatory organizations will also play a key role in shifting energy sources from natural resources (e.g., coal, oil, natural gas) to renewable and more sustainable options (e.g., solar, wind, hydroelectric, electric).
- Local businesses will be perhaps the City's most important partners when transforming our systems. Climate action creates jobs, and local companies can assist with taking rapid action. Examples of projects already creating jobs in Flagstaff include home weatherization, appliance electrification, rooftop solar installations and native landscaping projects. Larger opportunities might include infrastructure improvements to prepare for increased flooding, innovations in forest products, new bike trails and pedestrian crossings, and net zero building construction.

Flagstaff's Regional Institutions are Taking Climate Action

Climate action is a team sport. In 2022, leading institutions across Flagstaff made commitments to climate action or initiated climate planning processes.

- In April 2022, **Northern Arizona University** established a commitment to achieve carbon neutrality by 2030. NAU buildings contribute to more than 10% of Flagstaff's building-sector emissions, and so NAU's efforts to reduce its emissions from campus operations and buildings will make it much easier for Flagstaff to achieve its goals.
- **Coconino County** has set an intention to develop a climate action and adaptation plan for the county.
- **Flagstaff Unified School District** will establish climate goals, a greenhouse gas emissions reduction target, and energy efficiency standards for new projects.

[9] https://www.reuters.com/business/sustainable-business/exclusive-white-house-pushing-80-clean-us-power-grid-by-2030-2021-04-26/

These climate commitments by pillars of our community will facilitate the achievement of Flagstaff's climate goals. Because of this leadership by our regional institutions, the City of Flagstaff will be able to focus funding and efforts on harder-to-decarbonize sectors like home retrofits, business support, and transportation.

The City of Flagstaff is working closely with these institutions to support their emerging climate action efforts. City staff serve on our partners' climate action committees, provide technical support, and share data and best practices. The City will continue to support our partners throughout each entities' climate action evolution and will work in lock step with them to capitalize on efficiencies, integrate efforts and encourage further community-wide climate leadership.

Climate Action Among Flagstaff Businesses

Economic health is an important aspect of climate action, and so collaboration with local businesses will be vital in implementing this Plan. City staff will provide support to businesses in decreasing their greenhouse gas emissions and adapting to expected climate changes, as well as creating a Business and Climate Working Group to improve communication between local businesses and the Sustainability Section, to ensure that the Section is appropriately providing support for local businesses.

Businesses across Flagstaff are taking climate action, and seeing results both in operational savings, community support and revenue. A few examples:

- Flagstaff is home to operations and retail locations of several national corporations that have goals to significantly reduce greenhouse gas emissions. Purina has corporate goals to achieve net-zero greenhouse gas emissions by 2050. REI and Walmart are part of the We Mean Business coalition working to reach net zero emissions by 2050, referenced on page 34.
- Rooftop Solar and Prometheus Solar, local Flagstaff companies, were selected by the Northern Arizona Solar Co-op to install solar for more than 80 households across Flagstaff, Sedona, and Coconino County. In partnership with the City, the Northern Arizona Coop was organized through Solar United Neighbors, a non-profit organization that seeks to increase the access and affordability of solar energy.
- Hotels across Flagstaff are taking climate action. The Flagstaff Drury Inn & Suites is the first LEED-certified hotel in Arizona. The DoubleTree by Hilton Flagstaff has already seen significant energy, water and waste savings from its environmental initiatives; Hilton , the global hospitality company, has committed to cutting its environmental impact in half by 2030, including a 60% reduction in emissions by 2030.
- W.L. Gore & Associates, a large Flagstaff employer, has set a corporate goal to reduce their greenhouse gas (GHG) emissions from manufacturing sites and offices by 60% 2030, and work towards carbon neutrality by 2050.

These are just a few examples of the many Flagstaff businesses working to reduce their impact and create climate solutions.

The City will work to partner with local businesses to learn about barriers and opportunities, and help them to ramp up their climate action efforts. The City will encourage businesses, institutions and even individual households to set their own carbon neutrality goals and create plans for how to get to net zero GHG

emissions. The City can lend support, share resources, create connections to help share lessons learned opportunities, and highlight success stories. A carbon neutral Flagstaff will be a community effort, buoyed by the efforts of residents, businesses and organizations all working on their own carbon neutral journeys.

13. CLIMATE ACTION IN FLAGSTAFF WILL PRIORITIZE EDUCATION AND INCENTIVES

The City of Flagstaff will not be able to reach carbon neutrality alone – as discussed elsewhere in this document, many actors are needed to reach our climate goals. The City will seek to encourage behavior change like it works to shape behaviors in many different areas, from water conservation to courteous driving to recycling and shoveling snow off sidewalks. The City supports community oriented behavior through multiple approaches – from, encouragement campaigns on social media, educational events, to incentives and mandated codes.

The City will fist provide educational resources, incentives, and behavior change programs to encourage community members to take climate action. In some instances, it may make sense to set minimum standards that provide wide community benefits, through City codes or ordinances. The City's pursuit of carbon neutrality will use education and incentives as a first step towards behavior change whenever possible.

Residential energy use provides an instructive example. Currently, the City works to reduce emissions and expenses from residential energy use through a multi-pronged approach:

- Encouragement via social media and public events.
- Education through tips and resources on the City's energy web site.
- Support through the free Home Energy Efficiency workshop series, which is offered both live and at-your own pace, and in both English and Spanish, and provides attendees with a free bag of supplies to make small changes in their own homes.
- Incentives for energy efficient appliance upgrades via the Home Energy Retrofit Rebate Program.
- Minimum energy efficiency standards through building codes for new buildings.

The City will use this multi-pronged model to develop programs that help residents and businesses reduce their emissions, relying first on education, engagement, and incentives to facilitate action and behavior change. When larger scale changes are needed that provide significant benefits to health, safety and welfare and build a stronger Flagstaff, the City will look to code changes and ordinances.

14. CLIMATE ACTION IN FLAGSTAFF WILL ITERATE AND ADAPT CONTINUOUSLY

The climate emergency is an evolving state, with the possibility for new challenges and opportunities. The pace of change is accelerating, and technologies are rapidly advancing. The coming years will see improved batteries and new approaches to carbon sequestration. Changes in federal and state policies can be expected, as well as shifts in markets and significant cost reductions. Conditions on the ground are changing as well: Flagstaff's monsoons are more variable, wildfire patterns are shifting, and our community is adjusting as housing, employment opportunities and tourism evolve.

Accordingly, the Carbon Neutrality Plan must be a **living document** – grounded in core principles but flexible in its approach. To reflect changing conditions and an expanding knowledge base, the Plan is a framework for action, not a detailed list of exact actions that the City of Flagstaff will take. This framework provides the broad strategies the City will undertake to achieve carbon neutrality: the strategies of decreasing dependence on cars and using clean electricity, for instance, illustrate the general direction that Flagstaff must go.

Achieving the target of climate stabilization has often been compared to the Moonshot target of the 1960s, though with considerably higher stakes. Similar to this effort, there was less than a decade to act and when President Kennedy declared in 1962 that "we choose to go to the moon this decade and do the other things…" Similar to this effort, when Kennedy made his speech it was acknowledged that "To be sure, we are behind, and will be behind for some time in manned flight. But we do not intend to stay behind, and in this decade, we shall make up and move ahead." Nobody at the time could say *exactly* how the goal would be achieved – it was known that we would need to learn things that were at the time unknown, that a preliminary plan would be developed but that the plan would need to constantly evolve. And while it may not have been known *exactly* how we would get there, setting and committing to the goal spurred the action, innovation and investment that was necessary to make it happen.



How will this living document work?

- The City will continuously work with the community during Plan implementation. There will be a continuous loop for feedback, development, refinement, and adjustment. City staff will regularly communicate with the City Council, the Flagstaff community, and local organizations to provide updates on our work and solicit feedback.
- This Plan will be available in an online format for easy review of its strategies and actions.
- This Plan will be updated on an annual basis to allow for shifts in tactics, capitalizing on new technologies, opportunities and creative partnerships to meet the City's goals. This annual process will provide for increased transparency so the public is informed of how the City's actions are evolving and can provide feedback to influence the City's work. Note: This document was updated in December 2022, as part of the inaugural revision process.

Carbon neutrality is a goal that will involve creativity, learning, and leadership, in addition to continual adjustment to adapt to new obstacles and opportunities. The City will keep the community involved in this iterative process, through regular communications, community conversations to assess priorities and address tensions, and annual reporting.



III. IMPLEMENTATION

IN THIS CHAPTER:

1. Flagstaff's mobilization will be guided by the Climate Emergency Declaration
2. Priority action steps: years one through three
3. City of flagstaff actions needed
4. Advancing state policy
5. Community actions
6. Community engagement and education
7. Accountability
8. Funding

FLAGSTAFF'S MOBILIZATION IS GUIDED BY THE CLIMATE EMERGENCY DECLARATION

The Climate Emergency Declaration outlines the following priorities for the mobilization of resources. These priorities will guide the implementation of this Plan.

The City of Flagstaff will:

- Dramatically increase its **ambition** to combat climate change through **bold action.**
- Ensure this mobilization effort is City-wide, spanning all sectors of the Flagstaff **economy and community.**
- **Prioritize appropriate funding** for the implementation of climate goals and action.
- **Engage and educate** our residents about the current climate emergency and inspiring action, **especially Flagstaff's youth**.
- **Strive for full community participation and leadership** by residents of Flagstaff, community organizations and other allies.
- Keep the concerns of **vulnerable and historically underserved communities** central to all climate emergency mobilization efforts and facilitate their active participation in this work.
- Develop and reinforce **respectful collaborations** with surrounding Tribal nations, traditional agricultural communities, regional governments, the State of Arizona, and the U.S. Government.
- Prioritize adaptation and mitigation **in all City decision-making processes**.
- Prioritize the creation of **high-quality, good-paying jobs** with comprehensive benefits for those who will be impacted by this transition.

PRIORITY ACTION STEPS: YEARS ONE THROUGH THREE

Below are initial action steps to implement this Plan.

Items that are bolded have received funding. Items with an asterisk (*) are items that have been applied for funding. The implementation of other actions will depend on funding and policy decisions in the next year.

Target Area	Initial action steps
Community Resilience	Expand the Flagstaff HEPA Purifier Program
	Expand the Resilient Neighborhoods Network
	Incorporate of adaptation elements into the CNP
	Support community-led resilience project through the Neighborhood Sustainability Microgrant Program
Equitable Systems	Launch a wood stove rebate program*
	Launch youth Advisory Committee
	Launch Equity Advisory Committee
	City leadership racial equity trainings
Decreased Dependence on Cars	**Adopt and implement the Active Transportation Master Plan**
	Launch the protected bike lane pilot
	Improve City of Flagstaff codes and regulations to allow for more infill housing and greater density
	Analyze and update City of Flagstaff street engineering standards to consider how street design affects travel choices and contribute to greenhouse gas (GHG) emissions
	Analyze and update the City of Flagstaff traffic impact analysis process to incorporate consideration of GHG emissions and transportation demand management analysis
	Policy changes to remove barriers and incentivize accessory dwelling units (ADUs)
	Analyze and reduce or remove parking requirements
	Adopt and implement the 2021-2031 Flagstaff Housing Plan
	Adopt an air quality protection ordinance for idling and loading zones
Electric Mobility	Facilitate an E-bike collective purchasing cooperative
	Launch new micro-mobility share program
	Provide 14 new EV charging stations at City of Flagstaff facilities
	Adopt a City of Flagstaff electric vehicle procurement policy
	Complete an audit of City of Flagstaff policies

Clean Electricity	**Facilitate a solar panel purchasing co-op for businesses and residents**
	Install solar and battery back-up power microgrids for Flagstaff fire stations*
	Develop and install a solar project at Red Gap Ranch
Fuel switching	Develop a building electrification information hub website
	Provide electrification incentives for homes and businesses
	Highlight businesses and residents successfully electrifying buildings
Reduced Building Energy Use	Launch a residential energy efficiency retrofit incentives*
	Refine and expand the residential energy rebate program
	Provide small business energy efficiency building retrofit incentives
	Launch a Building Code Advisory Group
	Complete an energy audit of City of Flagstaff buildings
	Implement energy retrofits and conservation projects identified by the energy audit
	Update the Sustainable Building Resolution for City of Flagstaff buildings
	Implement a City of Flagstaff electricity rate optimization program
Sustainable Consumption	**Launch the pay as you throw recycling and trash collection pilot**
	Launch Community compost drop-off pilot
	Expand the Neighborhood Sustainability Grant program
	Transition the Materials Recovery Facility (MRF) to a transfer station
Carbon Dioxide Removal	Carbon dioxide removal feasibility analysis
	Develop or support a pilot carbon dioxide removal project in Northern Arizona
Partnerships	Launch a Business Sector Advisory Committee
	Finalize the new NAU Climate Action Plan
	Design and deliver business support tools to assist with advancing climate action
	Recognize local businesses showing climate leadership
Internal City of Flagstaff actions	Develop and encourage a City of Flagstaff Remote Work Policy
	Develop a long-term investment plan for carbon neutrality goals and avoided cost for City Council consideration
	Consider developing a climate bond for voter approval

CITY OF FLAGSTAFF ACTION NEEDED

Flagstaff City Council

The success of this Plan is contingent on the Flagstaff City Council continuing to demonstrate leadership on climate action. Plan implementation also relies on continued public support for climate action.

The Flagstaff City Council will have oversight responsibility for this Plan. They will receive annual updates on Plan progress and make policy decisions, budgetary appropriations, and workplan approvals that will facilitate implementation.

Actions specific to the Flagstaff City Council include:

- Identify goals for the upcoming City Council term that will support Plan implementation.
- Identify City Council budget priorities to support Plan implementation.
- Identify state and federal legislative priorities that support the goals of the Plan and enable implementation of Plan strategies and actions.
- Create policies that reflect the ambition, urgency and need for transformative change required by Flagstaff's Climate Emergency Declaration and its carbon neutrality goal.
- Provide leadership in community conversations around the tensions among competing priorities. See the discussion of balancing tensions on Page 27.

City Leadership

For a city to achieve carbon neutrality, it is critical that every part of the municipal organization is involved in implementation. Leaders at the City of Flagstaff—from the City Manager's Office to division directors and individual supervisors—must proactively consider climate action when conducting City operations.

The City Manager's Office will actively support the Council's climate commitment by requiring the involvement of all City divisions in Plan implementation. Opportunities to incorporate climate action into internal decision-making processes include:

- The budget process
- Procurement decisions
- Division strategic planning
- Facility management

ADVANCING STATE POLICY

The Biden administration has committed to a historically ambitious climate agenda. This will likely result in a profound shift in U.S. federal climate policy, exemplified by the Inflation Reduction Act passed in 2022 – the single largest investment in climate action in U.S. This shift is critical, as it is not possible to address the climate challenge without federal leadership, and time is running out to avert catastrophic levels of global warming.

At the same time, state-level climate action will remain essential. History has shown that even an engaged U.S. federal government faces obstacles to progressive regulatory and legislative action. In the face of federal gridlock and inaction, state and local governments have played a crucial role in advancing climate action, reducing greenhouse gas emissions, and supporting the continued maturation of key low-carbon technologies.

Greater collaboration across Arizona is needed in order to advance local and federal climate commitments. The City will continue its work with Arizona cities and tribes to develop state-wide climate policies that ensure equitable access to resources, clean energy, climate related quality jobs, healthier air quality, more secure water resources, affordable transportation options, and a more diverse and robust economy.

COMMUNITY ACTION, ENGAGEMENT AND EDUCATION

Community organizing, leadership, activism and enthusiasm led to the Climate Emergency Declaration. Sustained community energy and action will be needed to achieve carbon neutrality in an equitable manner to build a stronger Flagstaff.

This Plan outlines actions that the City of Flagstaff will take to reach carbon neutrality. However, carbon neutrality will require transformational change across our community, and City actions alone will not be sufficient. Action by residents across the community will also be needed. To reach more people, the City will encourage and provide resources for those who are working in their own businesses, schools, and neighborhoods to take climate action as our community works to reach carbon neutrality. The City of Flagstaff will work with many different parties to encourage, support, and activate all segments of the Flagstaff community to take individual, daily actions that contribute to the goals of reducing community greenhouse gas (GHG) emissions, and increasing community resilience and equity.

The City will work with community partners to build capacity and encourage climate action in the community on a daily basis, through social media platforms, events, community conversations, volunteer opportunities, and training. Distinctive opportunities for action include:

- **Highlights of Climate Leaders**: The City will raise up local businesses, schools, and organizations that are taking climate action and developing their own plans to reach carbon neutrality. The City will support those who want to take climate action by providing resources and areas of action.

- **Ideas for Action**: The City will provide information to residents on the best ways to get involved in carbon neutrality. The City will provide extensive information on actions such as: electrifying home appliances, taking trips without personal vehicles, completing energy efficiency retrofits, and decreasing the amount of trash sent to the landfill.
- **Climate Education**: The City will continue designing and providing climate change curriculum for teachers to encourage youth participation in climate action. Additionally, the City will continue to provide and enhance climate-oriented educational programs, building off of the existing Home Energy Efficiency 1010 workshop, the Flagstaff Climate Ambassadors training, and the Sustainability Leaders program.

ACCOUNTABILITY

Accountability will be ensured through consistent and transparent reporting to the community and the Sustainability Commission, which will monitor implementation progress.

A living document

This section presents a structure for ongoing monitoring, evaluation and reporting on Plan progress. Investing in data collection and consistent reporting increases transparency and is a key aspect of implementation. City staff will regularly track and report on Plan indicators, greenhouse gas emissions and notable progress on implementing strategies.

Reporting

The City of Flagstaff has been annually monitoring and reporting both municipal and community greenhouse gas emissions since 2008. These inventories provide insight into Flagstaff's progress and trends in emissions. The City will continue to update the municipal and community greenhouse gas inventories on an annual basis.

Regular reporting will ensure transparency and continued progress. City staff will measure progress on key performance indicators and report to the community regularly. On an annual basis, the City Manager will request that City staff produce a Plan progress report that includes:

- Progress of each Plan strategy.
- Key performance indicator updates, including an annual greenhouse gas inventory.

Evaluation

The Flagstaff City Council and the Sustainability Commission will evaluate the progress of Plan implementation on an annual basis through review of the annual Carbon Neutrality Plan progress report. Informal progress reports will be provided by City Staff at regular Sustainability Commission meetings.

The Social Cost of Carbon

As discussed within the Climate Change in Flagstaff section (page 154), the recent acceleration of climate change is largely attributed to burning fossils fuels and the subsequent release of greenhouse gases into Earth's atmosphere. Climate change poses severe adverse long-term consequences for all sectors of society, including but not limited to disruption of the food supply, higher societal expense for human health, and broad environmental degradation. The damages caused by emitting greenhouse gases are not reflected in the price of fossil fuels or the products powered by them, thus creating externalities, or impacts that are external to any accounting within the economic system.

Climate change is a market failure that burdens society with the costs associated with greenhouse gas emissions while the benefits are accrued by those burning fossils fuels, including the City of Flagstaff. In order to address and correct this market failure, the social cost of carbon (SCC) can be utilized by the City. The social cost of carbon is an estimate, in dollars, of the damages that would result from emitting one additional ton of greenhouse gases into the atmosphere. The SCC puts the effects of climate change into economic terms to help policymakers and other decision-makers understand the economic impacts of decisions that would increase or decrease emissions. Emissions-related damages are expected to occur many decades into the future. However, those damages must be represented using present-day dollar values. The SCC therefore represents the present value of future harm, and the estimated dollar value must be discounted through a specific discount rate.

The City of Flagstaff can incorporate the SCC into its practices to better account for environmental and social concerns when making financial decisions. The prevailing trend for cities and states that move to consider and account for their greenhouse gas emissions is to incorporate a proxy carbon price into their decision making. A proxy carbon price includes the SCC as a hypothetical cost within large, highly-carbon intensive financial decisions. This shadow price will help the City identify and prioritize low carbon production methods, which ideally will become more cost-effective over time. If greenhouse gas emissions were priced to reflect their total cost to society, economic efficiency could be reached through the profit-maximizing behaviors of emitters and consumers. The proxy carbon price would also help the City of Flagstaff ensure that long-lived projects and procurements would become increasingly "future-proof" when it comes to potential future carbon legislation. By considering the social cost of carbon through a proxy carbon price, the City can future-proof their investments against future carbon prices, save money across the lifecycle, avoid locking in long-term emissions, alleviate the burdens of greenhouse gases placed unfairly onto society, and send a clear signal that the City takes efficiency and GHG emissions seriously.

FUNDING

Financial investments are necessary for Flagstaff to reach carbon neutrality. Investing in climate action throughout Flagstaff has many benefits, financial and otherwise. The benefits of adaptation include the costs we avoid by reducing or averting the negative local impacts of climate change, while mitigation helps us avoid damage from larger changes in the climate. Climate action can also be used to strengthen local businesses, support disproportionately impacted community members, and improve quality of life.

Funding for the implementation of Plan strategies will need to come from within the City budget, agency grants, and new revenue sources. Some actions in the Plan require capital investment in City infrastructure. Others will require increases in annual operating budgets. Some actions are potential candidates for state, federal, or foundation funding.

Funding options include:

- Increases to existing City fees on certain activities, such as increasing the Environmental Management Fee.
- A new sales tax that would have to be approved by voters, similar to how Cities pay for road projects, municipal buildings, and other large city investments.
- Bonds, a mechanism for the City to pay for large infrastructure projects.
- Grants and incentives from the federal government.
- Funding from community partners, private organizations or foundations.
- Allocation of City resources to climate-focused initiatives.
- Establishment of a local emissions reduction fund, to allow individual donations to fund emissions-reducing projects.

Community investment needed

To achieve the goals of this Plan – and to secure a safe climate for future generations – the Flagstaff region will need to invest in the future of our community.

The City of Flagstaff worked with national experts in climate financing to develop this investment estimate. The financial analysis quantified funding needs and considered the following aspects for each of this Plan's major emissions reduction initiatives:

- Metric Tons
- Carbon Dioxide Equivalent (MTCO2e)
- Investment required
- Cost per MTCO2e
- Revenue expected
- Net investment
- Net investment per MTCO2e

Investments to achieve carbon neutrality	
Projected **investment** to reduce 857,039 metric tons of carbon dioxide emissions (MTCO2e)	$ 600,000,000
Projected **community benefits**	$ 622,000,000
Net community benefit	$ 22,000,000

Key considerations for this projection:

Community investment

- The investment in carbon neutrality will be supported by many actors; financial resources may come from the federal government, the City of Flagstaff, or private funding sources. Multiple funding streams will be involved in incentivizing climate action across the community**.** While this $600M figure represents an initial estimate of the cost to the City of Flagstaff, it does not presume the sources of funding (i.e. federal funds from the 2022 Inflation Reduction Act). Furthermore, this cost could decrease due to third party programs that provide resources directly to residents and businesses, or other programs that support climate action without City involvement.
- This initial estimate is likely to change as the federal and state policy landscapes change, as technologies and financing strategies advance, and as the City fine-tunes its implementation plans.
- The investment projection includes projects that achieve many other community priorities:
  - Infrastructure defined in the Active Transportation Master Plan - $200 million
  - Landfill gas capture - $12 million
  - Improved recycling and expanded composting - $20 million
  - City fleet electrification - $3 million
- Large projects with positive economic and jobs impacts comprise more than half of the investment:
  - Clean energy projects - $39 million
  - Electrification rebates and bulk buys - $105 million
  - Deep energy retrofit programs - $157 million
  - Carbon dioxide removal - $47 million
- This estimate is similar to the carbon neutrality investments envisioned by Flagstaff's peer cities. For example, Ann Arbor, Michigan's A2Zero Plan for Carbon Neutrality is estimated to cost $1,056,000,000 to reduce 2,188,950 MTCO2e. Ann Arbor's cost per MTCO2e is lower than Flagstaff's due to legal limitations in Arizona – for example, community choice aggregation is a cost-effective strategy that is not available in Arizona due to state legislation.

Community benefits

- The community benefit figure is made up of projected **fiscal benefits**, or direct financial savings. Fiscal benefits include the monthly savings on utility bills due to energy efficiency – a return on investment that benefits the City (for municipal buildings), a business, or a homeowner.
- The numbers do not include **indirect benefits** such as public health improvements, greenhouse gas emissions reductions, home safety, equity, resilience, and livability.

IV. THE PATH TO CARBON NEUTRALITY

To reach carbon neutrality, we will take action in 15 target areas:

Neighborhoods

- Community Resilience
- Equitable Systems
- Decreased Dependence on Cars
- Housing for All
- Inclusive Recreation

Energy

- Electric Mobility
- Clean Electricity
- Building Fuel Switching

Consumption

- Reduced Building Energy Use
- Sustainable Consumption
- Water Security

Commitments

- Healthy Forests and Open Spaces
- Health and Safety
- Economic Prosperity
- Carbon Dioxide Removal

ABOUT OUR TARGET AREAS

This Plan defines fifteen target areas of action to reach carbon neutrality. The first two target areas – **Community Resilience** and **Equitable Systems** - reflect overall goals that need to be incorporated into all actions outlined in this plan.

Six target areas focus on reducing emissions through *prevention*: **Decreased Dependence on Cars**, **Clean Electricity**, **Building Fuel Switching**, **Electric Mobility**, **Reduced Building Energy Use,** and **Sustainable Consumption**.

Six target areas focus on adapting to climate change and building community resilience: **Housing for All, Inclusive Recreation, Water Security, Healthy Forests and Open Spaces, Health and Safety, and Economic Prosperity**.

The last target area, **Carbon Dioxide Removal**, aims to balance community emissions by *extracting and storing* carbon dioxide from the atmosphere.

These target areas are deeply interconnected, with some even being required to unlock the power of others. We will examine these connections further in the sections that follow

Target Area Structure

Each of the target areas follow the same structure:

- A "Flagstaff will" statement, describing our vision for action in this area.
- What it means
- How we'll get there
- Equity and Adaptation Considerations
- Goals
- Strategies
- Opportunities for action: these provide examples of how the City may achieve this strategy and contribute to the target area's goals. These are provided as EXAMPLES only, to illustrate what actions to active this strategy would look like.
- Legislative change: these areas provide information about legislative policy changes needed at the state or Federal level to support the achievement of the target area goals.

PRIORITY ONE: WE WILL STRENGTHEN OUR NEIGHBORHOODS

- Community Resilience
- Equitable Systems
- Decreased Dependence on Cars
- Housing for All
- Inclusive Recreation



Community Resilience

Flagstaff will increase our ability to anticipate, accommodate, and positively adapt to and thrive amidst changing climate conditions or hazard events while enhancing quality of life, reliable systems, economic vitality, and conservation of resources.

WHAT IT MEANS

Resilience is a community's ability to thrive amidst change. It involves a community's anticipation of and preparation for changing conditions, whether that is short term stressors like a wildfire or severe weather, or longer-term changes like declines in forest health or shifts in the Flagstaff housing market. Resilience requires that communities analyze their vulnerabilities against expected or possible changes, and then proactively adapt to these changing conditions or hazards in a way that actually *enhances* quality of life and builds reliable systems and economic vitality, social cohesion, and resource conservation. Resilience is often grouped with a similar concept, adaptation.

Resilience is reflected in this Plan's overarching adaptation goal:

Goal 2: **Prepare the City's communities, systems, and resources to be more resilient to climate change impacts.**
This preparation will help the City and its residents to be better equipped and prepared to handle both short-term shocks (such as flooding or a wildfire) and long-term change (such as rising housing prices or reduced snowfall). A resilient community is one that can bounce *forward* after a challenge, not only recovering but improving on the status quo.

HOW WE'LL GET THERE

Building community resilience is a long-term process that requires assessment, investment, and relationships building within communities. The City will work in the following areas to build adaptive capacity:

- **A vulnerability analysis** will help the City better understand the extent to which climate changes will affect Flagstaff and different community groups. The City will build off of the vulnerability assessment and climate profile completed for the 2018 Climate Action and Adaptation Plan.
- **Resilience planning** will work across broad stakeholder groups to address the vulnerabilities identified in the vulnerability analysis. This will involve work across City divisions and existing Plans.
- **Education** about the impacts of climate change is a vital aspect of community resilience. The Climate Emergency Declaration calls for education of all Flagstaff residents as well as a focus on youth education around the impacts of climate change and the actions we can take as a community.

- **Community workshops** with residents and businesses can help community members to better understand Flagstaff's vulnerabilities and risks, and how they can help strengthen their homes, businesses, and neighborhoods.
- **Partnerships** strengthen our community cohesion and capacity for response. There are a variety of opportunities for partnership on resilience initiatives. Other City of Flagstaff departments, like the Fire Department and Water Conservation, will be important partners in building community resilience. Additionally, community organizations and neighborhood groups provide interaction between residents that helps foster the sense of community needed in building resilience.

The activities above will help Flagstaff build capacity, sense risks, respond to disruption, learn and transform – all elements of a resilience engineering approach proposed by Erik Hollnagel – see Figure 6 below. Flagstaff will undertake resilience-building as an ongoing project, continually adjusting as conditions change and our knowledge grows.

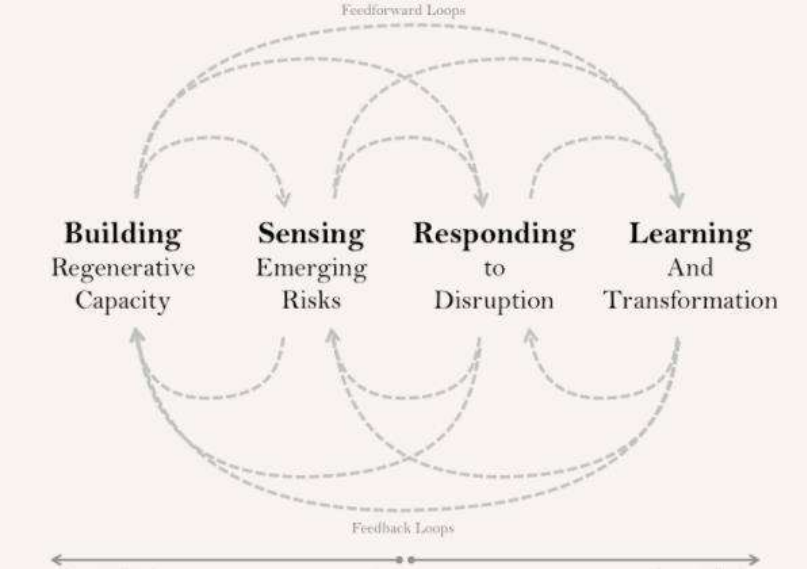


Figure 6: The feedback loops involved in resilience building. Image Credit: Erik Hollnagel

EQUITY AND ADAPTATION CONSIDERATIONS

Equity is interdependent with adaptation and resilience: an equitable community must be adaptable and resilient, in order to ensure well-being for residents through stressors and change. A resilient community must be equitable, because if some residents are disproportionately impacted or unable to thrive amongst change, the overall community suffers.

As the City works to increase resilience and prepare for change, the City must look to include residents from all groups. Disproportionately impacted communities often have less ability to adapt to sudden changes or stressors –low-income families may have little disposable income to use if evacuation is needed for wildfires, or a person whose disability prevents them from driving may have difficulty navigating the streets during severe storms. The City should analyze community vulnerabilities and how they relate to resilience and preparedness, and consider disproportionately impacted communities first for programs that improve our ability to thrive.

STRATEGIES TO ACHIEVE COMMUNITY RESILIENCE

CR-1: Ensure all mitigation actions improve Flagstaff's ability to adapt to the future.

Opportunities for action:

1. Analyze each climate action that the City takes through an adaptation lens, to ensure that mitigation actions do not decrease Flagstaff's ability to respond to stressors and thrive in the future.

CR-2: Strengthen existing community systems to create resilience to both short-term shocks and long-term change.

Opportunities for action:

1. Host community adaptation forums to discuss expected climate change impacts and how to prepare.
2. Implement and increase involvement in the Resilient Neighborhoods Network to encourage and reward neighborhood-level resilience building.
3. Expand the Flagstaff HEPA Purifier Program to increase resilience to smoke and low air quality, especially for the most disproportionately impacted.
4. Incorporate adaptation-oriented actions from the 2018 Flagstaff Climate Action and Adaptation Plan into this Carbon Neutrality Plan.
5. Incorporate climate change adaptation principles into various other City plans, like the Flagstaff Regional Plan and the Utilities Integrated Master Plan.

Six additional target areas discuss specific ways to further community resilience:

- Housing for All – page 69
- Inclusive Recreation – page 76
- Water Security – page 111
- Healthy Forests and Open Spaces – page 119
- Health and Safety – page 130
- Economic Prosperity – page 139

Equitable Systems

Flagstaff will ensure the fair and just distribution of the benefits of climate action and strive to reduce the unequal burdens created by climate change.

WHAT IT MEANS

Equity is defined as the just distribution of the benefits of climate protection and alleviation of unequal burdens created by climate change. This plan defines disproportionately impacted communities in Flagstaff within the Approach chapter of this Plan on page 30.

Acting equitably requires identifying disproportionately impacted communities, analyzing impacts on these communities, and proactively working to protect them from negative impacts of climate change. These communities contribute the least to greenhouse gas emissions but suffer the greatest effects of climate change and its turbulent impacts. Historical and political systems play a significant role in creating this disparity and will not be easily dismantled.

Equity is an overarching principle that must be integrated into the implementation of this Plan. These principles are located in the *Our Neighborhoods* action umbrella because the necessary changes are not limited to one sector. They must be community-wide, integrated throughout our neighborhoods and the way we do business.

Equity is reflected in the third overarching goal of this plan:

Goal 3: **Address climate change in a manner that prioritizes those most impacted and ensures the costs and benefits of climate adaptation and mitigation are equitably distributed.**
Climate change disproportionally impacts communities of color and low-income neighborhoods. These communities contribute the least to greenhouse gas emissions but suffer the greatest effects of climate change and its turbulent impacts.

HOW WE'LL GET THERE

Considering equity when implementing carbon neutrality goes beyond merely distributing resources equally. Providing equitable access requires meeting community needs in the context of existing vulnerabilities and inequalities. Equity is a guiding principle throughout the Plan implementation process through the following practices:

- Design policies and programs that serve disadvantaged communities first. Target policies and programs at communities experiencing high pollution burdens, low-income, poverty, health issues, and exposure to climate hazards.
- Engage with the community. Proactively engage community leaders on an ongoing basis.

- Use the "operationalizing equity checklist" of the 2018 Flagstaff Climate Action and Adaptation Plan when implementing actions.

Ensuring that participation in climate action is accessible to the entire Flagstaff community will require considering equity in policy, outreach, and infrastructure development. City staff will work to involve diverse community voices from the start of any new initiative and will track progress towards advancing equity.

The most effective climate initiatives achieve greenhouse gas emissions reductions, reduce vulnerabilities, and serve disadvantaged communities. Taking climate action can create opportunities for underserved communities and accelerate the development of market-based solutions. For example, some cities have begun selling used electric fleet vehicles to members of their communities to ensure lower-cost electric vehicles are available to a wider spectrum of the community.

It is also possible that climate action strategies may lead to adverse, unintended impacts. For example, improving bike lanes and adding open space could increase the speed of gentrification and displacement, while additional City fees could add new burdens for low-income communities. The potential for unforeseen impacts to the community will be considered during Plan implementation, and efforts will be made to anticipate and address any such impacts or burdens as they arise.

The City will rely on the concept of **targeted universalism** – defined as "setting universal goals pursued by targeted processes to achieve those goals. Within a targeted universalism framework, universal goals are established for all groups concerned. The strategies developed to achieve those goals are targeted, based upon how different groups are situated within structures, culture, and across geographies to obtain the universal goal. Targeted universalism is goal oriented, and the processes are directed in service of the explicit, universal goal."[10] Target universalism involves supporting the needs of specific groups, in order to achieve our overall goals. Flagstaff will use a targeted universalism approach to ensure that ALL groups can benefit from climate action, from the most underserved populations to the general population.

To further the goals of the Climate Emergency Declaration, the City will dive deep into equity and resilience over the next year. We will host conversations with the community about these elements of climate action, and how we can create systems of accountability as we implement our carbon neutrality goals.

EQUITY AND ADAPTATION CONSIDERATIONS

Adaptation is incredibly important to building equitable systems. Adapting to and preparing for climate change will make Flagstaff more equitable by decreasing the negative impacts of climate change for all residents, and especially for the most disproportionately impacted. If equity is advanced without consideration for future changes and setting the foundations for resilience, the gains in community equity could be lost during a short-term event or over time as the community faces widespread change.

[10] https://belonging.berkeley.edu/targeteduniversalism

STRATEGIES TO ACHIEVE EQUITABLE SYSTEMS

ES-1: Incorporate equity as a foundational element of every climate action the City develops and implements.

Opportunities for action:

1. Analyze each climate action through an equity lens, to ensure that mitigation actions (1) do not have detrimental effects on Flagstaff's underserved populations; (2) are targeted to serve vulnerable community members, and therefore are accessible to the larger community; and (3) distribute the benefits of climate action equitably.
2. Provide equity training opportunities for City staff and leadership.

ES-2: Proactively engage community members on an ongoing basis.

Opportunities for action:

1. Launch an equity advisory committee to provide feedback on the City's climate action programming and engagement strategies.
2. Host community conversations to identify and begin to address community vulnerabilities and how different groups are at risk as a result of climate change.
3. Engage the community in conversations to increase awareness of climate risks, climate impacts, and ways people can take action.
4. Support neighborhoods in strengthening relationships and resilience.
5. Support K-12 teachers in teaching climate change curriculum and provide in-school lessons on climate change and climate action.
6. Develop opportunities for youth engagement and leadership in climate action.

ES-3: Design targeted climate policies and programs to serve disproportionately impacted communities first.

Opportunities for action:

1. For each climate action, identify disproportionately impacted communities that the programming is targeted to serve, as well as any barriers to accessing both City programs and the benefits of the action.

ES-4: Actively seek to recognize past harms, repair trust, and build deeper relationships with community members.

Opportunities for action:

1. Build relationships with organizations and community leaders serving disproportionately impacted communities.
2. Identify areas where disproportionately impacted groups have already been affected by climate change, and where gaps in trust might exacerbate existing disparities in the community.

The Lived Black Experience in Flagstaff

In 2020, the Lived Black Experience CommUnity Coalition hosted a series of community dialogues to highlight the experiences of black residents of Flagstaff and create and to build a strategic framework for truth, justice, and racial reconciliation.

The Lived Black Experience Strategic Plan highlights the need for greater engagement and work to address the needs and concerns of Flagstaff's Black community. The Plan begins by recognizing past and current narratives:

> "Where does the story of Black Flagstaff begin? The answer to this seemingly simple question is complicated by decades of lost or forgotten history, conflicting narratives, and a marked lack of engagement with the stories of Black Flagstaffians whose legacies speak of the enduring capacity for hope, the richest pursuits of positive change and cultural unity among the poorest citizenry and oft-forgotten neighborhoods."[11]

This statement reflects the need for engagement with Flagstaff's underserved community members and community leaders. Community outreach and relationship building is a necessary part of climate action and achieving our goals. The City will work to incorporate the recommendations of the Lived Black Experience Strategic Plan into the implementation of this Carbon Neutrality Plan.

The City will look to build relationships with other underserved community groups and access similar resources to shape its policies and programming.

[11] Access the Flagstaff's Lived Black Experience Strategic Plan at https://www.southsideflagstaff.com/black-lived-experience-town-halls

Decreased Dependence on Cars

Flagstaff will transform our transportation and land use systems so that we depend far less on cars, reducing vehicle miles traveled (VMT) and shifting trips to walking, biking, and the bus.

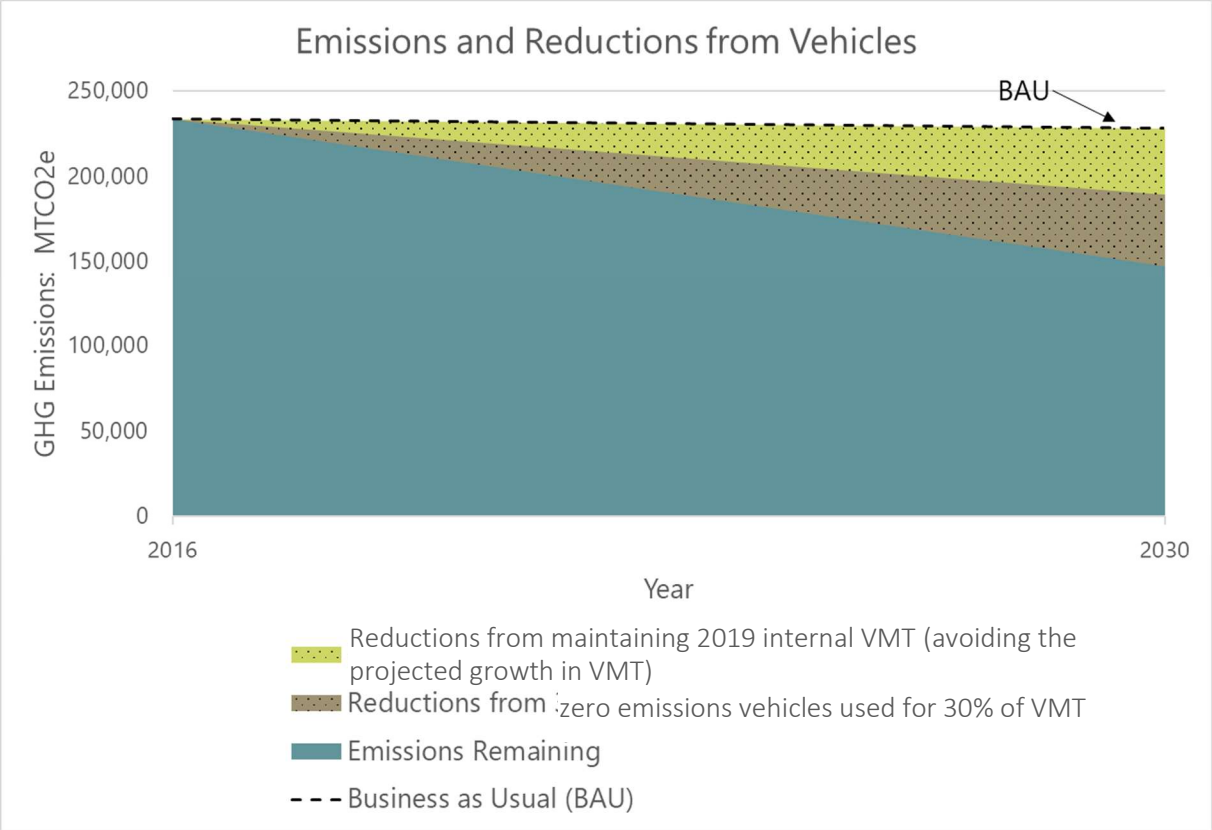


Figure 7: Projected emissions reductions from electric mobility and decreasing dependence on cars, compared to the emissions in the business as usual scenario..

WHAT IT MEANS

Reductions in greenhouse gas (GHG) emissions from the transportation sector will require enhancing community mobility and decreasing community-wide vehicle miles traveled (VMT) – or the miles Flagstaff residents travel in cars every day. This reduction in VMT must be simultaneously accomplished with a transition to clean, low- and zero-emission vehicles (see Electric Mobility Target Area on page 81). Because emissions from transportation account for around 30% of Flagstaff's community GHG emissions, reducing commuting miles and increasing equitable access to goods and services are essential to effective action.

How do we account for transportation by visitors? Or for through-traffic?

There are multiple types of car travel in Flagstaff: some trips are made by residents, going from home to a local store. Other trips are made through Flagstaff without stopping at all. The City accounts for these trips differently.

Starting with the 2019 Greenhouse Gas Inventory the City starting using the "internal vehicle miles traveled (VMT)" metric when quantifying emissions from vehicle travel in our community. This is different from the "total VMT" metric, which considers all vehicle miles travelled on our roads, including "through trips" – i.e. vehicles on I-40 that pass by Flagstaff on their way to other destinations. The "internal VMT" metric considers only trips that both start and end within the community boundary. Both the internal and total VMT metrics are determined each year by Metroplan Flagstaff.

The decision to use the "internal VMT" metric was based on considerations relating to the City's sphere of influence – the actions we can take to make our community more connected and less dependent on cars while in town will have little to no effect on the traffic simply passing through. Our community also has a unique form of "through trip" transportation in the 100+ BNSF trains passing through town daily. Finally, as a community with an economy that is largely based on tourism we want to welcome people to our City – and once here, tourists, like locals, will be able take advantage and utilize the systems put in place to make our town less dependent on cars for getting around during their stay.

HOW WE'LL GET THERE

Vehicle emissions are a result of a combination of factors: vehicle fuel efficiency, the carbon content of the fuel, and vehicle miles traveled (VMT). Gains in the first two areas may be potentially offset by losses in the third (VMT). Transitioning to electric vehicles (EVs) does not reduce transportation sector emissions enough in the near-term. Therefore, it is important that while Flagstaff adopts EVs, action is taken to simultaneously reduce VMT through climate-conscious land use planning and encouraging switching trips from single-occupancy to transit, walking, and biking.

Transportation costs are a significant expense for households. Car ownership can often be a burden for low-income families: AAA calculates that in 2020 car ownership cost $9,561 per year.[12] Promoting the adoption of personal single-occupancy electric vehicles does nothing to address these existing inequities. Land use decisions can also increase both transportation and housing costs. Transportation costs tend to be lower for those living in neighborhoods where it is safe and accessible to walk, bike, or take transit. Parking requirements add to the cost of housing, and single-family neighborhoods have an exclusionary history that in many ways continues today. Promoting these modes of transportation and reducing VMT both reduces emissions and is more equitable.

[12] https://magazine.northeast.aaa.com/daily/life/aaa/costs-more-than-ever-to-own-a-car/

The City can reduce dependence on cars on multiple fronts: prioritizing pedestrian and bicycle infrastructure development and enhancements can help make walking and biking an easy choice for many trips. This will happen through alignment with and implementation of the Active Transportation Master Plan, adopted by the Flagstaff City Council in November 2022. The City of Flagstaff will collaborate with Mountain Line, Flagstaff's transit agency, to maintain and enhance multi-modal transit services and related facilities, including better access to and from transit.

There are several transportation projects that are already considered in Flagstaff's transportation future, which will likely increase VMT. Road expansion projects and greenfield development, like the John Wesley Powell Boulevard extension, align with the goals of the most recent Regional Transportation Plan (2017), which projects VMT more than doubling over the next 70 years. Multiple new neighborhoods are planned on the edges of Flagstaff that are suburban in nature and will increase Flagstaff's VMT. These already-planned projects will increase the difficulty of holding VMT to 2019 levels. Flagstaff will need to balance these baked-in projects with its climate goals to envision a transportation and land use agenda for the coming decades. Two upcoming Plan processes, the Flagstaff 2040 Regional Transportation Plan and the Flagstaff 2040 Regional Plan will present opportunities for Flagstaff to weigh its carbon neutrality goals with other community priorities.

What would it take?

As part of the development of this Plan, we surveyed over 800 community members about what factors would convince them to choose biking, walking, or transit in favor of their single occupancy vehicle when they visit friends or go to work. There were common themes in these responses: shorter distances to travel, more robust and connected bicycle and pedestrian infrastructure, increased transit frequency, and increased feelings of comfort and safety when using the existing infrastructure. Some responses were from people who already bike, walk, and take the bus to do these things! Even those responses included improvements in infrastructure and shorter distances to get to daily needs.

These responses shaped the Decreased Dependence on Cars section; we know that more people will choose to leave their cars at home as infrastructure continues to improve and multi-modal transportation becomes more of a priority throughout Flagstaff. Most of these changes will require a big shift, especially in our infrastructure. To create more connected and robust bike and pedestrian infrastructure, lanes will need to be taken away from cars. To decrease the distance needed to travel for daily needs, we will need to increase density and mixed-use development. These actions will require a shift in priorities, and they are possible.

The Big Shift: Rethinking mobility

Flagstaff must commit to a fundamental shift in the way we think about our road systems and how we move around our community. This is necessary to both achieve our climate goals and to improve quality of life, health, and affordable living in Flagstaff.

The emphasis of our transportation planning must pivot from congestion mitigation to mobility improvement to improve the way community members move around town, outside of their cars. As Flagstaff grows, we have a choice: we can invest in building more roads and more lanes to attempt to reduce traffic, knowing that adding more vehicle lanes rarely improves traffic flow. Alternatively, we can manage demand, decreasing the demand for car trips and car infrastructure - thus helping people to choose active, healthy, enjoyable transportation while reducing the number of cars on the road. We must reimagine how our transportation can work, and shift our approach in the City's policies, processes, and plans, from the Regional Plan and the Regional Transportation Plan to our policies that currently encourage driving and parking.

At the same time, our community must better utilize our limited space by accepting and celebrating appropriate density in our neighborhoods and activity centers. In order to maintain the 2019 vehicle miles traveled (VMT) levels observed while our community grows, it is expected that actions will need to be taken to increase residential density by at least 20%.[13] Density reduces emissions from building energy use and transportation, while also contributing to more lively, welcoming, and diverse neighborhoods. Land use solutions are complementary to our transportation actions and impact our ability to achieve our transportation and emissions goals. Increases in density must be accompanied by efforts to make our neighborhoods more complete, reductions in the distance to transit stops, increases the frequency of transit buses, and the development of protected bike infrastructure and complete sidewalk networks.

Flagstaff is growing and will continue to do so. To welcome new neighbors to Flagstaff, we need to create homes for those who live here. To add more homes in our limited land area, we must increase the number of homes in our existing and new neighborhoods – from allowing backyard cottages to welcoming small and mid-sized apartment buildings and tall buildings where appropriate.

Flagstaff can learn from some of the most successful cities in the world, who are focusing on converting car space into more effective streets and public spaces that accommodate people outside of their cars, walking,

Flagstaff is Growing

Flagstaff is projected to grow significantly in the coming decades. We must prepare for greater than expected growth as the population center of Phoenix – now exceeding five million people – continues to grow, and as summers in central Arizona become hotter. We can expect visitation and migration to Flagstaff to increase, with domino effects on Flagstaff's housing market and land use.

[13] https://ww2.arb.ca.gov/sites/default/files/2020-06/Impacts_of_Residential_Density_on_Passenger_Vehicle_Use_and_Greenhouse_Gas_Emissions_Policy_Brief.pdf

biking, gathering, recreating, or shopping. Flagstaff's peer cities are also recognizing the high cost of parking, both in its contributions to housing costs as well as the way that it shapes our neighborhoods around cars. Cities across the country are allowing buildings to be built without parking or charging more for parking on the street and within buildings, making a trade-off between ample parking and a walkable and affordable community. Flagstaff can reduce the amount of space dedicated to parking and car storage in our community in order to improve affordability, better utilize limited space, and reduce automobile subsidies.

Flagstaff residents deserve what are called **15-minute neighborhoods**: places to live where you can meet most of your daily needs with a simple walk. Some of our neighborhoods already function this way: someone living in the Townsite neighborhood can reach office buildings, a grocery store, the post office, ten restaurants and even a park within a 15-minute walk. Sunnyside and Southside similarly have access to jobs, small neighborhood stores, dining, and community centers within their neighborhoods. Townsite, Southside and Downtown Flagstaff all were built before car dependence – meaning that they were built for a people to meet their needs without use of a personal automobile. While Sunnyside is a comparatively newer neighborhood, its street grid, flexible zoning and moderate density all contribute to walkability, vibrancy and a variety of businesses and retail establishments. Flagstaff can choose to allow our neighborhoods to evolve in ways that could mimic these traditional neighborhood designs, providing for a higher quality of life for Flagstaff residents.

The Big Shift to Decrease Dependence on Cars will require Flagstaff to change its policies to:

- Reduce or eliminate parking requirements across all building types.
- Increase density in residential neighborhoods by 20%.
- Increase the amount of accessory dwelling units in neighborhoods.
- Integrate density into residential neighborhoods through more flexible zoning codes that allow more housing options including duplexes, triplexes and potentially even small retail stores or apartment buildings.
- Convert some car lanes into micro-mobility zones.
- Allow neighborhoods to reclaim their streets through slow ‘safe and social’ zones that allow for play areas, socializing space, areas for businesses to operate, and safe travel for all modes.
- Prioritize transit over car movements in transportation operations and planning.
- Shift City transportation policies to actively manage transportation demand and reduce vehicle miles traveled.

These changes will require significant revisions to Flagstaff’s zoning codes, transportation engineering standards, and other policies. The City must invest in analysis and staffing to undertake this big shift. Through these changes, we will be better equipped to achieve deep reductions in greenhouse gas emissions from our transportation sector while improving livability, health, and community resilience in Flagstaff.

EQUITY AND ADAPTATION CONSIDERATIONS

Equity: Working to decrease our dependence on cars can help improve community equity. Owning a car is expensive. By offering robust, diverse transportation options at lower costs, low and middle-income residents will have more affordable mobility options.

The City will also consider how transportation policies will affect other groups: Due to disability, age, or other factors, some community members may be unable to walk, bike or take the bus; others are unable to drive. These factors will be considered when designing and implementing policies.

Adaptation: Density and robust, diverse transportation systems inherently increase community resilience by providing multiple transportation options, as opposed to designing around one mode – cars. By increasing density in areas that are less prone to flooding and fire, Flagstaff can be better prepared for an increase in these events.

TARGET AREA GOALS

Goal	Year
Hold vehicle miles traveled (VMT) in the community to 2019 levels. This is a 17% reduction from our business as usual projections in VMT growth.	2030
54% of all trips will be taken by biking, walking, or taking the bus.	2030
34% of all work commute trips will be taken by biking, walking, or taking the bus.	2030
Reduce vulnerability of new developments to fire and flooding, by encouraging development to locate in areas of lower vulnerability.	2030



STRATEGIES TO ACHIEVE DECREASED DEPENDENCE ON CARS

DD-1: Encourage vibrancy, appropriate density, and attainability in existing neighborhoods, so that more residents live within walking distance of their daily needs.

Opportunities for action:

1. Incorporate more flexibility and appropriate density into residential neighborhoods, such as accessory dwelling units, duplexes, triplexes, small apartment buildings and other housing options to provide more diverse and attainable housing opportunities, create vibrant neighborhoods, and decrease travel distances.
2. Lower or eliminate parking minimums for new developments to decrease housing costs, promote decoupling rent from parking costs, reduce impervious surfaces, and create more walkable neighborhoods.
3. Change City policies to increase transit-supportive density, redevelopment, infill development, mixed housing types, multiple story buildings, and mixed-use transit nodes throughout Flagstaff.
4. Encourage the rapid development of carbon-neutral Accessory Dwelling Units (ADUs) to increase the housing stock.

DD-2: Create inclusive networks for walking and biking that are continuous, attractive, safe, comprehensive, and convenient for people of all ages.

Opportunities for action:

1. Fund and implement the Active Transportation Master Plan (ATMP).
2. Fully fund bike and pedestrian infrastructure capital improvements to create complete and comfortable bike and pedestrian networks, safe routes to school improvements, and a complete and comfortable system of pedestrian crossings and sidewalks.
3. Convert appropriate streets to multi-modal and complete streets through road diets or creating multi-modal lanes. When right-of-way is limited, redistribute the available space to accommodate more users and better reflect climate priorities.
4. Create an integrated system of protected lands, the Flagstaff Urban Trail System, and trail corridors that support mode shift, public health, and affordable living.

In November 2022, the Flagstaff City Council adopted the Active Transportation Master Plan. This plan makes specific recommendations for strategies, actions, projects, and programs to improve the pedestrian and bicycle environment and implement the 'big shift.'

DD-3: Encourage Flagstaff residents and visitors to walk, bike, roll and take the bus.

Opportunities for action:

1. Significantly increase funding for programming to increase biking and walking, improve micro-mobility options, provide encouragement programming and infrastructure improvements in school zones, and increase transportation demand management (TDM) programming.
2. The City will improve support to incentivize City employees to commute by walking, biking, and transit, such as employee showers at work, benefits to employees for walking, biking and taking transit, or support for carpool coordination.
3. Reconsider how and where we allow pedestrian crossings to create safe and convenient crossings based on land use, activity centers, transit stops, and trails.

Investing in walking and biking

A one-time investment of $90 million is needed to build comprehensive walking and biking networks. These networks are necessary to get people to walk, bike and take the bus. We cannot ask people to change their behavior if those behaviors are not easy, safe, comfortable and even fun. To further support these choices, the City will need to provide $600,000 to $1,000,000 per year for programming.

While these investments seem large, from an infrastructure perspective creating these networks will cost similarly to a large roadway project. The recently approved Lone Tree Bridge over the railroad tracks will cost a projected $72 million, and simply designing a highway interchange can cost $3 million. We must invest in biking, walking and transit with the same level that we invest in supporting infrastructure for cars.

What is electric micro-mobility?

Micro-mobility technology is a rapidly-evolving category of light-weight individual transportation devices. Examples include electric bikes (e-bikes), electric scooters, Segways, electric skateboards, and hoverboards.

Electric micro-mobility provide easy and affordable transportation for many. These devices are a necessary part of our work to reduce VMT: people can easily substitute many short car trips with a trip on scooter or an e-bike. The City can encourage folks to use these devices to travel: benefits go beyond just the individual user's cost savings and health benefits, since these devices reduce the need for car parking, reduce air pollution, and reduce traffic on our roads. See the Electric Mobility Target Area on page 81 for more information.

DD-4 Transform transportation policies and planning to incorporate greenhouse gas emissions analysis and reduce dependence on driving.

Opportunities for action:

1. Incorporate transportation demand management (TDM) philosophy and policies into transportation and development engineering and planning processes, by changing internal policies and potentially hiring a TDM manager.
2. Evaluate the greenhouse gas emissions and vehicle miles traveled (VMT) of transportation capital infrastructure projects, transportation system operations, and new development planning, and update the Traffic Impact Analysis (TIA) process to incorporate greenhouse gas emissions impacts into the decision-making process.
3. Actively work to lower emissions and VMT created by new developments, shifting to mobility enhancement strategies rather than congestion reduction.
4. Require large new buildings and new neighborhood developments to submit carbon neutrality alignment statements, to increase collaboration between developers and the City and to communicate how developments contribute to the City's carbon neutrality goals and how the property will work to manage transportation demand.
5. Involve more stakeholders in City capital and infrastructure project planning by bringing projects to citizen commissions and interdepartmental staff review, enabling review through the lens of other community objectives including public health, sustainability, and economic vitality.
6. When working with developers on large new developments, analyze and balance community priorities when making requests for infrastructure improvements.

How Could We Account for Greenhouse Gas Emissions in Transportation Planning?

Municipalities across the country are beginning to incorporate greenhouse gas (GHG) emissions into transportation planning projects. Fully accounting for GHG emissions allows us to understand the true impact of transportation projects, which often lead to more driving.

Fortunately, accounting for GHG emissions can be simple – most transportation analyses include a consideration of vehicle miles traveled or how a project will increase car trips. These measures are proportionally related to greenhouse gas emissions – incorporating greenhouse gas emission analysis into a traffic impact analysis (TIA), for instance, can be as simple as applying a greenhouse gas co-efficient to the number of new trips we anticipate.

The City will work with transportation and development stakeholders to identify the best way to include greenhouse gas emissions in transportation planning and engineering processes and decisions.

What is Transportation Demand Management (TDM)?

Transportation demand management, often called TDM, is a well-established concept defined as a transportation policy approach that reduces demand for single-occupant vehicle use, while simultaneously encouraging use of more sustainable travel modes, including walking, biking, and transit. TDM is described in the Flagstaff Regional Transportation Plan Blueprint 2040 as follows: "TDM enhances the utilization of roads by reducing overall demand through mode shift from single occupant vehicles to other means of transportation that can equally or better meet their needs... With TDM serving as an organizing principle, physical transportation infrastructure and land use will be designed so that alternative transportation is naturally encouraged and the maximum efficiency of the transportation network is realized."

Why is TDM important? An efficient and equitable transportation system offers individuals multiple feasible options for moving around their community whether it be by biking, walking, public transit, driving, or another mode. Unfortunately, most U.S. transportation systems have been built centered around one mode of transportation above all others: single-occupancy vehicles. Many policies and land-use decisions often favor single-occupancy vehicles and deprioritize all other modes of transport. This is problematic as increases in use of single-occupancy vehicles are often associated with increases in roadway congestion, air pollution, greenhouse gas (GHG) emissions, and annual vehicle-related costs.

TDM can maximize traveler options. What if instead of continuing to build infrastructure that encourages the use of vehicles, our transportation planning focused instead on making alternate modes of transportation more desirable and feasible options? This is exactly what TDM strategies seek to do. Another way to think about TDM is maximizing traveler options or systematic mobility management. TDM helps to make our transportation systems function more efficiently in a way that is cost-effective and impactful in the long-term. More than a specific set of solutions, TDM is a philosophical approach that can be incorporated into decisions made related to city zoning, land-use, development, and much more.

TDM at work. TDM strategies can be numerous and diverse allowing every city the opportunity to focus on options that work best for their unique setting. Some examples of TDM include: increasing the amount and accessibility of information on local alternate modes of transport, creating successful rideshare and carpooling programs, disincentivizing driving by increasing parking costs, providing incentives for using transit or other alternate modes, or restricting the number of parking spaces new developments can build. Like most cities, Flagstaff is already implementing multiple actions that can be considered components of TDM; examples include the use of parking pricing downtown, provision of online maps and resources for the FUTS and other urban bike routes, and the ecoPASS program which offers annual bus passes at reduced rates. TDM actions become even more effective when centralized under a comprehensive TDM program with a designated workforce. Successful TDM programs already exist in many states and an increasing number of cities (such as the City of Tempe) are working to develop comprehensive programs of their own.

Potential for local implementation. One example of a highly effective TDM strategy that has potential for implementation in Flagstaff is unbundled parking. Oftentimes at residential rental properties, costs of parking are automatically added into tenant rental costs. An alternate option would be to "unbundle" parking and rental costs allowing tenants to choose exactly how many parking spaces they want to pay for. Having parking costs as a separate fee allows tenants to better conceptualize the costs associated with having a car or multiple cars. This strategy also disincentivizes developers from building an excess amount of parking, the cost of which would ultimately be placed on tenants. Unbundled parking is already being utilized in Arlington County, Virginia and has been highly successful at promoting alternate transportation options as reported in a 2018 Mobility Lab study. San Francisco, Berkeley, and Seattle are examples of other cities that have also made the move to unbundle parking costs from rent.

DD-5: Invest in comprehensive and equitable transit**.**

Opportunities for action:

1. Implement the transit-supportive recommendations of the Northern Arizona Intergovernmental Public Transportation Authority (NAIPTA) Five-Year Transit Plan for the Mountain Line to increase ridership and transit frequency on the permanent transit network.
2. Prioritize transit trips over car trips and the movement of buses over cars to improve bus operations on Flagstaff's road network, through mechanisms such as signal prioritization, bus slip lanes, and dedicated bus lanes.
3. Improve how the City incorporates transit needs and requests into the transportation analysis performed for large new developments.

DD-6: Proactively invest to protect Flagstaff's clean air status.

Opportunities for action:

1. Create a local ordinance to protect air quality and prevent National Ambient Air Quality Standards (NAAQS) non-attainment status and to support and fund mobility enhancement.
2. Incorporate greenhouse gas impact analysis, based on greenhouse gas emissions estimates, into Flagstaff area transportation strategic planning and routine analysis.
3. Create anti-idling loading zones to reduce congestion, maintain access to parking and allow public safety access.

What is NAAQS Non-attainment?

The State of Arizona monitors air quality for pollutants above the National Ambient Air Quality Standards (NAAQS), as outlined in the Clean Air Act. NAAQS non-attainment classification occurs when pollutants exceed the NAAQS standards.[14] Once a county receives reaches non-attainment classification, communities must make investments to reduce and control pollutants.

Coconino County is currently in attainment of the NAAQS. However, the Arizona Department of Transportation has noted that the expected growth of Coconino County could threaten Coconino's current attainment status.[15] Flagstaff can invest in keeping its air quality clean *now*, to avoid future regulation and mandates.

[14] Learn more about Arizona Departhttp://azdeq.gov/nonattainment_areas
[15] Air Quality Sustainability Program in Coconino County: https://www.flagstaff.az.gov/ArchiveCenter/ViewFile/Item/1501

Improvements in transit infrastructure, operations, and encouragement

Mountain Line provides transit service to the City of Flagstaff. Mountain Line and the City must partner to adequately fund improved transit infrastructure and operations in order to move more trips onto transit.

High-priority transit improvements include:

- Identify funding to double service on Mountain Line routes to create high-frequency bus lines that are more usable and attractive for riders. This would require $5 million in additional funding annually.
- Partner with Coconino County to increase transit service coverage and frequency in the greater Flagstaff area. Consider enhancing buses, vanpooling, and shuttle services for outlying communities such as Kachina Village and Bellemont.
- Develop transit services for visitors to Flagstaff, including to popular destinations such as Snowbowl, Twin Arrows, the Grand Canyon, and between Phoenix and Flagstaff.
- Focus on improving access to transit stations by helping riders to complete their 'first mile' and 'last mile' trips to get to stations.
- Consider eliminating bus ridership fees, encouraging organizations and businesses to purchase transit passes for their employees or provide in-house incentives for employees who switch from driving to public transit.



Housing for All

Flagstaff will create a vibrant and more livable community through increased housing options for residents at all income levels and family sizes.

Flagstaff's 10-Year Housing Plan – vision statement

This Target Area incorporates the goals and content of Flagstaff's 10-Year Housing Plan, developed in 2021 to respond to Flagstaff's Housing Emergency. The Flagstaff City Council unanimously adopted the 10-Year Housing Plan on February 15, 2022.

WHAT IT MEANS

Housing is a collective benefit



There is a strong and growing movement among Flagstaff community members, housing advocates, and City Council to ensure all Flagstaff residents have access to affordable housing. On December 1, 2020, City Council declared a Housing Emergency in Flagstaff, committing to prioritizing affordable housing within City operations to create safe, decent, and affordable housing opportunities for all community members.

The United States Department of Housing and Urban Development (HUD) defines affordable housing as spending no more than 30% of monthly gross income on housing costs. Households that spend more than 30% on rent or mortgage costs are considered "housing cost burdened"; households spending more than 50% are "severely housing cost burdened." Within the Flagstaff 10-Year Housing Plan, "affordable housing" is defined as households paying 30% or less of monthly gross income towards the home in which they reside, using HUD's definition.

In an expensive housing market like Flagstaff's, some form of subsidy is necessary for housing to be affordable for many lower income households. Housing subsidies come in many forms. Housing subsidy types include rental assistance, eviction prevention, and down payment assistance. Other forms include non-profit affordable housing, public housing, voucher programs, and some forms of co-operative and private sector housing. Throughout the Housing Plan, the term "housing subsidy" is defined as any form of financial assistance aimed towards decreasing housing costs.

The stories we hear from residents and local reports verify that a lack of affordable housing is not just an individual problem, but rather a community problem that has collective consequences that negatively impact Flagstaff. The Flagstaff 10Year Housing Plan demonstrates how the consequences of failing to create, preserve, and provide access to affordable housing in Flagstaff are linked to lasting negative effects on our neighborhoods, health, children, environment, and jobs. The Housing Plan provides a path forward for the next ten years and offers solutions to reducing Flagstaff's Housing Emergency.

Flagstaff Housing and Affordability Challenges: By the numbers

The statistics below were gathered in 2021 during the development of the Flagstaff 10-Year Housing Plan to illustrate the scope of Flagstaff's housing challenges.

- 47% of all households are low-income and 65% of all households are low to moderate income.
- Flagstaff is increasingly unaffordable. Since 2011, the median sales price of a home rose by 119%, while Area Median Income rose by only 16%. In 2021, the median sales price of a home is $502,500, and the median annual gross income is $69,200.
- Housing Cost Burden Analysis: 27% of homeowners and 57% of renters are housing cost burdened, meaning that 22,073 Flagstaff community members pay more than 30% of their monthly income towards housing (US Census 2019 American Community Survey).
- Flagstaff's cost of living is 13.1% higher than the national average.
- Flagstaff's cost of housing is 29% higher than the national average.
- According to a community wide housing survey, more than one in four respondents stated they were either "nearly certain" or "very likely" to relocate due to housing costs.

Housing is Flagstaff's Infrastructure

Safe, decent, and affordable housing is a vital part of Flagstaff's infrastructure. Because housing is a basic human need that must come first, every unit counts. Affordable housing improves health and the environment, connects people to neighbors, bolsters housing productivity and economic growth, and supports local job creation.

Housing is interconnected to:

- Healthcare
- Neighborhoods and equity
- Sustainability
- Zoning and land use
- Economic opportunity

See the Flagstaff 10-Year Housing Plan for a narrative detailing our community's interconnected housing challenges and shared solutions.



Source: Live Well Arizona –Elements of a healthy community

Neighborhoods & Equity

As Flagstaff plans strong action on both housing and climate, we must consider the implications of our past. The following is an except from the 10-year Housing Plan:

> For decades, starting at least in the 1930s, low-income and minority communities were intentionally cut off from lending and investment through a system known as redlining. Today, those same neighborhoods suffer not only from reduced wealth and greater poverty, but from lower life expectancy and higher incidence of chronic diseases that are risk factors for poor outcomes from COVID-19. Housing, economic, and social policies should aim to eliminate those risks and undo the unfair burdens of structural racism, both past and present.

How our neighborhoods are designed and who can access them affect our community's health, housing access, resilience, and greenhouse gas emissions. For the complete discussion on neighborhoods and equity, see page 44 of Flagstaff's 10-Year Housing Plan.

HOW WE'LL GET THERE

Flagstaff's 10-Year Housing Plan

Flagstaff residents have made our mountain town the resilient community that it is today. As the City of Flagstaff works to provide equitable solutions to address the Housing Emergency for local residents, we will strive to ensure that affordable housing opportunities and subsidies are available for residents at all income levels and all stages of life.

The City of Flagstaff's mission—to protect and enhance the quality of life for all—directly aligns with the overarching goal of the 10-Year Housing Plan. Together with funding, partnerships, and the community's support, the City of Flagstaff can advance housing options for the full spectrum of residents who call Flagstaff their home.

The 10-Year Housing Plan establishes one overarching goal supported by two fundamental elements that together will significantly impact housing attainability. This goal will be achieved through the implementation of the policy initiatives and strategies described in the Plan.



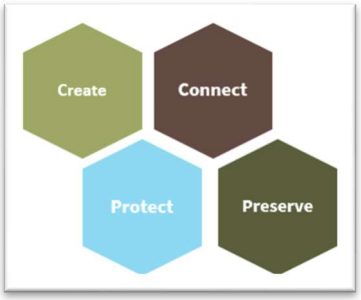
TARGET AREA GOALS

Goal	Year
Reduce the current affordable housing need in our community by half over the next ten years.	2031
Impact at least 6,000 low-to-moderate income Flagstaff residents through a combination of unit creation or subsidy provision.	2031
Create or preserve 7,976 housing units by 2031 with a minimum of 10% of them being affordable. This will increase the overall supply of market rate, workforce, and affordable housing occupied by local residents.	2031

Key Elements of Flagstaff's 10-Year Housing Plan

The Flagstaff 10-Year Housing Plan outlines a single overarching goal with thirteen (13) robust policy initiatives and fifty-eight (58) comprehensive strategies. The policy initiatives and strategies provide a foundational framework for establishing housing programs, prioritizing staff work, and allocating necessary funding for implementation. Community outreach identified four distinct needs related to Flagstaff's housing emergency:

- **Create** housing options for households at all income levels and family sizes occupied by local residents.
- **Connect** people to equitable housing solutions
- **Preserve** affordable housing
- **Protect** people from housing discrimination and remove housing barriers.



Implementation of the Housing Plan will be accomplished through the City's budget process, collaboration with City staff, and private, public, and nonprofit partnerships. Over the next ten years, the City will continue to advance housing opportunities for all Flagstaff residents. The 10-Year Housing Plan is the City's foundational framework for establishing work programs, prioritizing staff work, and allocating the necessary funding for its implementation.

To ensure the principles of Flagstaff's 10-Year Housing Plan are represented in this Carbon Neutrality Plan, this Housing Target Area integrates the four policy areas above – Create, Connect, Preserve and Protect – as **strategies**.

For the Detailed List of Policy Initiatives and Strategies that includes scope, term lengths, and City collaboration, please see the 10-year Flagstaff Housing Plan, page 52.

EQUITY, ADAPTATION, AND MITIGATION CONSIDERATIONS

Housing is **deeply connected** to both climate change and climate action.

Equity:

- Increasing visitation and climate migration will likely **exacerbate existing housing challenges**. Climate change, particularly extreme heat, will likely lead to increased demand for Flagstaff's housing because of our cooler temperatures.
- The **cost of living** is affected by housing, transportation, and utility costs. Transportation and utility expenses are often easier to influence than housing expenses – making them attractive targets for both affordability and climate initiatives. Because Coconino County sees high rates of energy-burdened households, energy efficiency improvements, which can reduce both costs and emissions, are especially critical strategies.
- Climate change will have the most severe effects on our most **disproportionately impacted community members**. These community members may also face substantial challenges affording higher housing, utility and transportation costs.
- **See pages 14-18 of Flagstaff's 10-Year Housing Plan for an extended discussion of housing justice and equity, and page 44 for a discussion on neighborhoods and equity.**

Adaptation:

- Residents who do not have access to secure or affordable housing may face increased challenges: lower financial reserves can reduce a person's ability to **adapt** to sudden changes or emergencies.
- Our buildings can serve as **resilience assets**, or they can exacerbate vulnerabilities. For example: an energy-efficient home can maintain higher air quality during smoke events, and performs better during power outages, retaining more heat in the winter and staying cool during hot days.
- As neighborhoods change due to the climate or housing emergencies, it may affect the resilience of an area. Communities where neighbors know each other, and readily assist during a crisis, are most likely to **thrive** amidst change.

Mitigation:

- Increased **infill development and housing densities** can lead to meaningful reductions in greenhouse gas emissions. **Infill development, higher-density neighborhoods, and mixed-use buildings** can help residents take shorter and fewer trips and encourage active transportation modes like walking, biking, and transit.
- Similarly, medium- and high-density housing can bring **energy efficiency benefits**, reducing energy use for each housing unit. Attached housing, from duplexes or townhouses to apartments, requires less energy for heating and cooling, lowering the emissions generated per resident.
- **Existing homes are key** to reducing emissions and securing a healthier planet since buildings are the largest contributing sector to greenhouse gas emissions. There are small changes most residents make to use less energy and reduce utility expenses. Homeowners and landlords can affect the greatest change by investing in energy efficiency retro-fits, electrification of units, or even on-site energy production.

For an extended discussion of these considerations, see page 46 of the 10-year Housing Plan.

STRATEGIES TO ACHIEVE HOUSING FOR ALL

These strategies match the policies initiatives in the Flagstaff 10-year Housing Plan. See page 52 of the Housing Plan for the timeline, implementation, and collaboration information for each policy and strategy.

HA-1: Create housing options for households at all income levels and family sizes occupied by local residents.

Opportunities for action:

1. Incentivize the creation of affordable units through various programs and mechanisms.
2. Ensure that the Flagstaff Regional Plan includes robust affordable housing goals and policies.
3. Create a dedicated funding source for affordable housing in Flagstaff.
4. Amend the Flagstaff Zoning Code to facilitate the development of all housing types.
5. Explore regulatory efficiency and cost-saving practices.

HA-2: Connect people to equitable housing solutions.

Opportunities for action:

1. Reduce homelessness in the Flagstaff community and seek creative solutions to foster housing permanency for all.
2. Implement a framework for centering equity in proposed and existing housing practices, policies, and programs.
3. Integrate healthcare into housing programs, and housing into healthcare programs, as appropriate.

HA-3: Preserve affordable housing.

Opportunities for action:

1. Encourage the adaptive reuse of buildings.
2. Expand efforts to preserve existing housing stock.

HA-4: Protect people from housing discrimination and remove housing barriers.

Opportunities for action:

1. City Council will continue to lobby and support federal and state legislation to encourage changes to federal and state laws, and to increase the amount of funding available for the preservation and construction of affordable housing.
2. Ensure affordable housing is a part of every Flagstaff neighborhood and work to address disparate impact as part of any development or redevelopment.
3. Continue Flagstaff's commitments to further federal and Arizona Fair Housing laws in all housing-related services and programs, value the efforts of those who seek to reduce barriers to equitable housing opportunities, and provide Fair Housing education and resources to the community.

The Interconnections Between Housing and Sustainability: Shared Solutions

The Flagstaff community faces urgent challenges from housing and climate change. The City of Flagstaff recognizes that the Housing Emergency and the climate emergency share many common solutions and that advancing housing and advancing climate action are not in conflict with each other. Indeed, implementing shared solutions to both challenges can lead to a stronger, healthier, and more connected Flagstaff.

To reduce emissions and build a stronger community, Flagstaff needs to rethink its housing and transportation systems—what we refer to as 'the Big Shift.' This shift entails building our neighborhoods so they are more dense, connected, and complete, so that residents don't have to travel across town as often. These neighborhoods welcome more neighbors of varying income levels, are stronger because neighbors know and help one another, and contribute to health, as residents can take active and healthy modes of transportation to get most of what they need nearby. These neighborhoods resemble Flagstaff's oldest, strongest, and most lively neighborhoods like Southside and Townsite, which were built before people were dependent on cars. Climate action that creates these lively and strong neighborhoods can increase housing and help solve the Housing Emergency, too.

Climate action can support lower overall costs of living. When considering the high costs of living in Flagstaff, housing is the greatest concern, but transportation contributes significantly to the cost of living in Flagstaff, and often requires smaller changes to realize cost savings. Many carbon neutrality solutions can decrease transportation costs by reducing dependence on cars. Car ownership can often be a burden for low-income families: AAA calculates that in 2020, new car ownership cost $9,561 per year for families, not including significant costs to the overall community and the environment.40 Transportation costs tend to be lower for those living in neighborhoods where it is safe and accessible to walk, bike, or take transit, and if folks can be car-free, car-lite, or reduce the number of cars in their household, they can significantly reduce their cost of living. Many Flagstaff residents already are car-free or rely very little on personal vehicles, and are using the bus, biking, carpooling, and walking to meet their daily needs. Reducing how much residents must use cars can reduce the cost of living and make it so that more people can afford to live in Flagstaff.

Housing is critical to community health and overall resilience. Implementing these community solutions will require moving away from today's status quo—a status quo that does not work for many people who struggle to live in Flagstaff and is contributing to global climate change. This will require courage and change to help Flagstaff create more opportunities and become a more welcoming and inclusive community.

For an extended discussion of these interconnections, see page 46 of the Flagstaff 10-year Housing Plan.

Inclusive Recreation

Flagstaff will ensure abundant and equitable access to recreational opportunities, prepare for changes to recreation due to climate change, and reduce emissions from recreation.

WHAT IT MEANS

Flagstaff offers exceptional recreational opportunities to both residents and visitors, whether through City of Flagstaff parks, recreation centers, or access to surrounding National Forest land. These diverse recreational opportunities provide residents with the ability to achieve physical and mental health and wellness. The City of Flagstaff Parks, Recreation, Open Space and Events Division seeks to ensure access to parks and recreation, connectivity, health and wellness, inclusion and equity, and natural resource protection.

Changing conditions will affect recreation for both residents and visitors alike, and may stress the City's ability to ensure accessibility, equity and inclusion across all parks and recreation facilities. For more on how climate change will affect visitation, see the Economic Prosperity Target Area on page 139.

To prepare for low-snow years, Flagstaff will need to continue to diversify its winter recreation offerings. Summer recreation will be affected too: as temperatures rise in Central Arizona, visitation in Flagstaff will likely increase – increasing the demand for recreation in Flagstaff. During periods of high visitation, there are many more people utilizing the same recreation opportunities, whether in the City or in the nearby forests – potentially increasing both user conflicts and impacts to resources. In the late spring and early summer, drought and an increased risk of wildfire can lead to forest closures and reduced access to the local forests, which residents and visitors depend on for recreation, spiritual connection, mental health, and physical fitness. Preparing for these shifts can help the City to foster community health and wellness amidst significant change.

Parks and recreation also contribute to Flagstaff's energy use, water consumption, and transportation emissions. As the climate changes, Flagstaff's parks and recreation centers are likely to utilize more energy and water to maintain operational levels. As Flagstaff plans for evolving and growing recreation, it has the opportunity to reduce emissions from recreation, incorporate new technologies, and integrate more resilient or native vegetation.

HOW WE'LL GET THERE

As the climate changes, Flagstaff will also evolve. Because accessible recreation is a cornerstone of any healthy and connected community, the City of Flagstaff will need to anticipate changes to recreation and ensure equity and accessibility amidst change.



The Flagstaff community must prepare for increased visitation to Flagstaff during the summer months, including working to ensure that Flagstaff's ecological resources, parks and recreation facilities can sustain increases in visitation. Forward-looking planning can help Flagstaff protect ecological resources, diversify available recreational opportunities, and plan for emergencies. Sound planning can also ensure that recreational opportunities can be accessed by a broad range of residents and visitors.

Climate change may increase demands for recreation services while stressing park resources. Necessary preparations include understanding how fields will respond to increased temperatures, evaluating health risks, and preparing for increased water, electricity and fuel demands. To mitigate these impacts, the City will need to seek out diverse solutions that include efficiency improvements, changes in operations, and technological solutions.

Finally, parks and recreation opportunities can complete a neighborhood – providing affordable and accessible opportunities to improve one's mental or physical health and wellness. In this way, recreational opportunities provide critically important resilience and equity benefits to a community. The City must work to maintain our parks and recreation facilities and services – some of our most effective assets when it comes to resilience.

Meanwhile, the City must continue to work to make recreational assets easily accessible to all. The City is working to ensure every resident of Flagstaff has access to a park, recreation center or open space within a 10-minute walk. This requires strong transportation connectivity to neighborhood parks, recreation centers or open spaces. Safe and comfortable active transportation options – taking a bus, biking or walking – are critical to ensure equitable access to parks. The availability, condition and comfort of active transportation infrastructure is key to ensuring access – whether through sidewalks, FUTS trails, or even informal trails that provide connections to local parks. As Flagstaff's active transportation infrastructure expands, maintenance needs increase. To ensure that these connections are well-maintained and accessible to users of all ages, Flagstaff will need to re-envision how it supports the ongoing maintenance of sidewalks, FUTS trails, and other non-vehicular access routes. Potential solutions include the development of dependable funding sources and new collaborations with community partners.

TARGET AREA GOALS

Goal	Year
Manage and enhance existing recreation and outdoor opportunities to maximize resilience to the impacts of climate change.	2030
Accommodate the increased use of City Parks and Recreation facilities and changing maintenance needs.	2030
Reduce emissions from water and energy use at City parks and recreation facilities.	2030
Identify methods for ecosystem monitoring to assess impacts of recreation and climate change	2025

STRATEGIES TO ACHIEVE INCLUSIVE RECREATION

IR-1: Protect natural areas and ecosystem services that are most vulnerable to the impacts of increased visitation and climate change.

Opportunities for action:

1. Prioritize natural resource protection in high-demand recreational areas.
2. Enhance the Flagstaff Convention and Visitors Bureau public awareness campaign that emphasizes 'treading lightly' on the land to accommodate increased visitation and impact.
3. Maintain cooperation with County and U.S. Forest Service recreation programs to plan for and respond to increased visitation and use of recreational services and legally designated open spaces.



IR-2: Ensure equity, accessibility, and inclusion across all City of Flagstaff Parks and Recreation facilities, helping all members of the Flagstaff community to meet their health and wellness needs.

Opportunities for action:

1. Incorporate changing climate conditions and risks to community health, Parks and Recreation staff members, and facilities into the Parks and Recreation Master Plan and Legally Designated Open Space Management Plan update processes.
2. Prepare for increases in demand for programs and facilities, and impacts on Parks and Recreation capital projects, budget, staffing, maintenance, and operations.
3. Work with community partners to understand how closing sections of the nearby national forests due to fire danger impacts local residents, and develop creative approaches to help residents find alternative ways to exercise, recreate, and socialize.
4. Continue efforts to ensure that neighborhoods across Flagstaff have 10-minute access to parks, recreational opportunities or open spaces.
5. Develop a strategy to better support the ongoing maintenance of sidewalks, FUTS trails, and other non-vehicular access routes used to access recreation opportunities.

IR-3: Plan for changes to recreation, reduce emissions, and respond to the impacts of climate change on current Parks and Recreation facilities and operations.

Opportunities for action:

1. Investigate new technologies and techniques to decrease water, electricity, and fuel use at Parks and Recreation facilities.
2. Implement energy and water efficiency retrofits to decrease water and electricity use and costs at all Parks and Recreation facilities.
3. Continue to utilize low-water, climate-adapted, native plantings for all facilities, parks, and streetscapes, and create a best practices manual for irrigation and other operations.
4. Prepare for the financial and greenhouse gas emissions impacts of potential increases in electricity and water use at all Parks and Recreation facilities.

PRIORITY TWO: WE WILL CLEAN OUR ENERGY SOURCES

Electric Mobility

Clean Electricity

Building Fuel Switching



Electric Mobility

Flagstaff will embrace the electrification of mobility options, shifting to vehicle-replacing e-bikes and bike share, electrifying our buses and taking advantage of the rapidly evolving electric vehicle market.

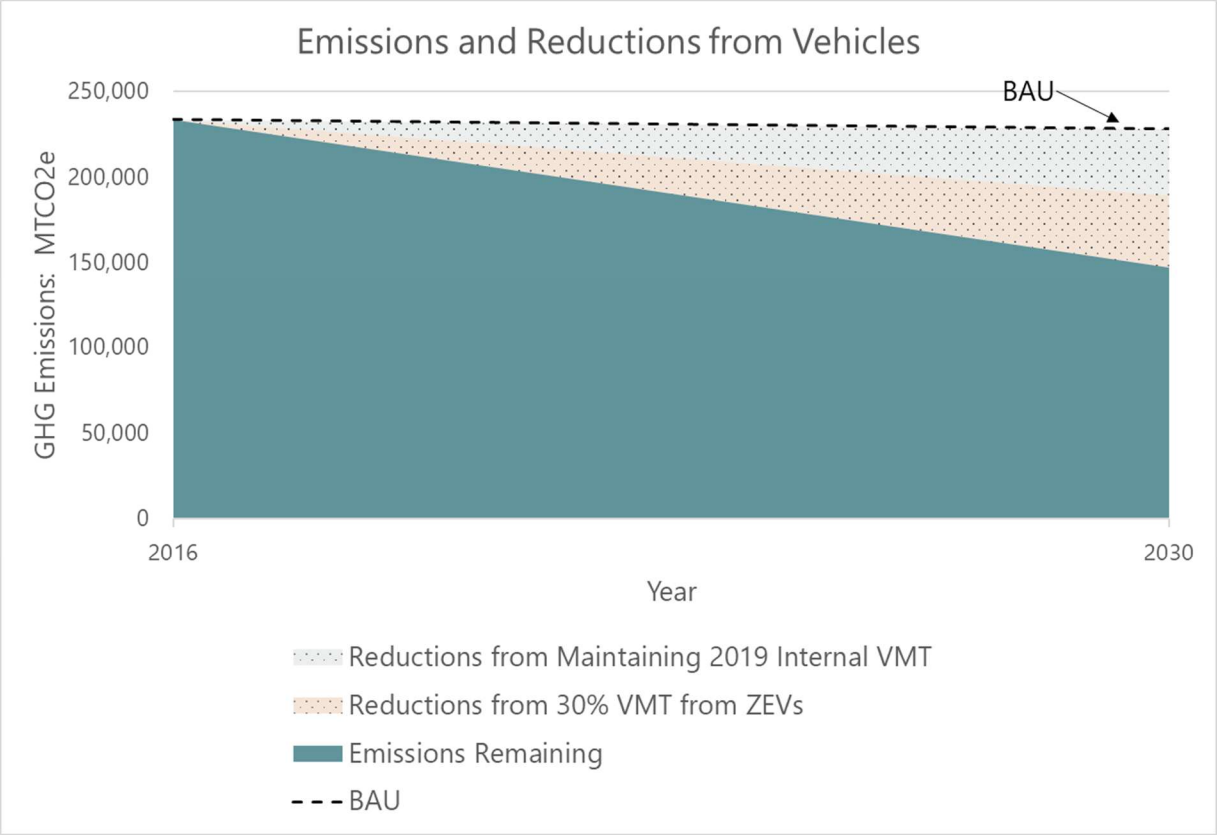


Figure 8: Projected emissions reductions from electric mobility and decreasing dependence on cars, compared to the emissions in the business as usual scenario.

WHAT IT MEANS

Reductions in GHG emissions from the transportation sector will require a transition to clean, low-/zero-emission vehicles while simultaneously enhancing community mobility through increased access to bicycle, pedestrian and public transit modes of transportation to decrease community-wide vehicle miles traveled (VMT). Transportation related emissions account for approximately 30% of Flagstaff's community-wide GHG emissions. In addition to reducing VMT, making progress toward more efficient and lower-carbon vehicles is critical.

HOW WE'LL GET THERE

The future of mobility is electric, mainly due to advances in technology and momentum from the market. Flagstaff can welcome this future by helping increase the speed of the electric mobility transition in Flagstaff. As Flagstaff works to reduce vehicle miles traveled and help folks take non-car modes of travel, electric mobility can play a part in making transit and active transportation more affordability, easier to use, and cleaner.

Electric buses: As we work to increase transit use across Flagstaff, we want to transition our bus fleets from gas or diesel fuels to electric power. Electrification of the bus fleet will require a significant investment from bus fleet operators, including but not limited to Mountain Line, Northern Arizona University and Flagstaff Unified School District. Electrification involves planning for electric charging locations and capacity, operational changes, and coordinating charging schedules, in addition to the acquisition of an entirely new and operationally appropriate bus fleet. The City will work to assist these organizations in their planning for the transition to electric buses, from grant-writing support to charging infrastructure planning.

Mountain Line, Flagstaff's transit provider, has begun planning for a transition to zero emissions vehicles – they recently published a Zero Emissions Bus Transition Plan, and determined to move forward with a battery electric bus transition.[16] Implementation will occur "project by project, bus by bus as funding and interest allows."

Electric micro-mobility: Adding electric power to simple, small transportation devices – such as bikes – is a relatively simple change that transforms the device into a much more accessible and practical transportation option. Electric bike use is rapidly accelerating across the globe, as batteries become smaller and less expensive, and as more people realize the incredible benefits of electrification.

What is electric micro-mobility?

Micro-mobility technology is a rapidly-evolving category of light-weight individual transportation devices. Examples include electric bikes (e-bikes), electric scooters, Segways, electric skateboards, and hoverboards.

While these devices represent very new ways of travel, they are already present in our community, obtainable at local and national retailers, and are already providing accessible, affordable, low-carbon transportation options.

See page 64 for a discussion of how micro-mobility can reduce vehicle miles traveled.

Electric micro-mobility devices are popular for a multitude of reasons: they move people around more quickly than a traditional bicycle or scooter and with significantly less effort – now a five mile commute with hills can be done with far less effort and sweat, making e-bike commutes much more attractive. These devices use very little fuel, or electricity, especially when compared to the gas used to move around a one-

[16] https://mountainline.az.gov/about-us/reports-plans/zero-emissions-bus-zeb-transition-plan/

ton vehicle. This saves money on gas, as well as vehicle wear and tear and maintenance. These devices remove traffic from the road and have a very small footprint, reducing congestion and parking demand – after all, a small scooter is a much more appropriate, efficient and proportional tool to move one person than a car or an SUV. And finally, these devices are popular because they are fun to ride.

The City of Flagstaff can work to welcome these devices in our community and to encourage their use. While these devices represent change in the way we travel, they have numerous personal and community benefits, including that they are a very low-emissions transportation option. Many of these devices could already be found on our neighborhood streets in 2021, whether a senior is taking an e-bike to see their grandchildren, a 10-year-old is using a hoverboard to go to a neighbor's house, or a student is taking an electric scooter to get to class. The City will need to work to incorporate these devices into our transportation planning efforts, so that people using micro-mobility devices have safe options for traveling both within neighborhoods and across town.

Electric vehicles: The widespread transition to zero-emission vehicles is a long-term strategy. The City of Flagstaff can support this transition by investing in and encouraging the necessary supporting infrastructure. Investment and encouragement can occur through codes, partnerships, incentives and other methods that improve the ability of residents to purchase and operate electric vehicles compared to conventional gas-fueled vehicles. For example, charging stations help EV owners fuel their vehicles – the City will encourage businesses and public buildings to install charging stations. In 2020, the City installed four charging stations in City Hall for use by City fleet vehicles as well as the general public. The City can also work through codes: the current Flagstaff building code, adopted in 2019, requires a 240 volt outlet to be installed in new garages – a small, inexpensive and simple modification that ensures the home, which will be around for at least 80 years, is ready for the rapidly approaching future of electric vehicles. This upgrade means a homeowner will not need to perform a costly retrofit to charge their vehicle, saving hundreds of dollars or more.

In addition, the City of Flagstaff will look to transition our own fleet while educating, encouraging and helping facilitate partnerships so that other local fleets might also make the electrification transition over time. We know that it matters which vehicles are electrified – by prioritizing the transition of fleet vehicles and other high usage vehicles that drive a disproportionate number of miles, we can expect to see an outsized impact. For example, if the top 20% of vehicles by mile are electric by 2030, the reduction in fuel use will be considerably larger than 20%.

While the City of Flagstaff can support the transition to EVs by taking early action to establish infrastructure, a considerable amount of the momentum for EV adoption will come from the private sector. Many of these factors are currently unknown or exist only as projections at this time. Some of these factors may include Federal incentives both for infrastructure development and for vehicle purchase. Some of these factors will be market driven – Tesla for example has installed 12 SuperChargers in Flagstaff, and according to ChargeHub there are an additional 50 level 2 and level 3 charging stations in the City that have been installed by businesses and organizations on their own accord.

EQUITY AND ADAPTATION CONSIDERATIONS

Equity: New EVs and electric micro-mobility options can be cost-prohibitive for many. This threatens to leave some populations out of the electric mobility transition, and will likely mean that low-income communities must cope with the higher operating costs and unhealthier air associated with internal combustion engines for a longer period of time. To ensure widespread adoption and affordability for low- and middle-income households, the City will need to establish robust incentive programs.

Adaptation: As Flagstaff experiences the impacts of climate change, having diverse, clean, reliable mobility options will be vital. By creating more good transportation options, Flagstaff can ensure that if one mode of transportation becomes difficult, residents have other choices. Electric bikes are a great way to travel around Flagstaff, even on hot or windy days. Market trends show that electric mobility is the way of the future; by investing in infrastructure and incentives for these options, Flagstaff will be better prepared for these transportation changes.

TARGET AREA GOALS

Goal	Year
The City will provide 50 publicly available Level 2 electric vehicle charging stations	2025

STRATEGIES TO ACHIEVE ELECTRIC MOBILITY

EM-1: Advance the electrification of buses across Flagstaff.

Opportunities for action:

1. Mountain Line will electrify its bus fleet according to its Zero Emissions Bus (ZEB) Transition Plan.
2. NAU will begin electrifying its bus fleet, to comply with its under-development carbon neutrality plan.
3. Partner with the Flagstaff Unified School District to explore funding options for fleet electrification.

EM-2: Welcome electric micro-mobility devices as legitimate, healthy, affordable, and low-carbon modes of transportation.

Opportunities for action:

1. Establish an electric micro-mobility device share service.
2. Distribute electric micro-mobility rebates to community members through local businesses to reduce barriers to residents acquiring these affordable transportation devices.
3. Launch a micro-mobility collective purchasing cooperative to increase access to efficient and affordable modes of transportation.

EM-3: Support residents, businesses, and institutions in the transition to electric vehicles.

Opportunities for action:

1. Focus electrification engagement efforts on the vehicles that drive the most miles – for instance heavily used fleet vehicles.
2. Install electric vehicle charging stations at City facilities to serve the City fleet, City staff vehicles, and the public where appropriate.
3. Develop public and private partnerships for the installation of Level II and Level III DC fast-charging electric vehicle charging stations in publicly accessible parking areas along tourism corridors, at workplaces, and in multi-family housing developments.
4. Adopt a policy requiring 100% of new City fleet sedans and SUVs to be electric vehicles starting in 2022, complemented by aggressive goals to test, evaluate, and, where feasible, acquire electric vehicles for other light-duty, medium-duty and heavy-duty fleet vehicles and equipment categories.
5. Encourage and incentivize existing multi-family housing to offer electric vehicle charging stations.

Zero Emission Vehicles beyond Electric Vehicles

While electric vehicles appear to have the inside track for capturing the market on passenger and light-duty vehicles that produce zero tailpipe emissions, vehicles fueled with hydrogen represent another emerging technology that may also play a role. The City will actively monitor advances in technology, infrastructure and partnership opportunities to support wider-spread adoption of hydrogen vehicles.

Clean Electricity

Flagstaff will obtain as much of its electricity as possible from sources that do not produce greenhouse gas emissions.

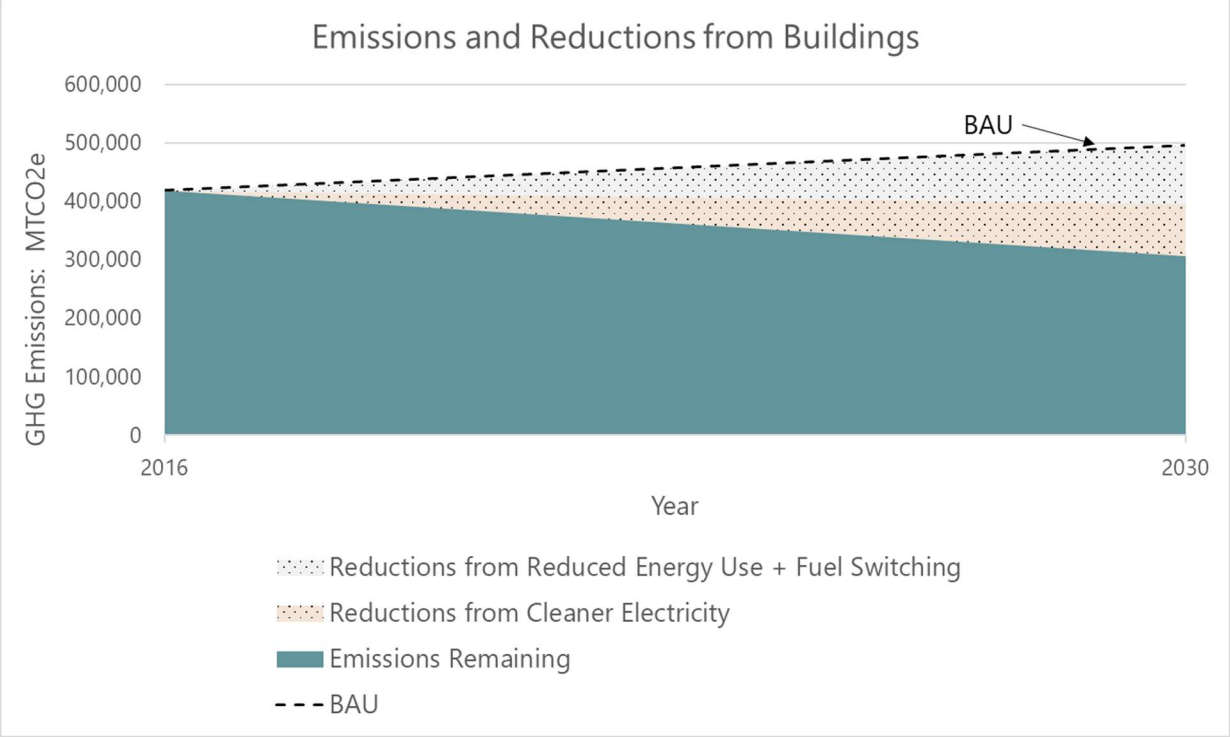


Figure 9: Projected emissions reductions from clean electricity and reducing building energy use, compared to the emissions in the business as usual scenario.

WHAT IT MEANS

Significant reductions in GHG emissions from both the built environment and transportation sectors can be unlocked with a rapid transition to clean, renewable electricity. With clean, renewable electricity available as a resource, appliances, vehicles, and other tools that directly utilize fossil fuels can switch onto this resource. (See Building Fuel Switching on page 92 and Electric Mobility on page 81).

Emissions from electricity currently constitute approximately 25% of all community emissions. This means that even without making any other changes (see the Electric Mobility, Building Fuel Switching, and Reduced Building Energy Use Target Areas, starting on pages 81, 92, and 100 respectively), a 100% clean electricity grid could eliminate one quarter of Flagstaff's emissions. In combination with the various fuel switching strategies, the impact of clean electricity could be even greater.

Are there negative impacts of renewable energy?

When new technologies emerge, there are often legitimate concerns that one bad thing (i.e., air pollution from coal) is just being replaced with another (i.e., waste from used solar panels).There are negative externalities associated with all forms of energy production. While we cannot avoid all negative impacts, we can choose the energy production methods that do the least harm to our environment and our community. The negative impacts of wind and solar are relatively modest, and are far outweighed by the positive impacts on air quality and reduced greenhouse gas emissions.

Large renewable energy projects sometimes face concerns about where turbines go after their useful life, or the amount of water used for large solar arrays. In fact, solar energy uses just 1% or 2% of the water used to create an equal amount of energy from coal or natural gas.[17] The City will continue to consider short- and long-term impacts to the environment and our community when developing renewable energy projects.

HOW WE'LL GET THERE

APS is the investor-owned utility that provides grid electricity to the community of Flagstaff. As of January 2020, APS has made a 'carbon free' commitment by 2050, with an expectation of 65% carbon free grid electricity by 2030. (See the APS Integrated Resource Plan.[18]) This is a 30% improvement compared to the local grid in 2020.

While APS makes the transition to renewable electricity, Flagstaff can increase the prevalence of local renewable energy projects such as rooftop or utility-sponsored community solar to achieve even greater near-term emissions reductions (third-party-sponsored community solar, where solar power projects generate electricity and benefits for multiple users, would require a change in State laws). The municipality can work with the utilities to develop large-scale renewable installations to power *municipal operations* with clean electricity. However, unless there are policy changes at the Arizona Corporation Commission (ACC) and/or APS, it is uncertain whether any additional electricity generated by these municipally-supported installations may be able to be directly acquired by, or attributed to, local residents or businesses. Flagstaff will continue to monitor the evolving electricity policy landscape and consider supporting actions that would unlock strategies for large scale renewable development for the community.

Clean electricity is just one of the many areas where we need to be open to innovation. While solar and wind are specifically called out in this Plan, there are other renewable energy options to explore. Additional technologies, like micro-hydroelectric power, may be incorporated during Plan implementation.

[17] https://nicholas.duke.edu/news/replacing-coal-gas-or-renewables-saves-billions-gallons-water
[18] https://www.aps.com/en/About/Our-Company/Doing-Business-with-Us/Resource-Planning

Until then, this Plan has been developed with only projected on-site residential and commercial installations being able to improve upon the APS grid forecast.

EQUITY AND ADAPTATION CONSIDERATIONS

Equity: Fossil fuels have historically inflicted severe harm to Black, Indigenous, and Hispanic communities through the extraction and combustion of these fuels. By shifting to clean electricity, the current impact these fossil fuels have on historically marginalized neighborhoods and communities can be decreased. To avoid future harm to these communities, they must be consulted prior to and during the development of solar arrays, wind farms, and other new, clean electricity infrastructure.

Adaptation: When developing the infrastructure for new electricity generation, both the City and APS will need to consider how the new developments will respond to shocks and stressors from climate change. A robust, interconnected electric grid with a multitude of battery backup options will be vital to building resilience in the energy sector.

TARGET AREA GOALS

Goals	Year
100% of municipal electricity use will be from renewables (%)	2025
68% of community electricity use from zero carbon energy (%)	2030

The Flagstaff City Council established a goal of 100% renewable electricity by 2050 through the 2018 Climate Action and Adaptation Plan. Our carbon neutrality models suggest that Flagstaff can achieve 68% clean electricity for the community by 2030. While we will endeavor to reach 100% renewable electricity prior to 2050, the current policy landscape suggests that 68% clean electricity is feasible for 2030.

STRATEGIES TO ACHIEVE CLEAN ELECTRICITY

CE-1: Produce 100% renewable electricity to cover all City of Flagstaff municipal electricity needs.

Opportunities for action:

1. Expand capacity of municipally owned property for on-site solar electric and solar thermal generation.
2. Replace or repair the co-digestion system at Wildcat Hill Water Reclamation Plant and increase clean energy production.
3. When landfill sections are completed and capped, install solar to support City energy usage and eventually connect to the electric grid.
4. Update the City of Flagstaff Sustainable Building Resolution, requiring that newly constructed municipal buildings be built to net zero energy standards.

CE-2: Increase renewable energy installations and usage in new buildings.

Opportunity for action:

1. Implement progressively more aggressive building codes, requiring net zero energy buildings by 2030. Net zero energy buildings often incorporate renewable energy installations – primarily rooftop solar- into the design and construction to offset onsite energy use.

Net zero energy buildings – Net zero energy buildings combine energy efficiency and renewable energy to use net zero energy. They use a low amount of energy due to being air-tight, well-insulated and energy efficient. They typically incorporate renewable energy generation on-site, like solar panels. Due to this low energy use paired with energy production, these buildings produce as much energy as they consume, which means that the occupants enjoy extremely low utility bills and a zero-emissions building.[19]

CE-3: Support solar installations on existing residential and commercial buildings.

Opportunity for action:

1. The Solar United Neighbors program will assist residents in obtaining solar electricity for a lower price.

[19] Learn more: https://zeroenergyproject.org/buy/zero-energy-homes

Solar electricity is now the least expensive source of electricity in history.

As of 2020, the International Energy Agency found that high-quality solar photovoltaic (PV) projects are the least expensive source of electricity in history.[20] Large solar plants with battery storage have decreased in price, making them competitive with natural gas. These developments will accelerate the rapid electrification of the electric grid. Market forces will help to facilitate this transition, but there remains a role for government policy makers to remove barriers to this transition, ensuring equity for communities that have been impacted by resource extraction and those that could be negatively impacted by the transition to renewable electricity.

Due to the low cost of solar, solar photovoltaic panels are a wonderful opportunity for Flagstaff residents and businesses to produce their own energy on-site, with financial and resilience benefits.

Legislative change

There are policies and strategies being pursued around the country that are not currently available to the City of Flagstaff because of State-level policies. Many of these strategies have the potential to unlock collaborations, financing and other opportunities that could positively contribute to the goal of achieving Carbon Neutrality.

The City will keep an eye on the policy landscape and may choose to lobby or otherwise advocate for some of these strategies including (but not limited to) Community Choice Aggregation, PACE financing (C-PACE and R-PACE), non-utility Community Solar and more. If any of these become available, this living document may be updated to incorporate the newly available mechanism(s).

The City of Flagstaff should also encourage the ACC and DOE to renew and increase renewable energy production incentives for residential and commercial solar and other distributed generation and storage projects, without additional metering fees or other disincentives.

[20] https://www.iea.org/reports/world-energy-outlook-2020/outlook-for-electricity

Project Highlight: Northern Arizona Solar Co-op with Solar United Neighbors

In partnership with the City, in 2021 the Northern Arizona Coop was organized through Solar United Neighbors, a non-profit organization that seeks to increase the access and affordability of solar energy.

Rooftop Solar and Prometheus Solar, two local Flagstaff installation companies, were selected by the Northern Arizona Solar Co-op to install solar for more than 80 households across Flagstaff, Sedona, and Coconino County. These installations are projected to result in:

- 647 kW of Solar installed
- 11,608 Metric Tons of CO2 avoided lifetime
- $1,845,219 invested in local businesses, jobs, and clean electricity



Building Fuel Switching

Flagstaff will shift our building fuel sources from fossil fuels to renewable sources and electricity for applications including space and water heating, cooking, and perhaps even industrial processes, thus taking advantage of the superior efficiency of electric appliances as well as the rapidly decreasing emissions of the electric grid.

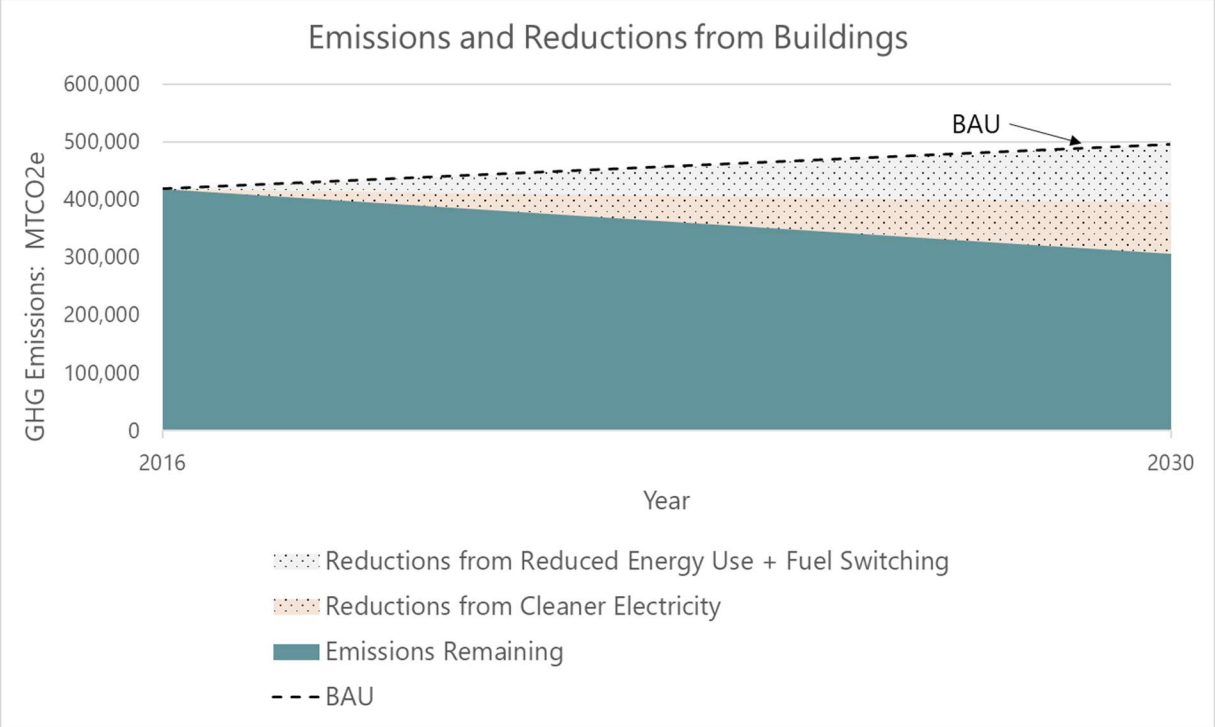


Figure 10: Projected emissions reductions from building fuel switching, compared to the emissions in the business as usual scenario.

WHAT IT MEANS

Fuel switching in buildings involves transitioning buildings from using appliances, processes and generators that directly combust fossil fuels on-site to ones that utilize decarbonized electricity (see the Clean Electricity Target Area on page 86) as well as solar thermal, biomass and other renewable sources of heat and energy. These on-site fossil fuels include natural gas, propane, and diesel. While switching fuel sources, it will also be necessary to ensure that the buildings are well sealed and energy efficient (see Reduced Building Energy Use Target Area on page 100) to manage fuel costs and electrical demand (when applicable).

When building fuel switching is accomplished by transitioning from the combustion of on-site fossil fuels to using electricity, the term “building electrification” is often used to be more specific. Like electric vehicles, building electrification can accomplish significant emissions reductions, but only if the source electricity is sufficiently clean. According to RMI, Arizona has already passed the tipping point in the decarbonization of the electricity grid, so that switching from a natural gas furnace to a grid-based electric heat pump for space and water heating will have an immediate emissions reduction benefit. Additionally, compared to a gas furnace, a heat pump installed in Arizona in 2020 and using grid-based electricity is expected to result in a net reduction in emissions of over 50% for the lifetime of the appliance.

HOW WE'LL GET THERE

"In every city we analyzed, a new all-electric, single-family home is less expensive than a new mixed-fuel home that relies on gas for cooking, space heating, and water heating."
– RMI, All Electric New Homes, a Win for the Climate and the Economy [21]

Approximately 45% of Flagstaff's building emissions, including approximately 56% of residential emissions, come from the on-site combustion of natural gas. Due to the relatively long lifetimes of buildings and appliances, actions now will be crucial for ensuring deep, rapid and long-term emission reductions. These actions include introducing education and incentives to ensure that when existing major appliances require replacement, electric and other renewable alternatives are adopted.

This Plan envisions the electrification of 12,500 major residential appliances as they require replacement as well as significant fuel switching in the commercial sector. Additional efforts can be made to encourage and incentivize electric-only new construction, which has been shown to offer net savings over the lifetime of the building.



[21] https://rmi.org/all-electric-new-homes-a-win-for-the-climate-and-the-economy/

Fossil fuels for low grade heat – like using a chainsaw to cut through butter

Imagine passing someone a stick of butter and asking them to cut it for you. When they leave the table to "get a tool" for the job, you'd probably expect them to grab a butter knife from the kitchen drawer. But instead they return with a chainsaw. Could the chainsaw accomplish the task of cutting butter? Sure. Is a chainsaw the right tool for the task? Certainly not. For the task of cutting butter, a chainsaw uses far more power than is necessary and is clearly wasteful. Similarly, for the task of low-grade space and water heating, on-site fossil fuel combustion uses far more power than is necessary and is wasteful - like using a chainsaw when a butter knife is available.

Even though gas furnaces have become more efficient in the past decades, they will never be able to compare to the performance of an electric heat-pump. This is because furnaces use energy to *generate* heat – while heat pumps primarily use energy to *transfer* heat from place to place, much like a refrigerator or air-conditioner. Indeed, heat pumps are basically air conditioners that can be reversed, meaning they provide both heating and cooling in a single appliance! Transferring heat requires far less energy than generating it, meaning that heat pumps can deliver the same amount of useable heat while using 2-5x less energy than even the most efficient furnaces. For the task of delivering useable heat, compared to a heat pump, even the most efficient furnace is a chainsaw.

To illustrate, consider that a 95% efficient EnergyStar furnace might be able to generate and deliver 950 BTUs/Hr of useable heat for every 1000 BTUs/Hr of gas energy input. BTUs are a unit of energy, and stand for British Thermal Units. Meanwhile, a heat pump is capable of transferring and delivering as much as 4000 BTUs/Hr or more of useable heat for every 1000 BTUs/Hr of electrical energy input. This is because the majority of the thermal energy delivered by a heat pump comes from the environment, not from the input source.



Based on information and image at: https://www.adams-air.com/houston/what-is-COP.php

In addition to being the right tool for the job of delivering low grade heat for space and water heating due to their superior efficiency, heat pumps and other electric appliances can also be powered by renewable sources. This combination means the lifetime energy use and emissions from the use of electric appliances can be far less than appliances combusting fossil fuels on site.

EQUITY AND ADAPTATION CONSIDERATIONS

Equity: Affordability is a significant concern for Flagstaff community members. When working to promote fuel switching, Flagstaff must carefully weigh the balance between climate action and affordability, with the understanding that both are critical to ensure true sustainability. We do not want a result of climate action to be higher cost of utilities for Flagstaff residents, many of whom already struggle to afford to live in Flagstaff.

When working to electrify homes, the City of Flagstaff will balance affordability and climate priorities. Fortunately, advancements in electric heating technologies, particularly through the use of heat pumps, mean that electrification does not necessarily result in higher costs. The Rocky Mountain Institute has found that electrification of space and water heating can reduce costs over the lifetime of the appliances, for both new buildings and some retrofits.[22]

The City will prioritize incentives in collaboration with local partners to make the cost of fuel switching competitive and even beneficial compared to remaining on fossil fuels. The City will work its partners to help residents utilize the latest technology, analyze policies for their impact of affordability, and ensure that electrification does not have detrimental effects, particularly for Flagstaff's low-income families. See the extended conversation about tensions on page 27 for more on electrification and equity.

Electrified homes and buildings may have more price stability, too. Currently, fossil fuels are subsidized and are associated with large externalities, mainly from the negative effects of their greenhouse gas emissions. Should a carbon price come into effect in the next decade, the artificial affordability of using on-site fossil fuels could be dramatically reduced or eliminated (see the Social Cost of Carbon section on page 44).

Adaptation: Surveys conducted throughout the Plan development process have demonstrated that electric grid reliability is a concern for many community members. This is valid, and electric utilities have much work to do in the next decade to bolster the grid for the renewable energy future. The City can support this transition and support grid reliability by implementing initiatives to reduce and manage energy demand - see the Reduced Building Energy Use Target Area on page 100).

[22] https://rmi.org/insight/the-economics-of-electrifying-buildings/

TARGET AREA GOALS

Goal	Year
Reduction in Natural Gas usage by Sector: Industrial: 0% reduction Commercial: 20% reduction Residential: 62% reduction	2030
12,500 residential properties (~50% of residential properties currently connected to natural gas) will have conducted a deep energy efficiency retrofit including the electrification of at least one major appliance.	2030
25% of commercial properties (not including NAU or municipal accounts) will have conducted a deep energy efficiency retrofit including the electrification of at least one major appliance. 15% of commercial properties fully electrify.	2030

Why don't we model natural gas reductions in the industrial sector?

While the low-grade heat used in residential and most commercial applications can be electrified or switched to other renewable sources relatively easily, many industrial processes require high heat or even use natural gas or other fossil fuels as a feedstock. Generally speaking, these are 'harder' problems from a decarbonization standpoint, and as an organization the City is less familiar with how fossil fuels are being used for industrial processes in Flagstaff, and is less well positioned to support Flagstaff industry in making these transitions. The City is prepared to develop education and incentive programs to support residential and commercial entities. While we are optimistic that industrial users will reduce their reliance on fossil fuels, including natural gas, due to our limited information and ability to directly support industrial users, we are not currently modeling any reductions from the industrial sector. Going forward we will look to learn more about the industrial users in our community and their use of fossil fuels, and will look for opportunities to support reductions.

STRATEGIES TO ACHIEVE FUEL SWITCHING

FS-1: Reduce or remove natural gas usage in municipal buildings.

Opportunities for action:

1. Develop and implement a Municipal Building Electrification Plan, to achieve net zero energy in occupied City facilities.
2. Obtain funding to build 100% electric buildings on new City of Flagstaff affordable housing sites, to support affordable living.
3. Electrify appliances during upgrades at existing City of Flagstaff affordable housing sites whenever feasible.

FS-2: Encourage new buildings to rely on the electric grid as their main energy source.

Opportunities for action:

1. Provide monetary incentives to builders that construct or retrofit to achieve net zero energy prior to 2030.
2. Provide incentives to builders to forego natural gas infrastructure in new sub-developments and new buildings.

FS-3: Support fuel switching in existing residential and commercial buildings.

Opportunities for action:

1. Establish a revolving loan fund for major appliance electrification upgrades and solar thermal hot water upgrades for residential and commercial properties.
2. Increase the pace of home and commercial electrification by funding home energy electrification rebates and completing home energy electrification via the Home Energy Retrofit Program.
3. Establish an Electrification Permit Fund to pay for the permits for existing households and businesses to electrify their appliances.
4. Develop incentives to promote the mass installation of solar thermal water heating within the community.

FS-4: Provide training and education on fuel switching.

Opportunities for action:

1. Fund and implement a contractor training program for solar thermal, electric water heaters, electric heat-pump space heaters, and conversions from gas to electric appliances.

2. Develop a program to offer technical assistance, help schedule contractors for fuel switching upgrades, and offer incentives above and beyond what is offered by the utility.
3. Create a Residential Energy Efficiency and Fuel Switching Information Hub for exchanging information about net-zero renovations, electrification, and at-home climate mitigation strategies.

Not Your Grandfather's Heat Pump

According to the Rocky Mountain Institute (RMI) "Heat pump technology has improved significantly in recent years, flipping a commonly accepted narrative that it is not an efficient or dependable heating source. Even accounting for reduced efficiency in extreme cold weather, our analysis finds that modern air source heat pumps are more than twice as efficient as gas furnaces."[23] Modern heat pumps are providing efficient heating in cold weather climates from Denver to Minneapolis to Fargo.

In addition to being able to pair modern heat pumps with smart and programmable thermostats, the main technological updates compared to heat pumps from even a decade ago are the inclusion of:

- Variable speed compressor technology
- Improved expansion valve technology
- Fans with electronically commutated motor (ECM) technology

Each of these technology improvements allow the unit to run at an optimized pressure/openness/speed to best meet the heating (and cooling) needs. Previous heat pumps without these features could typically had to be 'all on or all off,' which reduced performance.

Legislative change

Lobby at the Arizona Corporation Commission for more energy efficiency and electrification programs for all sectors.

[23] https://rmi.org/its-time-to-incentivize-residential-heat-pumps

PRIORITY THREE: WE WILL MANAGE OUR CONSUMPTION

Reduced Building Energy Use

Sustainable Consumption

Water Security



Reduced Building Energy Use

Flagstaff will significantly reduce greenhouse gas emissions from heating, cooling and powering buildings.

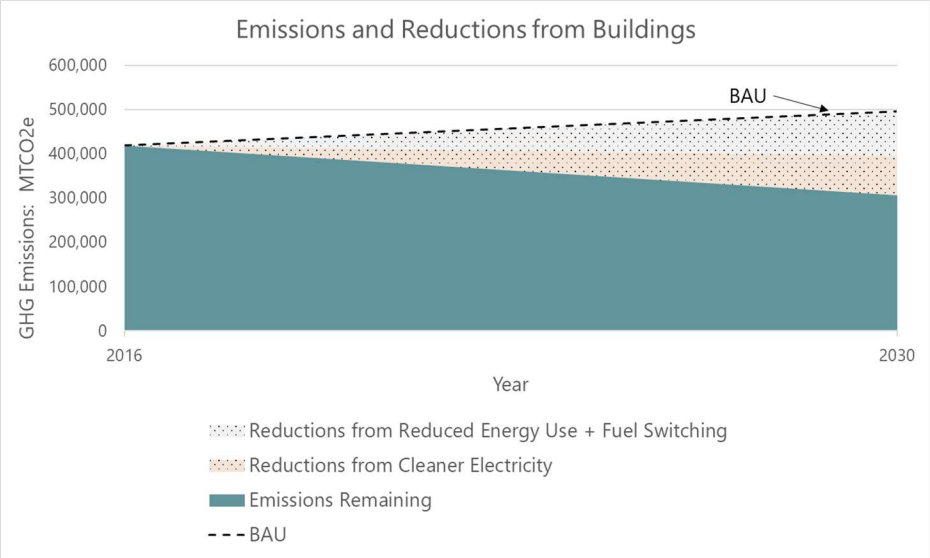


Figure 11: Projected emissions reductions from clean electricity and reducing building energy use, compared to the emissions in the business as usual scenario.

WHAT IT MEANS

Reducing energy demand is one of the quickest and most affordable methods to reduce emissions from buildings.

Whether for new construction or for retrofitting existing buildings, energy efficiency solutions are well understood. Weatherization improves the building envelope and insulation, while other solutions utilize technology (i.e. smart thermostats, energy efficient appliances, distributed energy storage) to optimize energy use. The payback on retrofits, depending on the building, is five to seven years on average.[24]

Reductions in building energy demand will provide immediate emissions reductions from the use of both electricity and natural gas, while also making our homes and businesses more comfortable to live in and more affordable to operate. While APS is making the transition to 100% carbon free electricity (see Clean Electricity Target Area on page 86), reducing building energy demand will also improve the ability of the

[24] https://drawdown.org/solutions/building-retrofitting

Utility to meet demand with cleaner fuel mixes. Reducing building energy demand is especially critical given the various fuel switching strategies in this Plan (see Building Fuel Switching and Electric Mobility Target Areas on page 92 and page 81, respectively). Fuel switching without energy efficiency measures will increase electrical demand significantly. Fuel switching combined with energy efficiency can temper or even reduce electrical demand, thus making it easier and less expensive to bring online the magnitude of clean electricity infrastructure required to meet our future needs.

What about water?

Producing the water that arrives at our taps and then treating it after its use utilizes energy at every stage of our water production and treatment processes. In Flagstaff, water is particularly energy intensive, as many of the wells we use to obtain drinking water are as deep as 1,000 feet or more. Water operations comprise most of the City of Flagstaff's energy use.

Energy use is carefully monitored by the City of Flagstaff's Water Services staff, who work to increase the energy efficiency of Flagstaff's water management processes. Staff also work to manage Flagstaff's water supply, plan for the future, and reduce water use through conservation – more on those efforts can be found at www.Flagstaff.AZ.gov/water.

This Plan, and the City's building energy use reduction efforts, consider water use to fall under the umbrella of building energy use. As water used in a home or a business represents energy use, water efficiency and conservation contribute to reduced community energy use. City staff will work across divisions to coordinate water and energy conservation initiatives.

HOW WE'LL GET THERE

Emissions from buildings currently constitute approximately 44% of all community emissions. To reduce energy demand Flagstaff must set aggressive reduction targets for both new and existing building stock. Due to their long lifetimes and the rate of growth in Flagstaff, it will be important to integrate more energy-efficiency technologies and infrastructure into new construction in the near-term through policies, incentives and economics. The 2018 Climate Action and Adaptation Plan forecast a goal of a net-zero construction code for all new residential and commercial buildings by 2040. This goal will be accelerated to 2030 with an intermediary glidepath to net-zero building code in 2025. While it is important for new buildings to be energy efficient, the existing building stock of 2021 is expected to make up over 90% of the community buildings in 2030. Therefore, it will be critical that a significant number of these buildings, especially the older and lower performing ones, undergo building retrofits to both reduce their energy demand and improve their comfort and utility for their occupants. This Plan envisions and supports performing home energy and electrification retrofits on 12,500 homes (~50% of the existing housing stock) in addition to a significant number of building retrofits in the commercial sector. Performing retrofits at this scale will be an enormous opportunity for jobs and partner collaboration.

EQUITY AND ADAPTATION CONSIDERATIONS

Equity: Three in ten households in the US face challenges in meeting their energy needs.[25] Low-income households face disproportionately higher energy burden – or the portion of gross household income spent on energy costs. According to the Department of Energy, low-income households spend 8.6% of their income on energy, compared to 3% for other households.[26] In Flagstaff, low-income households spend 13% of their income on energy each year; higher-income households spend between 1% and 3%.[27] This is a large energy burden that leads to a high cost of living, limited disposable income and financial insecurity for Flagstaff's low-income families.

Purchasing new, energy efficient technology or appliances often requires a significant up-front financial investment. While all households can benefit from the return on investment provided by energy efficiency, high up-front costs meant that not all households can access this investment opportunity that helps save money over the long term. This inequity can persist in incentives, where only those who have access to upfront funds to purchase the appliance are able to access the financial incentive.

Climate action in this target area will work to reduce the energy burden for low-income families, and work to provide emissions and cost-saving benefits equitably throughout the community.

Adaptation: More efficient buildings can help Flagstaff residents be more prepared for more extreme weather, like extreme heat, large winter storms, or extreme cold. By reducing the energy used in homes and other buildings, energy efficiency investments can lead to lower heating and cooling energy use, which leads to lower energy bills and lower reliance on outside fuels, which can be helpful during extreme weather.

Heat pumps are a climate mitigation tool that help residents heat their homes using electricity instead of fossil fuels. Heat pumps can also be used as air conditioners, which can help people with health conditions get through Flagstaff's hottest summer days, but also use a lot of energy. Currently, most homes in Flagstaff do not have air conditioning. As more homes in Flagstaff install heat pumps, more residents will have access to air conditioning, creating the possibility for increased energy use in the summer months. Energy-efficient building practices and demand management will be needed to ensure that Flagstaff's buildings are well-insulated and require lower amounts of both heating and cooling.

[25] https://www.eia.gov/todayinenergy/detail.php?id=37072
[26] https://www.energy.gov/eere/slsc/low-income-community-energy-solutions
[27] https://www.energy.gov/eere/slsc/maps/lead-tool

TARGET AREA GOALS

Goal	Year
Reduce greenhouse gas emissions from heating, cooling and powering buildings by 34% from BAU.	2030
Reduce electricity usage by building sector: Industrial: 0% reduction Commercial: 0% reduction Residential: 4% reduction	2030
Reduce natural gas usage by building sector: Industrial: 0% reduction Commercial: 20% reduction Residential: 62% reduction	2030



STRATEGIES TO ACHIEVE REDUCED BUILDING ENERGY USE

BE-1: Achieve net zero energy City of Flagstaff facilities.

Opportunities for action:

1. Perform a full-scale energy audit and implement recommended energy retrofits for all City of Flagstaff facilities from this audit.
2. Design and obtain funding for new City of Flagstaff Affordable housing sites to be net zero energy.
3. When retrofits at existing City of Flagstaff Affordable housing sites are made, implement efficiency upgrades to move the sites towards net zero energy.

BE-2: By 2030, require new homes in Flagstaff to be net zero energy homes.

Opportunities for action:

1. Implement progressively more aggressive building codes, requiring net zero energy buildings.
2. City staff should ensure the City's building code is reflective of rapidly changing technology related to energy efficiency, renewable energy, energy or battery storage, and electrification.
3. Provide incentives to builders to construct net zero energy buildings, prior to a net zero energy code requirement. Use these buildings to showcase the feasibility, benefits and innovation.
4. Require large new buildings and new neighborhood developments to submit c**arbon neutrality alignment statements**, to increase collaboration between developers and the City and to communicate how developments contribute to the City's carbon neutrality goals.

BE-3: Reduce energy use in existing buildings.

Opportunities for action:

1. Incentivize and subsidize home energy efficiency retrofits on a sliding scale based on income.
2. Establish a revolving loan fund for energy efficiency upgrades to make affordable financing available to both commercial and residential properties.
3. Work with real estate energy partners to obtain energy efficiency information during real estate transactions, such as requiring home energy efficiency scores when homes are sold or ownership is transferred.
4. Catalyze energy efficiency and more affordable living in rental housing, increasing energy efficiency in rental homes through incentives and potential minimum standards.
5. Expand energy efficiency outreach, including energy efficiency workshops, education on energy price signals, and how to navigate time-of-use pricing.

Why net zero energy homes?

Net zero energy homes are tied to the electric grid, and use a low amount of energy due to being air-tight, well-insulated and energy efficient. They typically incorporate some sort of renewable energy generation on-site, like solar panels. Due to this low energy use paired with energy production, these homes produce as much renewable energy as they consume over the course of a year, leaving the occupants with a net zero energy bill, and a carbon-free home.[28] Homes can be built as **net zero ready**, meaning they can become net zero with the installation of solar panels.

Net zero energy *ready* homes are already being built in Flagstaff – the Crestview neighborhood, by the developer Capstone, is comprised of all net zero energy ready homes – including the homes participating in the City of Flagstaff Community Land Trust Program.

The Department of Energy (DOE) has a Zero Energy Ready Home Program, to recognize ZERH homes and ensure "**outstanding levels of energy savings, comfort, health, and durability.**"[29] The DOE promotes the following benefits from zero energy ready homes:

- Improved home experience and lower ownership costs,
- Benefits to home builders, including customer satisfaction and lower liability,
- Support of a more resilient electric grid with lower peak demand, and
- Approximately $150 billion of utility savings and signification jobs benefits.[30]

Legislative change

This strategy would benefit from enabling legislation to allow:

1). Energy use disclosure and benchmarking for all buildings, and

2). An Arizona PACE program to encourage property owners to make energy-related investments and upgrades to buildings using a special property assessment, for both residential and commercial properties.

[28] Learn more: https://zeroenergyproject.org/buy/zero-energy-homes
[29] https://www.energy.gov/eere/buildings/zero-energy-ready-homes
[30] https://www.energy.gov/sites/prod/files/2020/08/f77/Zero%20Energy%20Ready%20Homes-%20Why%2C%20What%2C%20and%20How.pdf

Sustainable Consumption

Flagstaff will move towards sustainable consumption, divert more materials from the landfill through reuse and recycling, and then reduce emissions from the landfill.

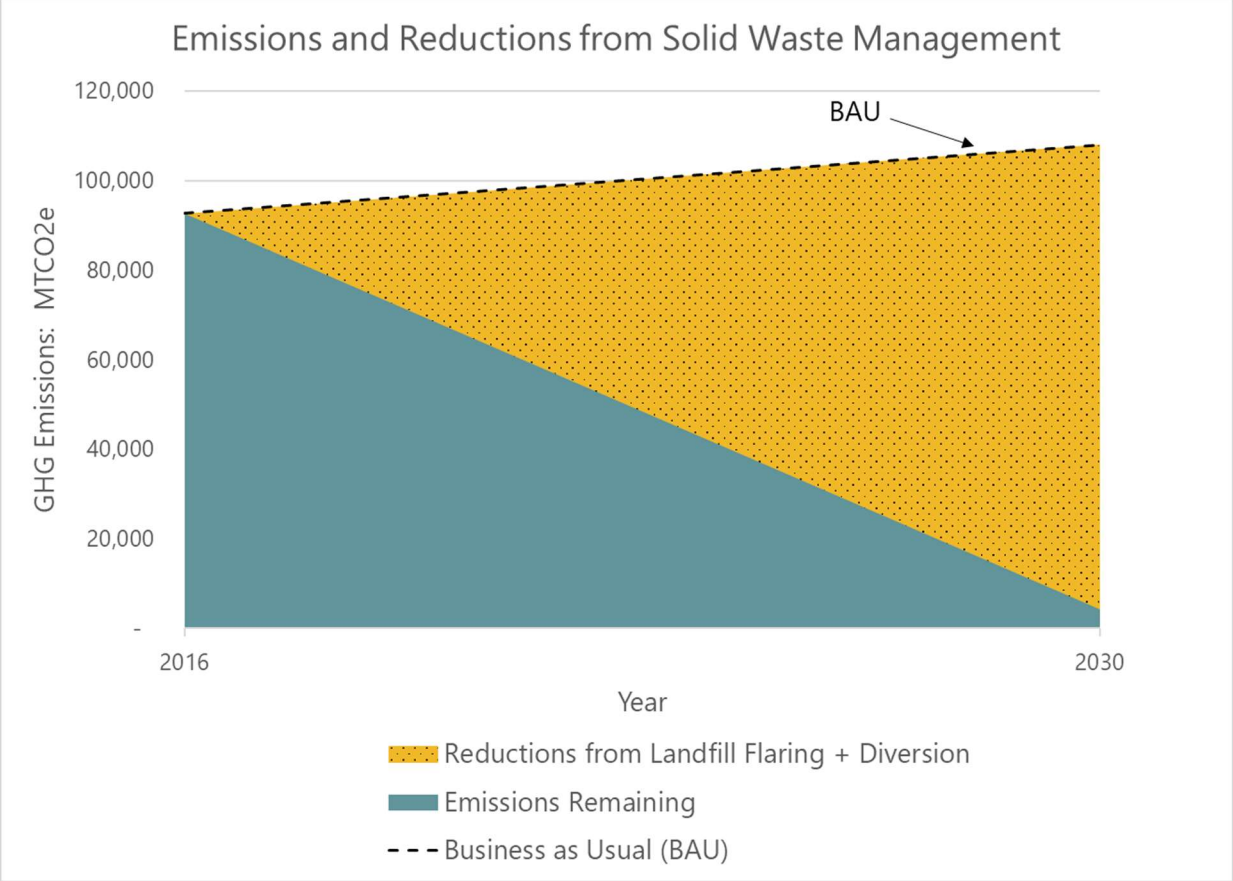


Figure 12: Projected emissions reductions from solid waste management, compared to the emissions in the business as usual scenario.

WHAT IT MEANS

Given our current sector-based inventory methods (see page 157), community emissions related to solid waste come almost entirely from landfill gas, a natural byproduct of the decomposition of organic material. Landfill gas tends to be 40-60% methane, with the rest being carbon dioxide and other non-

methane organic compounds. Methane is a potent greenhouse gas that is 28-36 times more effective than carbon dioxide at trapping heat in the atmosphere over a 100-year period.[31]

HOW WE'LL GET THERE

While reported emissions related to solid waste account for approximately 16% of Flagstaff's current emissions profile, the impact of waste and consumption is likely to be significantly underestimated due to the fact that Flagstaff currently conducts a sector-based rather than a consumption-based inventory (see the Sector-Based Greenhouse Gas Inventory section on page 157). Therefore, many of the prevention actions in this Target Area are expected to have unmeasured beneficial impacts beyond even what can be captured using our current methods of measurement. Additionally, many of the actions in this Target Area offer environmental, economic, and social co-benefits. For example, actions such as rescuing edible food from the landfill and redistributing to food donation programs not only reduces methane emissions, it also helps to address hunger in local communities.

The main strategy in this Plan for managing landfill emissions calls for installing gas collection systems at the Cinder Lake Landfill. This should include pre-installation of a horizontal gas collection system during the construction of the next landfill cell, which is expected to get underway in the next 5-7 years. This next landfill cell will also be lined, which will help maximize the efficacy of the pre-installed gas collection system. Retroactive installation of a gas collection system within the currently open and unlined cells, which are expected to be closed and capped between 2026-2029, may not achieve optimal collection efficiency, but this voluntary action would be supported by the Arizona Department of Environmental Quality. Analysis will need to be conducted to determine the gas collection efficiencies that can be achieved for these unlined cells, and the emissions and reductions projected can be updated as more data becomes available. Flaring was chosen over other potential options (i.e. gas to energy) for the currently open cells after assessing the expected returns and determining that they did not justify the increased price. Flaring has been shown to have a 98% methane destruction efficiency, meaning that it destroys 98% of the gas collected.

The City of Flagstaff ReThink Waste Challenge is a program that joins innovation, equity, and waste minimization. By providing funding to innovative projects focused on decreasing waste, entrepreneurs are better able to implement strategies to decrease waste in the Flagstaff community.

Finally, it should be noted that the ReThink Waste Plan was adopted by resolution in 2018, the same year as the Climate Action and Adaptation Plan (CAAP). These two plans were largely aligned in terms of goals and timelines. Given that the Climate Emergency Declaration has advanced the goals and timelines of the CAAP, the ReThink Waste Plan should also be updated. Indeed, the actions in this target area should be considered a starting point and sneak peek for some of the updates to come in the ReThink Waste Plan.

[31] https://www.epa.gov/lmop/basic-information-about-landfill-gas

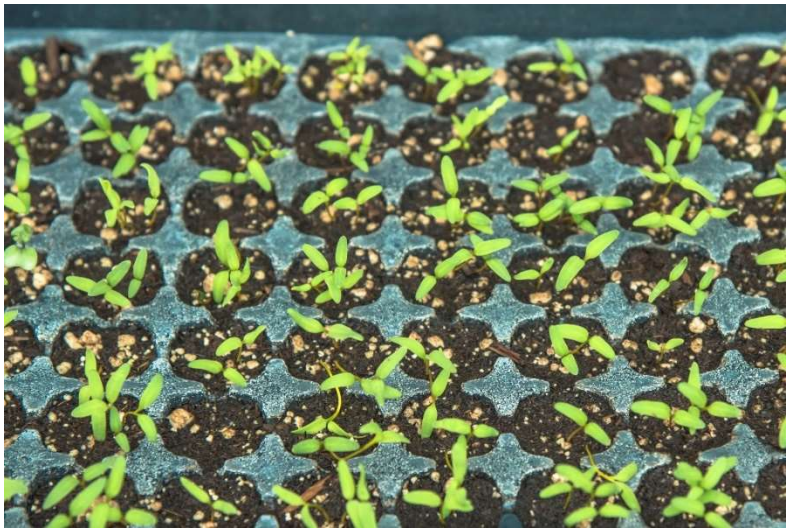
EQUITY AND ADAPTATION CONSIDERATIONS

Equity: Programs to incentivize decreasing waste and overall consumption can be financially beneficial to low and middle income households that produce little waste. The Pay as You Throw pilot program is an example of this, where those who produce little waste will pay less than those who create more. However, some low- and middle-income households inherently produce more waste due to factors such as family size, age, or disability. These factors must therefore be considered when creating and implementing waste reduction programs in order to create effective policies that decrease waste in an equitable manner.

Adaptation: Ideas behind decreasing waste and consumption sometimes rely on purchasing reusable items, under the assumption that all people can afford to buy these items. However, we can learn from the most sustainable among us - those who have decreased waste out of necessity; reusing jars and containers instead of purchasing a new Hydro Flask bottle or package of Tupperware actually does more to decrease consumption. Flagstaff can learn from the ingrained resilience and wisdom of our elders that exists within our community.

TARGET AREA GOALS

Goal	Year
Reduce methane emissions from the landfill by up to 98%	2030
Ensure equal access to recycling services across Flagstaff.	2030
80% community waste prevented and diverted from landfill	2030



STRATEGIES TO ACHIEVE SUSTAINABLE CONSUMPTION

SC-1: Manage emissions from the Cinder Lake Landfill.

Opportunities for action:

1. Establish gas capture and flare systems at the Cinder Lake Landfill.
2. Explore the feasibility of a large-scale digestion or other composting mechanisms.

SC-2: Encourage sustainable consumption.

Opportunities for action:

1. Expand educational programming to encourage sustainable consumption by residents and businesses.
2. Collaborate with local and regional partners to reduce construction and demolition waste.
3. Encourage low-carbon food consumption.

SC-3: Divert more waste from the landfill.

Opportunities for action:

1. Convert the materials recovery facility (MRF) to a transfer station to expand allowable recyclable materials and increase diversion from landfill.
2. Utilize MRF space for a Center for Hard to Recycle Materials (CHARM). Host regular community events and drop off days at this facility and partner with businesses to divert the material.
3. Incorporate residential "Pay as you Throw" volumetric pricing to divert more waste from the landfill.
4. Complete waste characterization study to identify recoverable materials that create economic development opportunities.

SC-4: Reduce organic waste going to the landfill and reduce food insecurity.

Opportunities for action:

1. Expand composting services to reduce food waste and yard waste going to the landfill, starting with a drop off composting service for residential customers and eventually offering curbside collection service.
2. Offer a composting service to commercial customers.
3. Expand educational programming to prevent wasted food in households and businesses.
4. Work with local partners and provide municipal support and resources to maximize food rescue and redirect that food to help address food insecurity in our community
5. Incentivize or mandate the use of locally produced compost to increase demand.

The importance of developing a market for compost material

A composting operation large enough to accept Flagstaff's organic waste will be a major financial investment. In order for the operation to be successful, there needs to be a robust market to sell finished compost and drive greater organic waste diversion. If there is too little demand for compost material, the price of the material will be too low to justify the investment. Thankfully, there are great examples of jurisdictions across the county that we can look to for examples of how to boost demand for compost material. States such as Washington, Oregon, and others require its use in highway development and stormwater infrastructure, while other communities encourage the use of compost as part of new housing developing. Not only does this help sustain composting programs but it also improves soil quality and sequesters carbon.



Water Security

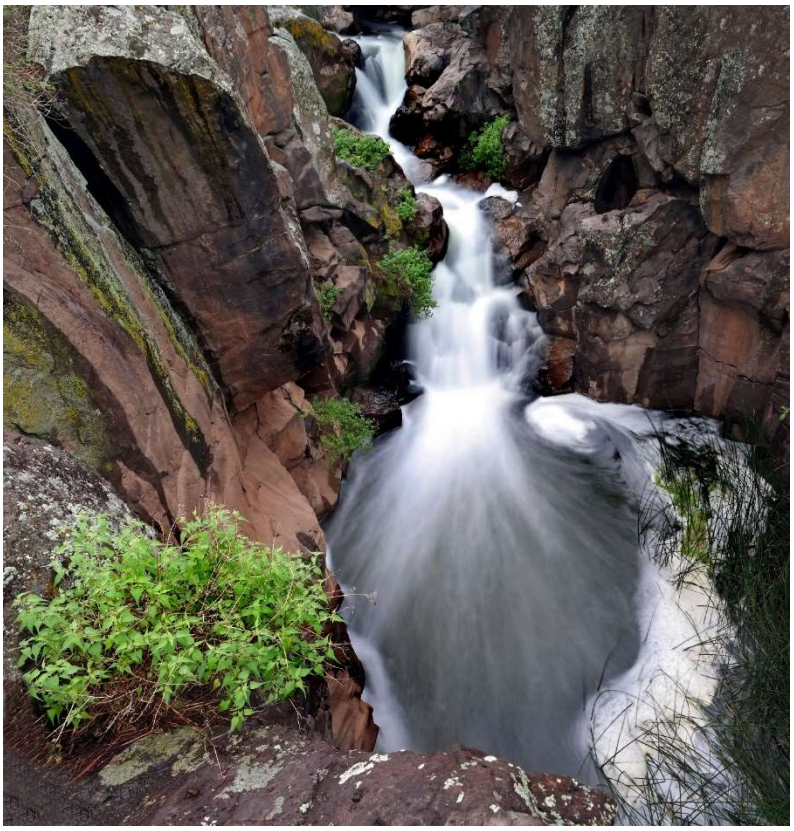
Flagstaff will ensure that water resources are distributed equitably and sustainably, the community is empowered to use water efficiently, and water and wastewater treatment minimizes greenhouse gas emissions.

WHAT IT MEANS

Water Security refers to the surface water, groundwater, and reclaimed water that serve our residential, commercial, industrial, institutional, recreational, and agricultural needs. It includes 100-year water supply planning, diversification of the water supply portfolio, and conservation to sustain our water supplies and quality for future generations.

The treatment and conveyance of Flagstaff's water supply and wastewater emit a considerable quantity of greenhouse gas emissions. Actions to minimize water use and optimize treatment and conveyance processes can help lower the community's greenhouse gas footprint.

Nearly 80% of Flagstaff's water comes from forests at high risk of significant wildfire damage. Despite progress in water conservation, as our population grows, tourism increases, and the climate changes, we expect water demand to increase while climate change stresses our water resources.





Our water comes from forests at high risk of significant wildfire damage. Despite progress in water conservation, as our population grows, tourism increases, and the climate changes, we expect issues like wildfires or reductions in snowpack and snowfall will stress our water resources. Our community will need to be ready to fund larger or more innovative water infrastructure projects.

Water Supply, Quality, and Infrastructure
Vulnerability to Climate Change

By 2100, Flagstaff communities are likely to face:

HIGH VULNERABILITY	MEDIUM-HIGH VULNERABILITY	HIGH VULNERABILITY
Reduced water availability and increased demand are expected to accelerate the need to develop new water supply projects.	More wildfire, drought, and flooding are likely to impair water quality.	More wildfire and flooding is likely to significantly damage natural and human-made water infrastructure.

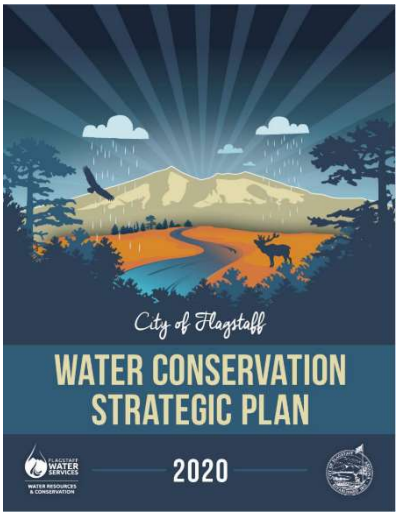
HOW WE'LL GET THERE

The City of Flagstaff works to provide water, wastewater, and stormwater services that meet the present and future environmental, health and safety needs of the community. A reliable water supply is essential to maintaining our community's economic vitality and overall sustainability. The City works in a variety of ways to ensuring water security and sustainability:

- The City of Flagstaff has been using reclaimed water to off-set potable water used for irrigation since 1966.
- The City's Water Conservation Program provides numerous incentives to Flagstaff residents for water conservation measures including rainwater harvesting, changing out high water use fixtures, and efficient landscapes.
- The City has tiered water rates for the single-family residential sector, the highest water use category by volume.
- The City's Water Services Division has conducted energy audits of their water and wastewater treatment facilities to identify ways to reduce energy consumption.
- Due to water conservation efforts of the City and residents, water use per capita has decreased approximately 50% in the past 40 years.
- The City of Flagstaff has a 100-year Designation of Adequate Water Supply from the Arizona Department of Water Resources, demonstrating the City's commitment towards securing a long-term water supply.
- The City will ensure that Flagstaff has adequate water supplies, now and into the future. The City of Flagstaff Water Services Division is working to meet the present and future needs of the Flagstaff community through long-term planning, upcoming rate studies, and continuing conversations with the community. The City will employ a variety of strategies to achieve its climate and water goals, such as: Conserving water through infrastructure that enables and expands water reuse.
- Maintaining forests and ecosystems through management is vital for watershed function and health.
- Reducing water use through conservation, reducing the use of energy for water delivery and treatment and protecting vital resources.
- Promotion of natural drainage systems and low impact development to reduce flooding and stormwater issues that may be exacerbated under future climate conditions, as well as recharge aquifers.

Additionally, the City of Flagstaff will work to better understand the greenhouse gas emissions from water production, delivery, and wastewater treatment in the public and private sectors. It will begin to track the kilowatt hours (kWh) and greenhouse gas emissions per gallon of water produced, for both potable and reclaimed water.

The **Flagstaff Water Conservation Strategic Plan** was adopted in December 2020, to plan for the expansion and improvement of water conservation efforts at the City of Flagstaff. The Plan recommends implementing expanded water conservation efforts to improve Flagstaff's sustainability as a community through long-term water resource reliability. Conservation is the least expensive means of meeting future water supply needs for the Flagstaff area.



Two policy proposals developed through this Strategic Plan are particularly relevant to climate action:

1. Amend the City of Flagstaff plumbing code to require WaterSense certification for new faucets, showerheads, and toilets.
2. Improve landscape design standards (including increased passive and active rainwater absorption) as well as the removal of problematic plants from the current landscape design plant list.

TARGET AREA GOALS

Goal	Year
Ensure a secure and sustainable water supply that is accessible and affordable in the face of climate change impacts.	2030
Conserve community water resources by maximizing water efficiency and supporting innovations in water resources, including within stormwater, groundwater, surface water, and reuse systems.	2030
Reduce greenhouse gas emissions from water production and delivery and wastewater treatment in the public and private sectors.	2030

STRATEGIES TO ACHIEVE WATER SECURITY

WS-1: Improve water infrastructure and expand water reuse.

Opportunities for Action

1. Evaluate the greenhouse gas emissions and financial impacts of potable reuse, water importation, and groundwater pumping.
2. Incorporate enhanced energy efficiency and smart controls into water production and wastewater treatment designs on new projects and upgrades of existing equipment.
3. Increase the efficiency of municipal irrigation systems and practices.
4. Purchase backup generators for the Flagstaff water and wastewater infrastructure system in order to achieve the City Council's goal of providing a "sustained minimal" level of water services in the event of a catastrophic power loss.
5. Evaluate the viability and costs of new advanced reclaimed water treatment technologies to increase water quality for potable reuse.
6. Update the Water Resources Master Plan to ensure a long-term sustainable and secure supply when faced with climate-related hazards.
7. Evaluate options for enhancing resiliency of the reclaimed water system, such as additional storage and looped piping.

WS-2: Improve ecosystem management for protection of water resources.

Opportunities for Action

1. Maximize groundwater recharge, such as by prioritizing the use of reclaimed water to recharge aquifers and protecting recharge zones in perpetuity.
2. Evaluate landscape and stormwater codes for suitability with projected changes in temperature and precipitation, and how effectively the codes support the development of green infrastructure.

WS-3: Continue to support water conservation efforts across the Flagstaff community.

Opportunities for Action

1. Expand public education on water conservation and the "one water" concept, which says that all water is reusable.
2. Work with high water users within the non-residential customer classes to maximize water use efficiency.
3. Develop policy and processes to evaluate water use and community benefits such as economic development when permitting new businesses and community events.
4. Evaluate the viability of introducing various water conservation requirements for new construction, such as rainwater harvesting for irrigated spaces.
5. Create a repair loan program for City customers to encourage repairs to aging water infrastructure in homes and businesses.
6. Increase participation in water conservation incentives and rebates for indoor and outdoor water use efficiency, as recommended by the City's 2020 Water Conservation Strategic Plan.

WS-4: Maximize passive and active community rainwater infiltration.

Opportunities for Action

1. Increase implementation of low impact development and water programs, including rainwater harvesting, the low impact development ordinance, and the NPDES Section 402 Program.
2. Maintain the rural floodplain ordinance.
3. Commit funding for new and the replacement of old stormwater infrastructure to ensure adequate sizing to accommodate anticipated precipitation changes.
4. Create a watershed management plan.



WATER SECURITY TENSIONS

A reliable water supply is essential to maintaining our community's economic vitality and overall sustainability. The City's Designation of Adequate Water Supply links water supply to future water demands for all unbuilt plats and parcels in Flagstaff, planning 100 years into the future. However, climate change poses threat to Flagstaff's water supply, requiring us to make difficult decisions as we work to provide water security for the community. The majority of Flagstaff's water is sourced from the C aquifer, an underground water source that is maintained (recharged) largely through the melting of snowpack and reclaimed water discharged into the Rio de Flag. Climate change will shift more of Flagstaff's precipitation from snowpack to rain, which could decrease aquifer recharge. Continuing to be innovative and focused on water efficiency and water conservation is essential going forward.

The other primary source of Flagstaff's water supply is surface water from Upper Lake Mary and water from the Inner Basin of the San Francisco Peaks. Both supplies are within forested, undeveloped watersheds of the Coconino National Forest, and at high risk for wildfire. Protecting these supplies from catastrophic wildfire is a key priority of the City, with watershed health programs funded through a water rate designated for that purpose. What are options for future water sources? One option is to expand groundwater development onto the City's Red Gap Ranch, located 40 miles east of Flagstaff with access to the C-aquifer, the area's largest and deepest underground water source. While this option ensures access that would increase the City's groundwater resource capacity, pumping and transportation infrastructure would be needed to deliver water to Flagstaff, including a 40-mile pipeline and booster stations to bring the water up 2,000 feet of elevation to the city. The water at Red Gap Ranch is slightly saltier than Flagstaff's current water supply and may need treatment before consumption, a process that would further increase energy use for the production of this water.

Another option is to investigate the opportunity for storm water to either serve as a water supply or to offset potable water uses.

Lastly, is the significant opportunity Flagstaff has to advance the treatment and reuse of reclaimed water. Increased use of reclaimed water whether directly or via recharge lessens demand on other water sources. However, this framework would require difficult community and municipal discussions of current water management systems and would involve new expensive treatment infrastructure development to accommodate the framework's implementation.

Flagstaff's current water supply is also subject to higher demand as the city's population and visitation increase. Adjusting current water management to include future demand will require the City to seek out new innovative solutions and consider the cost of building new infrastructure as well as the associated long-term greenhouse gas emissions. As Flagstaff considers future water security and its climate goals, the City will have to weigh the emissions, financial implications, and long-term resilience associated with various water sources and management strategies.

PRIORITY FOUR: WE WILL UPHOLD OUR COMMITMENTS

Healthy Forests and Open Spaces

Health and Safety

Economic Prosperity

Carbon Dioxide Removal



Healthy Forests and Open Spaces

Flagstaff will support thriving local ecosystems that are resilient to climate change, publicly accessible, and store carbon dioxide.

WHAT IT MEANS

Healthy Forests and Open Spaces refers to ecosystem health, environmentally sensitive lands, plants, soils, and wildlife in the context of the conservation and protection of natural systems. This target area also includes open spaces that protect environmental quality and biodiversity, support tourism, and protect historic and cultural resources.

Flagstaff is fortunate to have a bounty of beautiful natural spaces that provide multiple benefits for the community, including the provision of clean air and water, recreational opportunities, and wildlife habitat. Many of Flagstaff's natural systems and surrounding natural areas will be impacted by climate change, threatening important services such as water filtration, flood abatement, recreation, and fire protection. Changes in temperature, snowpack, and the abundance of diseases and pests will stress Flagstaff's surrounding forests and the species that depend on them. Although not formally accounted for in Flagstaff's greenhouse gas emissions inventory, natural ecosystems such as forests capture and store carbon, acting as a greenhouse gas "sink." Proper ecosystem management can optimize this process of carbon sequestration, as well as minimize the potential risk of greenhouse gas emissions from wildfires.

The ponderosa pine forests of northern Arizona have existed for thousands of years and evolved to benefit from frequent fires ignited by both seasonal monsoonal weather patterns and cultural burning practices. Unfortunately, more than a century of fire suppression-based management has left the forest in an altered condition. These changes threaten Flagstaff's natural resources, economy, infrastructure, and quality of life, which negatively impact recreation and tourism-based economies.

The threats and preventive solutions are complicated but well understood. Restoring the forest to its natural, fire adapted pattern can mitigate unnatural wildfire threats. Long term forest restoration strategies will also stabilize and enhance carbon storage. Collaborative efforts that involve agencies, communities and stakeholders are required to advance risk reduction projects.



Forest Health and Wildfire

Vulnerability to Climate Change

By 2100, Flagstaff communities are likely to face:

HIGH VULNERABILITY	HIGH VULNERABILITY	MEDIUM-HIGH VULNERABILITY	HIGH VULNERABILITY
Overall declines in forest health and widespread forest loss due to wildfires, drought, pests, and invasive species.	Larger, more frequent stand-replacing wildfires.	Larger, more frequent flooding after wildfires. More floods in general.	More beetle infestations and invasive species due to warmer, drier conditions.

Good Fire and Bad Fire

Fire plays a central role in structuring and regulating the function of forest ecosystems. The ponderosa pine ecosystem surrounding Flagstaff evolved to tolerate and flourish amidst regular fires of lower intensity. Low-severity fires are a natural part of Flagstaff's ecosystem – and a key component of the health of our forests. This is what we refer to as '**good fire,**' which burned young trees and forest floor materials.

As the Flagstaff region grew in the second half of the 20th century, the natural fire regimes were interrupted through fire suppression. Fire was often viewed as bad, leading to efforts to prevent or reduce the growth of all wildfires. This continual fire suppression in the forests of the western US resulted in substantial changes to forest structure, composition, and function. This resulted in dense forests and hazardous amounts of fuels in the forest, leading to the high-severity, stand-replacing fires we see across the west today.

Ecological restoration and fuels reduction programs – such as thinning or prescribed fires - attempt to assist in the recovery of ecosystem function in forests where the fire regime has been disrupted. This is an attempt to restore 'good fire' to the landscape. As Flagstaff seeks to restore forest health and become a fire adapted community, the community will need to continue conversations on how to support a fire-adapted forest and encourage the 'good fire' that is essential for our ecosystem.

Adapted from the Northern Arizona University Ecological Restoration Institute's online resource on ponderosa pine ecosystems: https://eri.nau.edu/research-topic/ponderosa-pine-ecosystem/

Walker Lake - Then and Now

These two photos document the same place – Walker Lake, north of Flagstaff – and illustrate the landscape changes after decades of fire exclusion.

Top photo: Walker Lake in 1875 by John Hillers

Bottom photo: Walker Lake in 2004 by Neil Weintraub



HOW WE'LL GET THERE

Environmental systems—including the Rio de Flag watershed, grasslands, wildlife corridors, cultural sites, sites of community significance, and biodiverse wildlife and plant habitats—provide benefits to the Flagstaff community. Ensuring that the forests in and around Flagstaff are healthy can reduce wildfire risk, increase climate resilience, and sequester carbon by facilitating the historic ponderosa pine ecosystem.

The City of Flagstaff is working to reduce the risk of unnaturally severe wildfires, restore the structure, pattern, composition, and health of fire-adapted ecosystems, and provide for wildlife and plant diversity. Much of this work depends on our ability to secure funding, work with regional and federal partners, and support forest-product industries. Focus areas include:

1. Developing sustainable, appropriately-scaled business models to harvest, process, and sell the wood products removed during ecological restoration-based thinning.
2. Transforming fire management policies and funding to better support the implementation of ecologically appropriate fire.
3. Developing new collaborations and funding sources to ensure that we can achieve the desired forest health outcomes across priority landscapes.
4. Increasing public engagement and education to help prevent wildfires. As Flagstaff's populations grows and vulnerabilities increase, there may be an increase in human-caused fires. Educational outreach programs can help to prevent unnatural, high-severity wildfires caused by human activity.

Building on a track record of forward-thinking wildland fire management

In 1997, the City of Flagstaff established a Wildland Fire Management Program (WFM) to address wildfire risks within City limits. The mission of WFM is to protect Flagstaff's residents, resources, and priority watersheds from the effects of catastrophic wildfire. Our vision is a community where Flagstaff thrives due to the Wildland Fire Management program's ability to leverage its unique skills and knowledge with Wildland Fire Response, Forest Management and Firewise community engagement. This program has evolved to include multi-jurisdictional fire management and forest health partnerships.

In November 2012, residents of Flagstaff overwhelmingly approved a $10 million bond to support forest restoration work within key watersheds on the Coconino National Forest and on State and City lands. The Flagstaff Watershed Protection Project, led by the Wildland Fire Management Program, is a unique effort where forest restoration work on the National Forests is being funded by a municipality. This $10M investment is designed to mitigate between $573 million and $1.2 billion in future costs.

During the summer of 2020, the City of Flagstaff developed an innovative way to further invest in the prevention of undesirable wildfire impacts. The Water Resource and Infrastructure Protection fee is now included on City of Flagstaff water services monthly bills. This fee will support the Flagstaff Fire Department's Wildland Fire Management Program's ability to protect Flagstaff and its priority watersheds from the effects of catastrophic wildfire. A fee of $0.52 per 1000 gallons of water used will provide a reliable and stable source of funding for the Wildland Fire Management Program.

The continuing work to improve forest health, transform fire management, and protect public health is multi-faceted. Forest health and open space work often depends on diverse partnerships, complex projects, or decades-long planning efforts.

Carbon sequestration in fire-prone forests

Flagstaff's forests sequester carbon from the atmosphere. How do forest health improvements relate to carbon sequestration? Research at the University of New Mexico and the USDA Forest Service provides actionable information on the long-term carbon benefits of reducing high-severity risk:

Research Brief for Forest Managers: Carbon Sequestration in Fire-Prone Forests
Matthew Hurteau, University of New Mexico.
Malcolm North, USDA Forest Service, PSW Research Station

"As trees grow, they sequester carbon from the atmosphere, some of which is converted to wood. Carbon removed from the atmosphere and stored in trees provides a **climate mitigation benefit…**. On lands that are currently forested, increasing the climate mitigation benefit is more complicated than increasing the amount of tree biomass per unit area. **The role of disturbance in forested systems must be considered** since large-scale disturbances such as wildfire can release carbon back to the atmosphere."

"In the western United States, a long period of fire suppression has increased tree density and fuel accumulation. In forest types that were historically maintained by frequent, low-severity fire, fire suppression has increased the risk of high-severity wildfire. Fuels reduction treatments to reduce this risk and restore forests to a more open, fire-resistant structure are being widely implemented. These treatments **carry a near-term carbon cost** because standing tree biomass is reduced to reduce the risk of high-severity fire."

"However, **there are long-term carbon benefits from reducing high-severity fire risk.** By reducing tree density and fuels, and retaining large, fire-tolerant species, **carbon loss is reduced when a wildfire occurs.** Forest management based on ecosystem-specific practices will likely yield the greatest benefit in carbon storage and long-term stabilization."

"Management Implications:

- Consolidating carbon stocks in fewer, larger trees reduces the risk of carbon loss from fire.
- The pre-suppression forest structure provides the best target from maintaining sustainable carbon stocks and ecological function."

To review the full research brief and reference papers, see:
https://ucanr.edu/sites/CentralSierraForestry/files/330089.pdf

A few illustrative partnership efforts to date include:

- The **Greater Flagstaff Forest Partnership** is an alliance of environmental, governmental, and business organizations, working on forest ecosystem restoration in and around Flagstaff. GFFP has been supported by the City of Flagstaff since 1996.
- **Community volunteer events** on Flagstaff's legally designated open space properties remove invasive weeds that threaten natural ecosystems.
- The City has procured multiple rounds of grant funding to distribute HEPA air purifiers to residents who struggle during poor air quality events.

- In 2021, the Flagstaff Fire Department partnered with Summit Fire and Medical District, the International Association of Fire Chiefs, and the Nature Conservancy's North America Fire Program partnered together to host the first Prescribed Fire Training Exchange (TREX) in Arizona. This exchange brought together structural and wildland firefighters from nine agencies and partners in northern Arizona. The Flagstaff TREX crew accomplished 881 acres of prescribed fire on city and federal lands while training in prescribed fire, land management, the wildland-urban interface, and smoke management.

Flagstaff's Open Spaces

The Flagstaff community has access to over 3,000 acres of legally-designated open space properties within the City of Flagstaff limits, including Picture Canyon Natural and Cultural Preserve, Observatory Mesa Natural Area, and McMillan Mesa. These areas are managed to provide recreational and educational opportunities. Open Space Stewards – volunteers from our community – assist the City in maintaining open spaces and engaging the public.

To many Flagstaff area residents, open space is the defining feature of Flagstaff's character and attraction. Open space defines the region's quality of life, protects the region's ecological health, supports existing and future economic development, and preserves historic and cultural resources.

To ensure the continued preservation and sustainable enjoyment of our open spaces, the City works to improve the management of its 3,069 acres of protected open space. The City strives to improve ecosystem protection and open space access, such as through improved land management, improving trail linkages to open spaces, or developing partnerships with nearby landowners. Over the coming decades, the City seeks to identify and fund management at $100 per acre of designated open space.

Native plants and invasive weed control

Climate change can increase the damage done by invasive weeds. As the climate changes and as Flagstaff grows, the importance of native plants increases. Incorporating low-water native plants and climate-adapted native plants into Flagstaff's developed areas and neighborhoods helps to conserve water resources, provides habitat for animals and pollinators, and increases community resilience.

An increased focus on supporting native plants and removing invasive weeds will help Flagstaff to sustain our natural landscape. This will require engaging volunteers, creating regional partnerships, and engaging with the community. A coordinated strategy can support native plants in the built environment and natural landscapes. City standards and processes can also be revised to better support native plant restoration and control invasive weeds.

Finally, a changing climate will stress Flagstaff's dominant ponderosa pine ecosystem. Proactive land management can include collaborations to help Flagstaff plant communities adapt to a changing climate or restore areas after disturbance.

TARGET AREA GOALS

Goal	Year
Maintain ecosystems within and outside of the City of Flagstaff as dependable sources of recreation, economic prosperity, biodiverse plant and wildlife habitat, cultural identity, and spiritual connection in the face of a changing climate and expected ecosystem transitions.	2030
Strengthen ecosystem resilience to climate change with a focus on benefits provided by local ecosystems, including forests, watersheds, and wildland-urban interface areas.	2030
Incorporate the use of climate-adapted native plants in landscaping and restoration work in the built environment.	2030

STRATEGIES TO ACHIEVE HEALTH FORESTS AND OPEN SPACES

HF-1: Protect existing forests, resources, and meaningful open spaces.

Opportunities for Action

1. Support planning and zoning efforts that protect natural resources, including surface water resources.
2. Reduce urban encroachment into the forest, such as by promoting infill development as supported in the Regional Plan.
3. Integrate leave no trace into City programming, including Open Space, Parks and Recreation and the Flagstaff Fire Department programs.
4. Create dedicated funding for outreach and education related to the importance of Open Space preservation and to meet the changing needs of the Open Space section.
5. Increase funding for the procurement and management of legally designated open spaces.
6. Work with partners to map invasive plant infestations, seek funding and organize effective and well-coordinated programs, and work with development projects to create invasive species and weed management plans, to control invasive plant species across all jurisdictions.
7. Offer education, assistance, and incentives to private property owners to control invasive plant and weed species and replace them with climate-adapted native plants on their land.
8. Increase funding to manage the most aggressive and difficult to control weeds that have the greatest potential for negative environmental impacts, to replace them with climate-adapted native plants.

HF-2: Restore and maintain the natural fire-adapted structure and pattern of the forests of the greater Flagstaff region through collaboration with partners.

Opportunities for action

1. Identify additional permanent funding from the City of Flagstaff to support forest health improvements to reduce wildfire risk and provide ecosystem service protection.
2. Establish long-term governmental agreements with federal, state, local, tribal, non-profit and private partners to restore and maintain the national fire-adapted structure and pattern through forest thinning, prescribed burning, post-treatment monitoring, and invasive weed control.
3. Support restoration-based forest product industry innovation to use the abundant forest products resulting from forest thinning and restoration.
4. Increase capacity of year-round wildland fire staffing.
5. Support the transformation of state and federal policies that promote wildfire risk reduction.

HF-3: Educate the public on forest health and wildfire risk reduction.

Opportunities for action

1. Expand supportive programming and public awareness campaigns on the linkages among human-caused fires and public health, quality of life, ecological resources, and carbon dioxide removal, targeted at both Flagstaff residents and visitors.
2. Increase City of Flagstaff staffing and resources for outreach and education related to forest health.
3. Increase capacity for Firewise programming and wildland-urban interface (WUI) code enforcement within Flagstaff neighborhoods.
4. Increase awareness of the need for home hardening and the resources available to support residents in home hardening and fire wise activities.

HF-4: Support innovation in the forest health and wildland fire sectors.

Opportunities for action

1. Calculate for the carbon stored in Flagstaff's open spaces, forested areas, and regional forests, to understand carbon impacts of both forest health improvements and high severity wildfires.
2. Build collaborations and promote shared investment in forest health and carbon dioxide removal industries.
3. Support innovation in the forest products industry.
4. Support the use of public and private land to allow for establishment of forest product industry operations.

HF-5: Encourage diverse native plant ecosystems in the built environment.

Opportunities for action

1. Expand current incentive programs to encourage low-water and climate-adapted native landscaping.
2. Strengthen current zoning code requirements for native landscaping to include the use of climate-adapted varieties of native species that can survive in changing conditions.
3. Develop a municipal strategy for identifying and utilizing climate-adapted native plants.
4. Provide educational opportunities for residents to learn about the techniques and benefits of native and climate-adapted landscaping.

HF-6: Proactively manage for expected ecosystem transitions, including the potential threats to ponderosa pine forests.

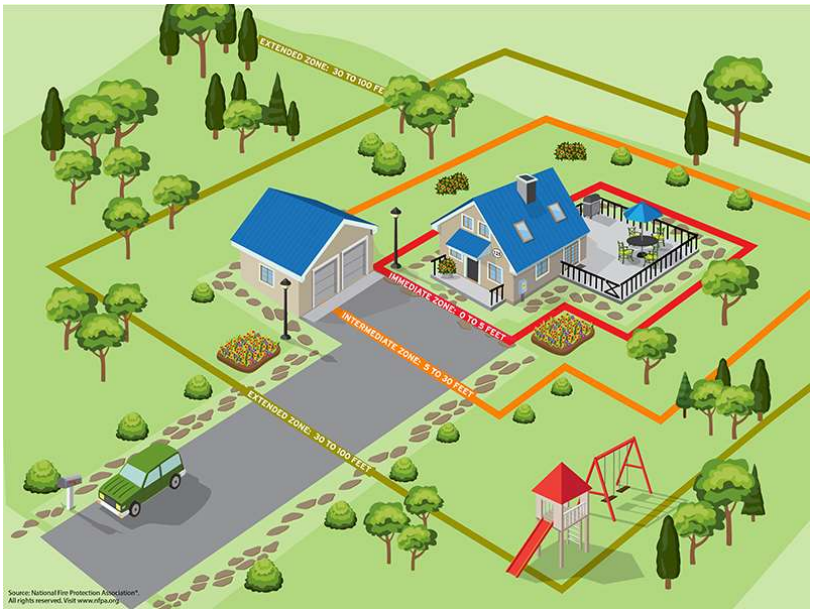
Opportunities for action

1. Collaborate with the research community and on-the-ground partners on projects related to assisted migration and identification of plant varieties that are more tolerant of future climate conditions.
2. Partner with land managers to increase the use of climate-adapted native plants in all restoration efforts.
3. Implement an education campaign related to climate change and ecosystem/vegetation adjustments and resulting impacts in Flagstaff's natural areas.

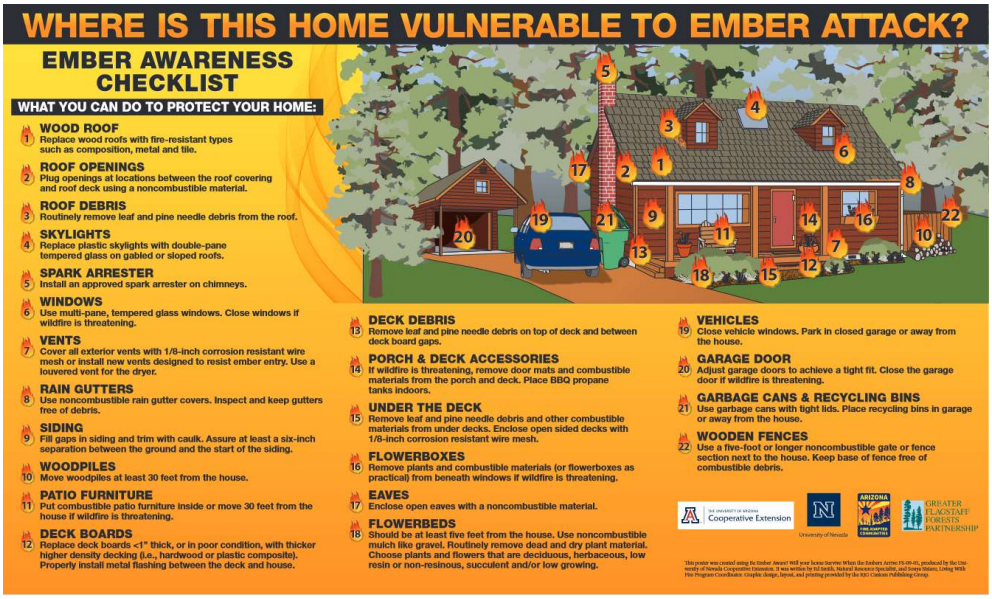


Evolving Wildfire Risks

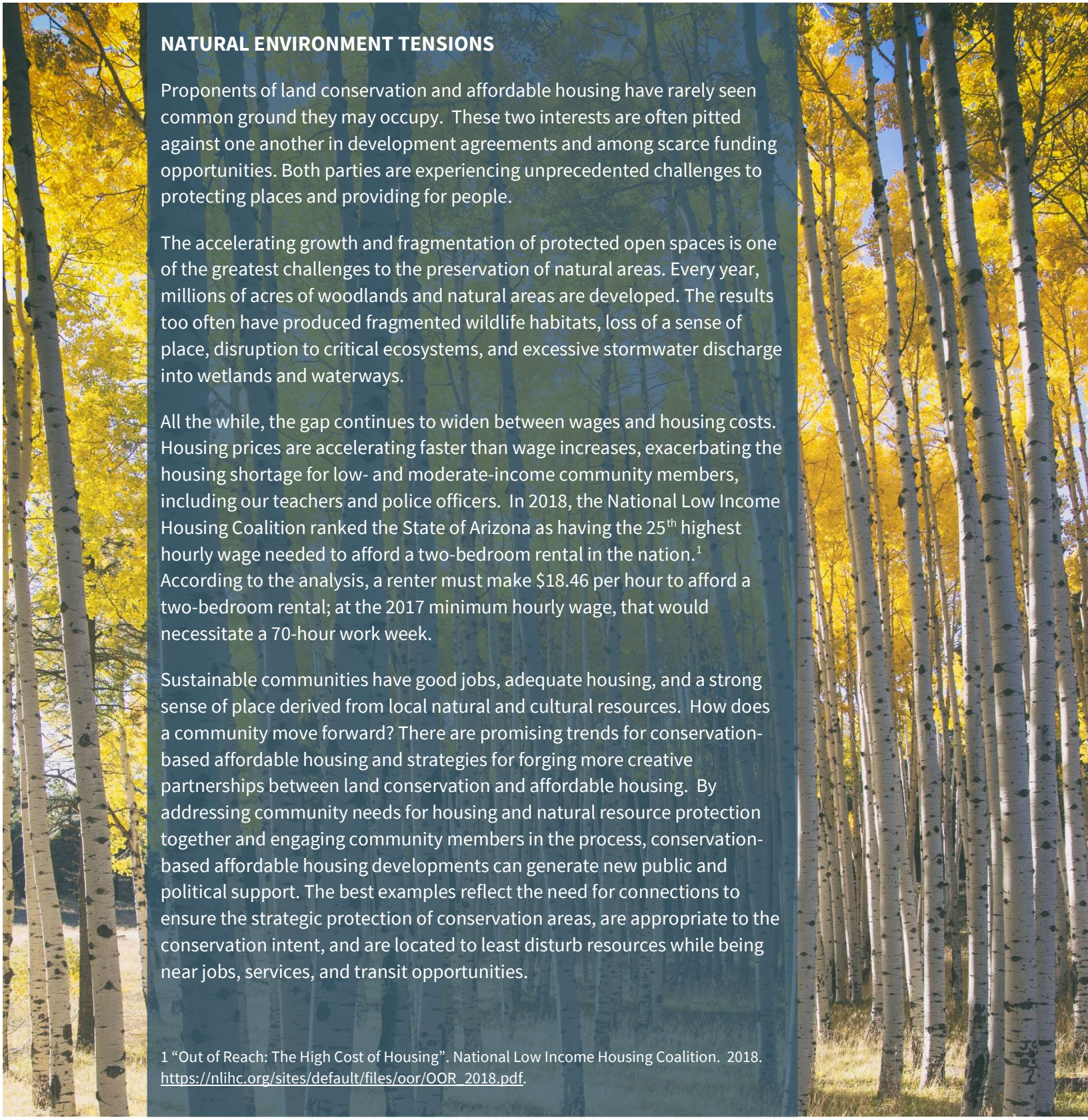
As Flagstaff prepares for the future, residents and businesses will need to prepare for changing wildfire risks. As the West's devastating fires of the last decade have shown, homes far from the wildland-urban-interface (WUI) are at risk. Residents are encouraged to not only 'firewise' their properties but to also 'harden' their homes in the event of 'ember attacks'. The City encourages to look beyond their properties and to help create both firewise neighborhoods and a fire-adapted community.



The above graphic depicts three home ignition zones, extending up to 100 feet from the house. Source: National Fire Protection Association (NFPA)



A home hardening flyer was created by the Greater Flagstaff Forest partnership and partners.



NATURAL ENVIRONMENT TENSIONS

Proponents of land conservation and affordable housing have rarely seen common ground they may occupy. These two interests are often pitted against one another in development agreements and among scarce funding opportunities. Both parties are experiencing unprecedented challenges to protecting places and providing for people.

The accelerating growth and fragmentation of protected open spaces is one of the greatest challenges to the preservation of natural areas. Every year, millions of acres of woodlands and natural areas are developed. The results too often have produced fragmented wildlife habitats, loss of a sense of place, disruption to critical ecosystems, and excessive stormwater discharge into wetlands and waterways.

All the while, the gap continues to widen between wages and housing costs. Housing prices are accelerating faster than wage increases, exacerbating the housing shortage for low- and moderate-income community members, including our teachers and police officers. In 2018, the National Low Income Housing Coalition ranked the State of Arizona as having the 25th highest hourly wage needed to afford a two-bedroom rental in the nation.[1] According to the analysis, a renter must make $18.46 per hour to afford a two-bedroom rental; at the 2017 minimum hourly wage, that would necessitate a 70-hour work week.

Sustainable communities have good jobs, adequate housing, and a strong sense of place derived from local natural and cultural resources. How does a community move forward? There are promising trends for conservation-based affordable housing and strategies for forging more creative partnerships between land conservation and affordable housing. By addressing community needs for housing and natural resource protection together and engaging community members in the process, conservation-based affordable housing developments can generate new public and political support. The best examples reflect the need for connections to ensure the strategic protection of conservation areas, are appropriate to the conservation intent, and are located to least disturb resources while being near jobs, services, and transit opportunities.

1 “Out of Reach: The High Cost of Housing”. National Low Income Housing Coalition. 2018. https://nlihc.org/sites/default/files/oor/OOR_2018.pdf.

Health and Safety

Flagstaff will take proactive steps to protect and improve health, provide reliable and multi-faceted access to health services, prepare for disruptive change, and increase infrastructure and emergency response system resilience.

WHAT IT MEANS

Climate change will impact health across the Flagstaff community. These impacts will range from acute risks like wildfire to more distributed impacts like increases in allergens. While the list of health impacts is extensive, pertinent examples include:

- Extreme heat and wildfire smoke are significant risks for disproportionately impacted communities such as Flagstaff's outdoor workers, the elderly, the very young, and low-income populations.
- Extreme heat kills more people in the US than any other weather event. Flagstaff will experience more days over 90 degrees as regional temperatures warm. While this is not extreme heat when compared to most other places in Arizona, Flagstaff does not possess the infrastructure or systems to deal with extended extreme heat. Many homes lack air conditioning or proper ventilation, and risks are particularly higher for elderly and low income populations, as well as those living in older buildings that don't have updated climate control infrastructure.
- Increased wildfire risk will stress emergency services and expand wildfire risk areas to encompass more homes. Increased severity and frequency of wildfires are highly likely to lead to loss of homes, challenges to businesses, damage to infrastructure and even loss of life. Both fires and flooding often necessitate temporary evacuations, that can potentially lead to long-term displacement or homelessness.
- Post-fire flooding is a substantial risk that can wreak havoc for years or even decades after an initial fire, leading to injury, loss of life, significant stress, displacement, and other long-term health impacts.
- Climate change is already changing vector (mosquito) densities and ranges and there is potential for increases in the prevalence of various diseases and parasites.
- Climate change will increase the frequency of extreme events – increasing the severity of both winter and monsoon storms. These storms can cause direct and indirect health challenges, from home flooding and traffic collisions to decrease in access to services or difficulties stemming from limited mobility.
- With rising temperatures globally, we will likely see an influx of individuals experiencing homelessness as people try to escape extreme heat in southern climates. This may increase the potential for life-threatening situations along with the increase in wildfires. An increase in interactions among city dwellers and individuals experiencing homelessness has the potential to

cause friction or lead to the further alienation of some of our most disproportionately impacted community members.

- As the changing climate leads to increased global conflicts and pressures on all environmental, social and financial systems, individuals and community will experience increased stress and mental health challenges.
- Climate change increases the risk of global pandemics, as environmental and land use changes lead to increased interaction among animals and humans.

These risks and vulnerabilities, among others, will increase the pressure on our environmental, social, governmental, public safety, and public health systems. These systems and associated services rely at least partially on community funding, illustrating the financial challenges of climate change. The Flagstaff community will be faced with difficult choices about how to use limited financial resources to protect health and reduce risk.

Shifting from a fire season to a fire year

Flagstaff is situated in the middle of a ponderosa pine forest, a fire-adapted ecosystem with a long history of fires. As the climate changes and the southwestern United States has remained in historic drought conditions, fire professionals and federal agencies are shifting from thinking of a 'fire season' to a 'fire year':

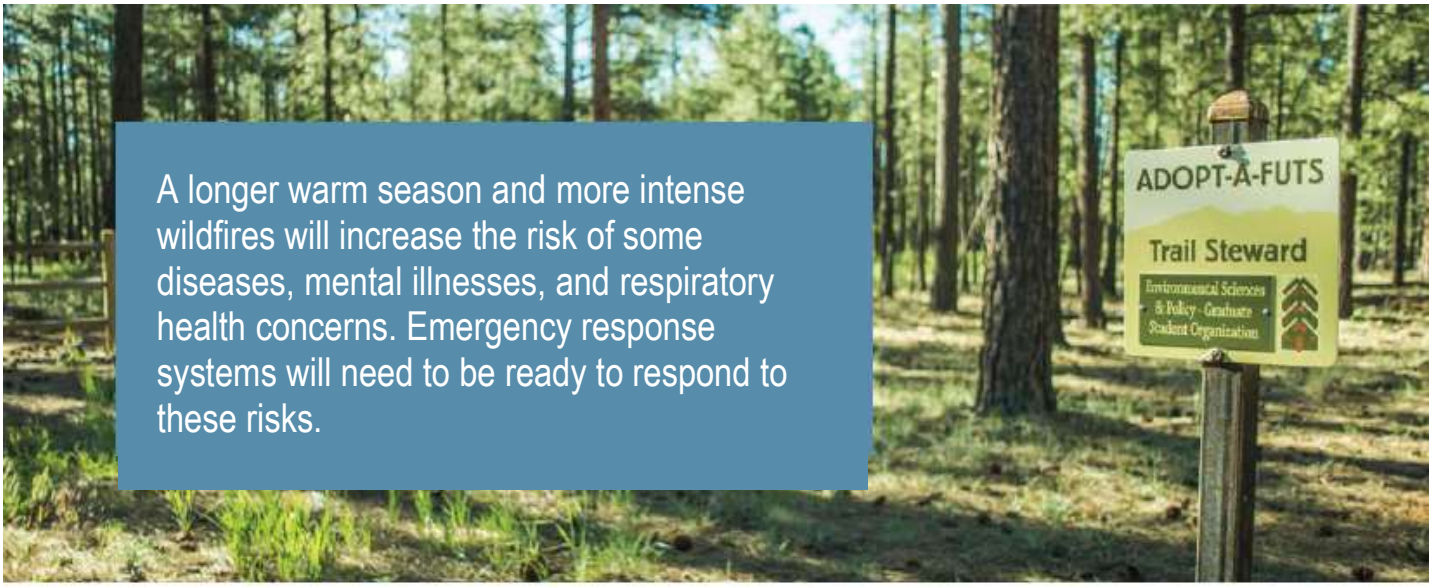
"Wildfire is year-round for much of the United States and the Forest Service is shifting to the concept of a fire year. Wildfire season has become longer based on conditions that allow fires to start and to burn—winter snows are melting earlier and rain is coming later in the fall. What was once a four-month fire season now lasts six to eight months. For example, fires in recent years have burned well outside of the typical fire season throughout California, Arizona, New Mexico, Tennessee and New Jersey. Fires in the winter months are becoming part of the norm."

The Marshall Fire, a grass fire in Bounder County, started on December 30, 2021. It was among the most damaging in fires in Colorado's history – destroying over 1,000 homes, prompting the evacuation of 35,000 people, costing over $10 billion, and killing two individuals.

As Flagstaff shifts to plan for a "fire year," it must develop new strategies to plan for increased risk and vulnerabilities throughout all seasons. Wildfire can now reduce air quality and impact health in any month. Residents will need to shift expectations and maintain preparedness throughout the year.

"Wildfires in All Seasons?' United States Department of Agriculture
https://www.usda.gov/media/blog/2019/06/27/wildfires-all-seasons

Marshall fire information: https://wildfiretoday.com/2022/10/29/report-released-for-the-marshall-fire-which-destroyed-1056-structures-southeast-of-boulder-colorado/



A longer warm season and more intense wildfires will increase the risk of some diseases, mental illnesses, and respiratory health concerns. Emergency response systems will need to be ready to respond to these risks.

Public Health, Safety, and Emergency Services
Vulnerability to Climate Change

By 2100, Flagstaff communities are likely to face:

MEDIUM VULNERABILITY	MEDIUM VULNERABILITY	LOW VULNERABILITY	MEDIUM-LOW VULNERABILITY	MEDIUM-LOW VULNERABILITY
More periods of poor air quality due to larger and more frequent wildfires.	More extreme heat days (>90°F) could increase risk of heat-related illness.	Increased exposure to allergens is possible as spring grows warmer and more dry weather increases dust.	More frequent extreme events could increase risk of mental health issues.	Increased exposure to valley fever and West Nile virus is possible as the warm season lengthens. Existing response resources may be adequate.

HOW WE'LL GET THERE

Protecting public health will require a diverse suite of strategies to assess vulnerabilities, reduce risk, change behaviors, and help build resilience.

Efforts to reduce risks to health and safety span sectors:

- To respond to Flagstaff's highest climate threat, Flagstaff's wildland urban interface code seeks to reduce vulnerabilities and risk across the community.
- The Ready Set Go campaign encourages residents to be more informed about potential wildfire emergencies and how to be prepared for and evacuate during emergency situations.
- Coconino County Health and Human Services provides health and safety information to residents experiencing flooding in their neighborhoods, with a particular emphasis on mosquito control.
- The Flagstaff Fire Department and the Flagstaff Sustainability Office provide HEPA air purifiers to disproportionately impacted community members to assist during poor air quality days.

These efforts highlight just a few ways that public health and climate intersect across our communities. Analysis is needed to identify specific health risks and vulnerabilities, assess neighborhood vulnerabilities, and pinpoint which communities are likely to be most impacted.

To maintain community health amidst the challenges of climate change, Flagstaff must develop a comprehensive approach to building more resilient systems, protecting health, and meeting the evolving needs of community members. Collaborations across agencies will be critical: the City of Flagstaff will partner with Coconino County and other regional actors to anticipate changing risks and build community health resilience. Efforts must address both acute and distributed health risks, such as wildfire threats to homes and increases to seasonal allergens.

As the City works with its partners to expand health and climate analysis and programming, it will need to incorporate the following concepts:

- Equity and community health are intricately related. The elderly, people experiencing homelessness, and low-income populations are most vulnerable to climate change impacts. Identifying and protecting disproportionately impacted communities now can help reduce the negative impacts of climate change.
- Functional public infrastructure such as roads, shelters, and utility services are critical for sustainable economic and social wellbeing in the face of climate change. Actions to improve the resilience of public infrastructure, such as through improved maintenance and planning, will enable the community to withstand unanticipated shocks and disruptions like flood events.
- Community engagement on the relationships between climate change and health can build community preparedness and resilience, helping individuals to better prepare for changing risks. Actions that build community awareness about vulnerabilities—such as the interaction of heat risks, disease, and poor air quality—will give community members the knowledge needed to plan and take action.

- Public health systems across the country are often simultaneously under-resourced and facing increasing demands. As climate change increases community challenges, the demands on already-stressed public health infrastructure may exceed its capacity. The Flagstaff community will need to work together to prepare for climate change hazards and their effect on public service demand and provision.

The City of Flagstaff will partner with Coconino County Health and Human Services to better understand the relationship between climate change and health in Flagstaff's neighborhoods and provide programming that can address gaps and serve the needs of residents amidst disruptions. Resilience-building to reduce risk and improve health will take the commitment of the City, regional institutions, local businesses and organizations, neighborhood groups and individuals.

TARGET AREA GOALS

Goal	Year
Prioritize public safety and health services in the face of anticipated climate change impacts.	2030
Improve the resilience of building infrastructure to climate hazards.	2030
Anticipate climate change impacts that will affect public health by identifying at-risk community groups and neighborhoods and planning appropriate responses.	2030
Increase community engagement and improve communications on health vulnerabilities and building resilience.	2025



STRATEGIES TO ACHIEVE HEALTH AND SAFETY

HS-1: Identify community health impacts from climate change and target support to assist at-risk populations in adapting to change and protecting their health.

Opportunities for Action

1. Characterize relative fire, flood, mosquito, and other risk exposures to climate change among community groups and neighborhoods.
2. Adequately fund health and emergency services reaching populations disproportionately impacted by climate change impacts.
3. Address woodsmoke, such as through programming that encourages use of certified wood stoves, a public education campaign, and/or rebates for wood stove buybacks or replacements.
4. Encourage low-emissions, energy-efficient climate control measures, such as through building codes, to help sensitive populations deal with higher temperatures.
5. Work with partners to identify threats to food security for disproportionately impacted populations and to develop solutions.
6. Increase information available to community members regarding increased risk of health impacts due to climate change and actions they can take to protect their health and increase community resilience.
7. Improve community messaging on how to respond to simultaneous heat risks and poor air quality due to smoke and provide resources to disproportionately impacted community members.
8. Establish programs to assist disproportionately impacted populations during extreme temperature and dangerous air quality events.



HS-2: Prepare for changing risks to public health due to climate change and increase collaborations across agencies to improve health and climate awareness, preparedness, and resilience.

Opportunities for action

1. Continue collaborations to study and prepare for increased risk of illness and disease due to increased dust, a warmer climate, higher mosquito densities, and other potential results of climate change.
2. Initiate a working group on public health and climate change, including participation from the Coconino County Health and Human Services , the City of Flagstaff, and NAU, among others, to inform policy and programming.
3. Increase collaboration to evaluate the interaction between the built environment and disease vectors like mosquitos.
4. Study how the changing ecosystem around Flagstaff contributes to increased risk of disasters.
5. Support Coconino County Health and Human Services in providing education to healthcare providers on how climate change will affect heat-related illness, altitude-related issues, fatalities, and demand for services.
6. Build a climate-health hazards vulnerability index for the Flagstaff community.

HS-3: Adequately fund services for disaster preparedness.

Opportunities for action

1. Dedicate increased funding to City of Flagstaff emergency management and disaster preparedness and accommodate demand for health services among at-risk populations.
2. Embrace grassroots and neighborhood movements that advocate for greater services.
3. Create educational campaigns to raise awareness of climate-related health and safety issues and services.
4. Increase coordination between Flagstaff agencies, institutions and community organizations regarding climate and health, disaster preparedness and increasing vulnerabilities due to climate change.
5. Complete the Rio de Flag flood control project.
6. Incorporate considerations of disaster preparedness, passive survivability, distributed on-site energy generation and back-up power, and living buildings into City of Flagstaff codes, plans, and processes.

HS-4: Improve the resilience of public infrastructure and City facilities.

Opportunities for Action

1. Create preparedness and recovery plans for all City divisions.
2. Prepare for existing City of Flagstaff buildings to be used in different ways, both in low-impact ways, such as community members using public buildings as cooling centers on hot days, and as safe-havens during acute emergencies.
3. Construct new City of Flagstaff buildings to be carbon neutral and designed for use as resilience hubs, providing safe havens for community members during all types of disruptive events.
4. Update engineering standards and maintenance practices to increase resilience amidst an increase in extreme events such as higher temperatures and increased incidences of flooding.
5. Incorporate green infrastructure principles into all public infrastructure projects, creating more natural amenities throughout the city.
6. Develop reserve funding for extreme weather events in the City of Flagstaff.
7. Engage community leaders, partners, and agencies in planning for the graceful failure of community systems, support structures, and infrastructure during extreme events and power disruptions.
8. Foster a culture of emergency preparedness and planning among City staff through regular conversations about vulnerabilities and resilience building, scenario analysis, and emergency planning exercises.

Regenerative and health-promoting buildings

Living Buildings are:

- Regenerative buildings that connect occupants to light, air, food, nature, and community.
- Self-sufficient and remain within the resource limits of their site.
- Create a positive impact on the human and natural systems that interact with them.

Source: The International Living Future Institute

HEALTH AND SAFETY TENSIONS

Climate change affects different groups in different ways. In some cases, climate change threatens cultures, communities, and social fabric. The indigenous communities of the Southwest face particularly high vulnerabilities, according to the National Climate Assessment.[1]

A May 2018 Public Radio International report covered the story of sheep herder Lorraine Herder, a woman living on Black Mesa, a remote area of the Navajo reservation in Northern Arizona, northeast of Flagstaff.[2] Lorraine is part of a livestock-raising tradition that is under threat from climate change.

"My mom was a sheep herder all her life, so I've been with the sheep ever since I was a little girl, and it means a lot to me," Herder says. "I wanted to live that life, you know, living off the land." However, rising temperatures and shrinking water sources on the Navajo reservation are a major threat to these important Navajo cultural traditions. "The drought makes it difficult for us," Herder says, and adds, "The biggest challenge is finding water for our livestock right now. We're the last few shepherds out here."

Scientists studying the impact of global warming on the Navajo Nation are noticing major changes in the environment. "The amount of surface water flowing in streams on the Navajo Nation has declined by about 98 percent over the 20th century," says Dr. Margaret Redsteer, a scientist at the US Geological Survey in Flagstaff, Arizona. The effects of climate change have taken a major toll on families who have lived on their ancestral Navajo land for generations. Many residents already live without running water, making the situation even more difficult.

This story highlights how those populations with the fewest greenhouse gas emissions—and that thus contribute the least to climate change—are often the most affected. This inequity is true both internationally and within communities. Poorer nations are more vulnerable to climate change impacts, especially shifts in agriculture that threaten food supply and access.[3,4] Low-income households, which have lower carbon footprints, will likely struggle more to adapt to change.[5,6] In addition, low-income communities are often located in areas with greater exposure to climate change threats (e.g., natural hazards like flooding), placing those communities at increased risks with limited resources.[6] While many such communities have practiced sustainability for generations, climate change threatens their tradition and culture. This persistent imbalance compels Flagstaff to consider equity and vulnerabilities when considering climate change and taking action.

1 "Indigenous Peoples." National Climate Assessment. https://nca2014.globalchange.gov/highlights/report-findings/indigenous-peoples. 2 "Navajo women struggle to preserve traditions as climate change intensifies." PRI. https://www.pri.org/stories/2018-05-25/navajo-women-struggle-preserve-traditions-climate-change-intensifies. 3 "The distributional impact of climate change on rich and poor countries." Mendelsohn, et al. https://doi.org/10.1017/S1355770X05002755. 4 The World Bank. "Shock Waves: Managing the Impacts of Climate Change on Poverty." https://doi.org/10.1596/978-1-4648-0673-5. 5 "Income inequality and carbon consumption: evidence from environmental Engel curves." The London School of Economics and Political Science. http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2017/11/Working-Paper-285-Sager.pdf. 6 The World Bank. "Shock Waves: Managing the Impacts of Climate Change on Poverty." https://doi.org/10.1596/978-1-4648-0673-5

Economic Prosperity

Flagstaff will cultivate a prosperous and stable economy with abundant and equitable access to employment and entrepreneurship opportunities.

WHAT IT MEANS

Economic prosperity refers to community and economic health, including opportunities to reduce emissions and help the community's business and tourism sectors prepare for climate change.

While climate change will impact all sectors of the local economy, by preparing for change, the Flagstaff community can adapt to changing conditions while creating a stronger community and greater shared prosperity. Businesses can help lead the way in this transition through creativity, innovation, and resilience.

The City of Flagstaff works to develop a diverse, sustainable economy that provides benefits across the Flagstaff community. Tourism and visitation are and will remain strong economic drivers for Flagstaff. Meanwhile, Flagstaff's business sector goes far beyond - ranging from biomedical manufacturing to astronomy and brewing. Flagstaff offers residents and visitors alike a wide range of cultural and outdoor experiences, through offerings like local bike shops, regional museums, a vibrant non-profit sector, markets and festivals. Business attraction efforts encourage relocation by companies that provide high wages and have low environmental and water impacts. All of these forces combined provide job opportunities and careers to the greater Flagstaff region.



Climate change will have specific effects on visitation. To prepare for low-snow years, Flagstaff will need to continue to diversify its tourism activities and businesses. Conversely, rising temperatures in Central Arizona will likely lead to increased visitation to Northern Arizona in the summer months. Increased summer visitation can create both opportunities and challenges – businesses may benefit from increased economic activity, while Flagstaff's infrastructure and housing sector may face pressure. Preparing for these changes can help the city to foster a stable and vibrant economy, improve community health, and benefit from visitation.

Visitation also contributes to Flagstaff's energy use, water consumption, and transportation emissions. Efforts to minimize the environmental impact from tourism makes good business sense and can position Flagstaff as a visible leader in sustainability.

For further discussion on visitation and recreation, see the Inclusive Recreation Target Area on page 76.

Flagstaff's Economy at a Glance

Key industry sectors

- Advanced Manufacturing
- Astronomy
- Bioscience
- Craft Brewing
- Digital / eCommerce
- Entrepreneurship
- Retail
- Tourism

Large local employers

- Northern Arizona University
- Flagstaff Medical Center
- W.L. Gore & Associates
- Flagstaff Unified School District
- Coconino County
- City of Flagstaff
- Walmart
- Nestle Purina PetCare
- The Guidance Center
- US Forest Service
- Coconino Community College



Flagstaff's winter recreation is expected to change as snowpack declines and becomes less predictable. Our businesses and services will need to be ready to adapt and evolve.

Tourism and Recreation
Vulnerability to Climate Change

By 2100, Flagstaff communities are likely to face:

MEDIUM-HIGH VULNERABILITY	MEDIUM-LOW VULNERABILITY
	
Significant snowpack loss may reduce winter recreation and tourism.	More wildfire, drought, or extreme heat may temporarily reduce recreation and tourism in summer, spring, and fall.

HOW WE'LL GET THERE

By promoting a sustainable local economy, Flagstaff can support businesses as they reduce emissions and plan for a changing climate. Climate considerations should be integrated into core economic decision processes, through systematic change to policy and assessment tools, performance indicators, risk models, and reporting requirements.

While climate change will present challenges, it also provides extensive opportunities for advancing innovative technology, solutions-focused entrepreneurship, and the development of a circular economy. To reduce emissions, build community resilience, and increase equity, the international community will rely on creativity, and technological advancement, and new ways of doing business.

*The solar industry illustrates the power of technological innovation and rapid growth. Since 2011, the solar industry has experienced an average annual growth rate of 33%. In 2021, the solar industry provided more than 255,000 jobs and generated $33 billion in private investment in the US economy (Solar Energy Industry Association).*Flagstaff can foster a robust, diverse economy that reduces environmental impacts, supports residents and provides climate solutions. Flagstaff can continue to expand on its current sustainable business development activities:

- The annual Innovate Waste and Carbon Neutrality Challenge incentivizes businesses to discover new ways to convert waste into marketable products, reduce emissions or remove carbon dioxide from the atmosphere.
- The Mountain Line bus system offers a weekend bus route to Snowbowl to serve both residents and tourists who ski and snowboard.
- The Sustainable Automotive Tax Credit helps ensure that economic benefits of converting to electronic vehicles are received by Flagstaff businesses and residents.
- UACJ Automotive Whitehall industries, a manufacturer of electric vehicle parts, has recently selected Flagstaff for a new manufacturing plant, bringing millions of dollars in investment and hundreds of high wage jobs.
- The City of Flagstaff is the first participant in the APS Green Power Partners program, ensuring that 100% renewable electricity powers municipal operations. This is a first step in sourcing higher portions of the community's electricity from renewable sources, something many businesses are seeking to fulfill their own climate goals.

Flagstaff can continue to build on these successes, spurring climate innovation, supporting climate action by businesses, and strengthening the business sector to help meet the needs of residents and visitors alike.

TARGET AREA GOALS

Goal	Year
Build a diverse, strong, resilient, and equitable economy in the face of threats from climate change, supporting community members whose jobs are at risk from climate change impacts and the creation of jobs in renewable energy and energy efficiency.	2030
Identify threats to current industries from climate change and opportunities for new industries	2025

STRATEGIES TO ACHIEVE ECONOMIC PROSPERITY

EP-1: Accelerate the transformation to a low-carbon economy that minimizes emissions and spurs innovation.

Opportunities for action:

1. Promote Flagstaff as a climate action committed destination by highlighting the businesses that are taking steps to reduce resource consumption.
2. Strengthen the fossil fuel divestment policy for the City of Flagstaff.
3. Promote Flagstaff as a car-free destination through informational campaigns for visitors.
4. Encourage business development for businesses that have lower or beneficial impacts on natural resources.
5. Seek to attract and develop businesses that provide leadership or innovation in the climate action sector as part of their business model.
6. Promote circular economy principles through education campaigns and roundtables with business leaders focused on the opportunities that a circular economy provides.
7. Encourage visitor-focused businesses to implement programs that reduce resource consumption.
8. Promote workforce development efforts that support the jobs of the future and the shift to climate-friendly, innovative technologies.

EP-2: Support the adaptation efforts of local businesses as the climate changes and the economic landscape shifts.

Opportunities for action:

1. 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.
2. Work with businesses to assess their climate change vulnerability and plan for the future.
3. Utilize existing community resources to support community members whose jobs may be at risk from climate change impacts through retraining programs and business support.
4. Prepare water, road, and other public infrastructure for increased demands from growth and tourism.
5. Ensure companies that are considering locating here are well-informed about how well local resources are matched to their demands.
6. Continue to support diversification of tourism activities, to balance impacts and adapt to changing climate conditions.
7. Continue efforts to accommodate year-round travel.

Building Electrification Workforce Needs

Climate action and evolving technology will lead to economic growth and new jobs. Already, the clean energy and electrification fields have created demand for new types of jobs and a trained work force. To learn more about building electrification, see the Building Fuel Switching Target Area on page 92.

Today, Flagstaff residents are seeking contractors to support home electrification – something that could require the work of plumbers (to install a new heat pump water heater), HVAC mechanics (to install a cold climate heat pump), electricians (to upgrade electric service), and energy efficiency contractors (to improve home weatherization). Residents have reported difficulty in finding contractors willing or able to work on building electrification.

There is a nation-wide need for training and workforce development to achieve widespread building and vehicle electrification. Rewiring America estimates in that "an aggressive national commitment to electrify all aspects of our economy would create up to 25 million good-paying American jobs over the next 15 years and 5 million sustained jobs by mid-century." www.rewiringamerica.org/policy/jobs-report

In Flagstaff, the problem is especially acute, as high housing prices and regional isolation can lead to difficulty in hiring and worker retention. The City is working with regional partners to identify local needs, available resources, and financial opportunities to provide the necessary education and training that will support building electrification.

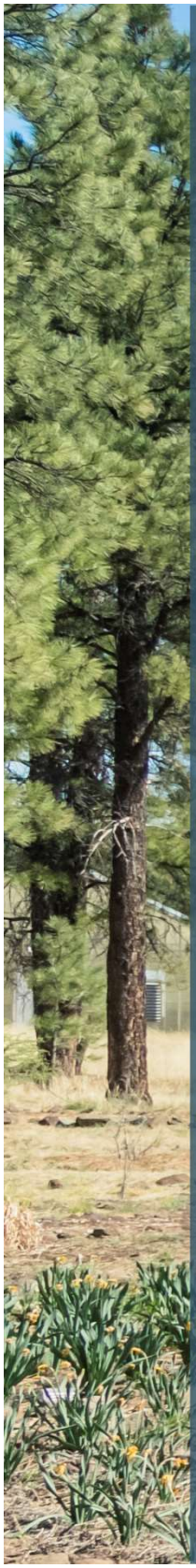
Job opportunities associated with adaptation to climate change.

Economic development conversations often focus on the potential jobs benefits from reducing greenhouse gas emissions, such as solar energy, electric vehicles, or building electrification. Yet adaptation and resilience-building can have significant economic development benefits as well. The list below, from a Santa Fe watershed plan, provides a few examples of how reducing climate risks can support a variety of jobs.

Climate Risk	Action / Job	Job Type
Forest Fire	Thinning / burning	Forestry
Flooding	Drainage stabilization	Hydrologists, earth-movers, etc.
	Strengthen riparian corridors	Ecologists, foresters, etc.
Drought	Retrofit with efficient/smart plumbing and water catchment / reuse systems	Plumbers, construction workers
Increased temperatures	Retrofit buildings for passive solar	Construction workers
	Tree planting to increase shade	Landscapers, arborists, parks management
GHG Concentrations	Install renewable energy systems	Electricians
	Energy audits and retrofits	Energy auditors, contractors
	Land restoration	Ecologists, biologists, geologists
Community destabilization	Neighborhood association, business, non-profit and community coordination	Community organizing

Source: "Forest and Water Climate Adaptation: A Plan for the Santa Fe Watershed." http://www.santafewatershed.org/sfwa/wp-content/uploads/2014/02/Santa-Fe-Watershed-Forest-Water-Climate-Adaptation-Plan-Final2.pdf





ECONOMIC PROSPERITY AND RECREATION TENSIONS

In 2017, Flagstaff was the 14th most-visited city in the United States with nearly 5 million visitors. These visitors contributed $500 million to the local economy and supported an estimated 8,000 jobs.[1] By 2050, visitation to Flagstaff and northern Arizona is projected to reach 9.5 million people annually.[2] Nearby outdoor recreation facilities such as national monuments, forests and parks, Arizona Snowbowl, and Lowell Observatory drive Flagstaff's tourism economy.

The impacts of climate change threaten the Flagstaff area's surrounding natural resources. Projections of decreased snowpack will impact winter recreation and tourism, while increases in summer temperatures, drier conditions, and wildfire risk to ponderosa pine forests could alter visitation during spring, summer, and fall. As cities in central Arizona experience increasingly extreme summer temperatures, more individuals may visit Flagstaff to seek refuge from the summer heat.

Flagstaff's economic dependency on at-risk natural resources and tourism creates a point of contention as our community seeks to become more sustainable. As visitation increases, so will the need to maintain and enhance infrastructure. For example, higher visitor demand and vehicle travel in our national forests may require more frequent road maintenance and increase greenhouse gas emissions. Increased tourism during hotter months may increase stress on water resources.[3] Invaluable cultural resources are at risk of vandalism as visitation surges.[4] Finally, with more individuals visiting Flagstaff and purchasing seasonal homes, affordable housing demands will increase pressure on low-income communities.

Despite these vulnerabilities, visitation is an important driver of the Flagstaff economy and contributes significantly to quality of life in Flagstaff. As this Plan is implemented, careful consideration will need to be made when addressing goals of decreasing greenhouse gas emissions, maintaining a rich economy, balancing visitation with natural resource conservation, and taking equitable climate action.

1 "Fiscal Year 2017 Annual Report and Fiscal Year 2018 Marketing Plan" Flagstaff Convention & Visitors Bureau. 2018. https://en.calameo.com/read/0050207463ae8c6e9e959 .
2 "Flagstaff Regional Plan 2030: 2016 annual Report" City of Flagstaff. 2017. https://www.flagstaff.az.gov/2936/Flagstaff-Regional-Plan-2030. 3 R. H. Bark, "Assessment of climate change on local economies." Sonoran Institute and Lincoln Institute of Land Policy. 2009. https://www.lincolninst.edu/sites/default/files/pubfiles/bark-wp09rb2-full_0.pdf . 4 "Flagstaff Open Space 2018 Annual Year in Review." City of Flagstaff Sustainability Program. 2018.



Carbon Dioxide Removal

Flagstaff will achieve carbon neutrality by first measuring the remaining emissions produced by our community each year, and then balancing with an equivalent amount of carbon dioxide removal (CDR) through local and regional initiatives. If local and regional initiatives are unable to fully satisfy the community's CDR obligation, Flagstaff will explore options for obtaining carbon dioxide removal certificates (CORCs) or other high-quality offsets.

WHAT IT MEANS

Carbon dioxide removal (CDR) refers to the process of removing carbon dioxide from the atmosphere. Removed carbon dioxide can be stored in terrestrial, geological, and oceanic reservoirs and can be stored in products. Removed carbon dioxide may also be utilized, but if this utilization returns the carbon dioxide to the atmosphere, the removal would no longer qualify as a negative emissions initiative – though the net impact may well contribute to reducing community emissions, which is also a productive outcome when striving toward carbon neutrality. There are numerous established and emerging approaches for accomplishing CDR, each associated with a different deployment maturity, permanence of storage, and drawdown potential, as well as considerations of costs, location, co-benefits, risks, and uncertainties.

HOW WE'LL GET THERE

Since emissions will still be produced in Flagstaff by the year 2030, carbon dioxide removal (CDR) will be necessary to achieve carbon neutrality. The magnitude of CDR required will ultimately depend on, and be equivalent to, the amount of emissions still produced each year. If all other local reduction strategies outlined in this Plan meet projections, then it is expected that there will be over 471,000 MTCO2e still produced locally in 2030.

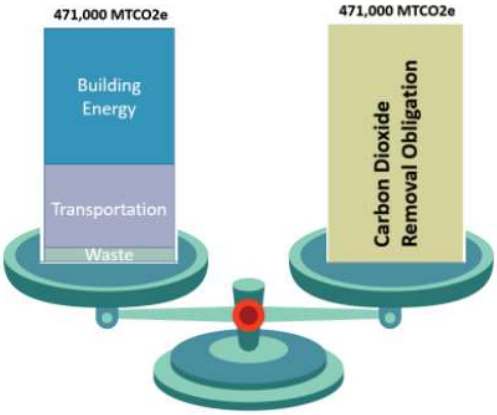


Figure 13: The two sides of the carbon neutrality scale: On the left side are the remaining emissions still produced (after reductions). On the right side is carbon dioxide removal. The two sides of the scale must balance out to achieve carbon neutrality.

Assuming that local reductions continue each year beyond 2030, then the annual CDR obligation required to achieve carbon neutrality will likewise decrease over time. It should always be kept in mind, reductions need to be prioritized and that (using the framework of the graphic above) the smaller that we can make the left side of the scale in 2030, or any other year, the smaller our CDR obligation.

As a City and community, we will first investigate the feasibilities of standing up and supporting local carbon dioxide removal (CDR) initiatives. Potential CDR projects may include nature-based initiatives on City lands and Open Spaces that remove carbon dioxide from the atmosphere and store it in biomass and soils. These could include urban forestry projects in areas of town that lack canopy and are vulnerable to the impacts of heat, or regenerative practices on riparian or degraded lands. We may also explore CDR initiatives that support the removal of waste and liability biomass from our surrounding forests – such as bioenergy or biochar. In addition to performing CDR, many of these initiatives would also reduce the risk of catastrophic forest fire as well as protecting, restoring, or otherwise supporting numerous ecosystems, allowing them to better provide all their many ecosystem services more effectively. We may even consider being an early adopter and making investments in the deployment of technology supported CDR initiatives including projects that provide long-term storage in materials or geologic formations. In developing the portfolio of initiatives that will be needed, the City may look to take the lead on some CDR projects, while other efforts may result from collaborations and perhaps even requests for proposals (RFPs). We also expect that the market will play a role and that some businesses will find opportunity in the CDR space.

If we are unable to meet our full CDR obligation with the portfolio of local initiatives that we develop, we will also have to consider obtaining carbon dioxide removal certificates (CORCs) or other high-quality offsets from third party vendors to satisfy the remaining obligation. The markets for CORCs are in early development and the price forecast is highly uncertain. Offsets have had a checkered history in terms of verification, additionality and permanence and are generally regarded as being insufficient to the problem. In order to address these limitations, Flagstaff will evaluate potential offsets using the Oxford Offsetting Principles[32] in order to ensure that they are high quality.

THE OXFORD OFFSETTING PRINCIPLES

- Cut emissions, use high quality offsets, and regularly revise offsetting strategy as bast practice evolves.
- Shirt to carbon removal offsetting.
- Shift to long-lived storage.
- Support the development of net zero aligned offsetting.

[32] https://www.smithschool.ox.ac.uk/publications/reports/Oxford-Offsetting-Principles-2020.pdf

EQUITY AND ADAPTATION CONSIDERATIONS

Equity: According to the EPA, "A growing body of research points to "intra-urban" heat islands, or areas within a city that are hotter than others due to the uneven distribution of heat-absorbing buildings and pavements, and cooler spaces with trees and greenery. These differences can result from disparities in the way communities are planned, developed, and maintained. There are often correlations between hotter neighborhoods and demographic characteristics of residents, with factors such as race and income often playing a role in who bears the brunt of extreme heat."

Initiatives that increase urban and residential canopy cover and decrease the "heat island effect" are just one example of projects that can have both equity and carbon dioxide removal benefits. Biochar and compost initiatives could also be designed to improve food security for disproportionately impacted residents while also capturing carbon in soils.

Adaptation: There are numerous nature-based CDR approaches that can contribute to improved forest and soil health. Healthy forests provide numerous ecosystem services that will help our community be more prepared and resilient to a changing climate, including protecting water resources. Contributing to local forest health also decreases the risk of catastrophic wildfire, which presents risks to both property and human health.

What about our trees?

The City of Flagstaff has numerous natural landscapes that act as carbon sinks, removing and storing carbon dioxide from the atmosphere. In addition to the ponderosa pine forests within City limits, Flagstaff has 3,300 acres of legally designated open spaces, as well as the Rio de Flag corridor and associated wetlands. At this time, we don't *yet* measure any CDR taking place within these natural landscapes. Over the next two years we will collaborate with partners and organizations (including NAU, the Forest Service, ICLEI) that are working on protocols for determining what (and how much) existing nature-based CDR is appropriate for inclusion in our inventory. It will probably be appropriate to consider and quantify CDR taking place on City owned Open Space, since we manage those areas and their continued protection will allow the CDR these spaces perform to be preserved - in addition to allowing them to perform their many other ecosystem services. It will not likely be appropriate to simply claim 'dibs' on the CDR happening in nearby forests that we aren't involved in managing or protecting. Once we have protocols in place, we expect to find that *some* of the projected 471,000 MTCO2e CDR obligation may already "be on the scale." However even if the entire area of Flagstaff were covered in forest, this would not satisfy our expected CDR obligation – our carbon footprint is greater than our geographical footprint.

TARGET AREA GOALS

Goal	Year
Remove an equivalent amount of carbon dioxide from the atmosphere as is produced by the community. If all reduction goals are met, this obligation projects to be approximately 471,000 MTCO2e in 2030. This number can be reduced annually as greater local reductions continue to be achieved.	2030

STRATEGY

CD-1: Develop a portfolio of local and regional carbon dioxide removal initiatives to meet Flagstaff's commitment to carbon neutrality.

Opportunities for action:

1. The City's 8000 acre Red Gap Ranch property east of Flagstaff on the I-40 corridor is a possible site for an innovative high desert carbon dioxide removal and sequestration project.
2. Explore the feasibility of smaller-scale regenerative agriculture, meadows, and forests as sequestration sinks in Flagstaff's high desert environment.
3. Collaborate with Northern Arizona University and other governmental organizations and non-profits in Northern Arizona and on the Colorado Plateau to explore opportunities for regional initiatives that achieve carbon dioxide removal and sequestration.

CD-2: If local carbon dioxide removal projects are insufficient, obtain high-quality carbon offsets and CO2 Removal Certificates (CORCs).

Opportunities for action:

1. Evaluate potential certificates and offsets using the Oxford Offsetting Principles.
2. Purchase certificates and offsets that align with Flagstaff’s priorities and the Oxford Offsetting Principles.

CDR First Steps

At this time, this Plan does not offer a prescriptive vision for the exact carbon dioxide removal portfolio that Flagstaff will develop and support over the next nine years. That work will require developing regional partnerships, identifying opportunities for collaboration as well as funding. Today, we can estimate how much CDR is likely to be necessary to achieve carbon neutrality, based on the emissions reductions anticipated. And so now begins the groundwork to stand-up and support local CDR projects to meet this obligation. We expect that part of this development will likely involve conducting feasibility studies on various project proposals. We also know that we will need to start deploying initiatives in the next few years to give them time to develop and scale.

One thing we do know – it pays to be proactive. Time and again we see that it is the communities that have done the groundwork that are able to take advantage of opportunities – for funding, collaboration, or otherwise. By adopting the Climate Emergency Declaration and thus kicking off the discussion about carbon dioxide removal in our community, we have made our interests clear to potential collaborators, and we are positioning ourselves to be uniquely prepared to take advantage of opportunities as they arise.



V. BACKGROUND

This background section provides information on climate change impacts in Flagstaff and how Flagstaff contributes to climate change via greenhouse gas emissions. This information provides a foundation for our actions. More details on both topics are available on the City of Flagstaff climate action website, at www.flagstaff.az.gov/climate.

In this chapter:

- The Climate Emergency Declaration
- Climate change in Flagstaff
- Flagstaff's greenhouse gas emissions



THE CLIMATE EMERGENCY DECLARATION

The Flagstaff City Council adopted the Climate Emergency Declaration on June 23, 2020. The declaration establishes eight resolutions:

Section 1. The City of Flagstaff declares that a climate emergency threatens our City, region, state, nation, civilization, humanity and the natural world, and recognizes the need for a dramatic increase in its ambition to combat climate change, so that it meets or exceeds the current recommendations of the foremost climate scientists working around the world.

Section 2. The City of Flagstaff commits to its own City-wide transition and climate emergency mobilization effort, utilizing Flagstaff's Climate Action and Adaptation Plan as the foundational framework in recognition of accelerating climate changes and prioritizing appropriate funding for its implementation.

Section 3. The City of Flagstaff commits to educating residents and especially Flagstaff's youth about the current climate emergency and inspiring action.

Section 4. The City of Flagstaff underscores the need for full community participation, and recognizes that the residents of Flagstaff, and community organizations and other such allies will be integral to and in the leadership of the mobilization effort.

Section 5. The City of Flagstaff commits to keeping the concerns of vulnerable communities, minorities, and those experiencing poverty central to all transition and climate emergency mobilization efforts and to facilitate the active participation of such communities.

Section 6. The City of Flagstaff joins a nationwide call for an emergency mobilization collaborative effort, in full partnership with surrounding Tribal nations and traditional agricultural communities, at all levels of government to prioritize adaptation and mitigation in relation to climate change while making all government decisions.

Section 7. The City of Flagstaff will take steps to revise the goals outlined in the Climate Action and Adaptation Plan to be in alignment with the United Nations' November 2019 Emissions Gap Report, while maintaining equal emphasis on adaptation, mitigation, and equity, by advancing the Climate Action and Adaptation Plan's goals to achieve carbon neutrality by 2030.

Section 8. The City of Flagstaff calls on the State of Arizona, the United States of America, and all governments and peoples worldwide to initiate a transition and climate emergency mobilization effort to mitigate global warming and create high-quality, good-paying jobs with comprehensive benefits for those who will be impacted by this transition.

Climate change in Flagstaff

The climate is changing, due largely to human-caused greenhouse gas emissions worldwide. These emissions come from a variety of sources: the cars we drive, the energy we use, the things we use, and even the food we eat. These emissions, once released, stay in the atmosphere, leading to abnormal weather patterns and severe weather events.

Flagstaff emits greenhouse gas emissions into the atmosphere, therefore contributing to global climate change. Emissions in Flagstaff come from three main sources: our energy and electricity sources, how we get around and build our town, and the things we buy and throw away. The chart below shows the portion of our emissions that come from each of these sources (pie chart below).

We get this information about Flagstaff's greenhouse gas emissions from our yearly greenhouse gas inventory. This is a common practice where municipalities itemize and track their annual greenhouse gas emissions. This information tells us where our mitigation efforts are successful, and which areas need more work.

ENVIRONMENTAL CHANGES

Coconino County is already experiencing increased temperatures, and can expect further increases in the future. Flagstaff can also expect to see:

- Increased wildfire risk
- Increased drought
- More flooding
- More insects in the forest and the city
- Damage to our water supply and quality
- Less snow and more rain

For more information on climate change in Flagstaff, view Flagstaff's Climate Profile available at www.Flagstaff.az.gov/climate.[33]

[33] https://www.flagstaff.az.gov/DocumentCenter/View/57498/Climate-Profile?bidId=#:~:text=Since%201950%2C%20Flagstaff%20has%20experienced,risen%20above%2090%C2%B0%20F.&text=In%201974%20and%201990%20temperatures,the%2090%C2%B0%20F%20threshold.

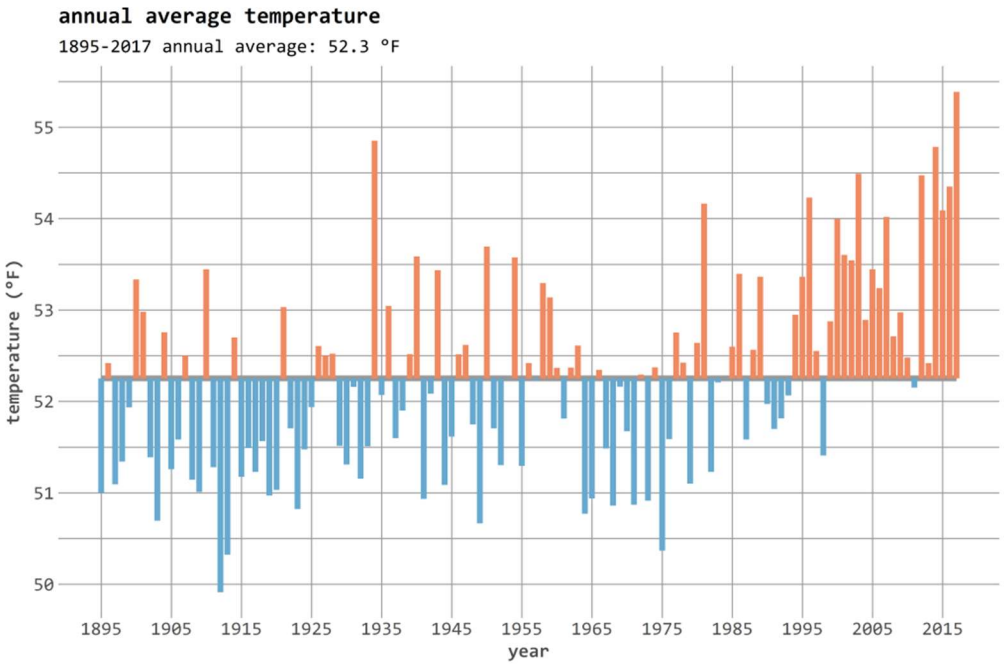


Figure 14. Average annual temperatures for Coconino County from 1895–2017. Orange lines indicate years where the average annual temperature was above average. Blue lines indicate years in which the average annual temperature was below average.

SOCIAL SYSTEMS CHANGES

We can also expect to see a variety of changes to our social systems, including:

- Increased allergens and longer allergy seasons
- Increased susceptibility to insect-borne illness
- Decrease visitation for snowplay
- Heat-related illnesses
- Regional growth that stresses Flagstaff's housing

To learn more about Flagstaff's vulnerabilities, review the Climate Profile at www.Flagstaff.AZ.gov/climate .

Flagstaff's Greenhouse Gas Emissions

HOW WE MEASURE OUR CONTRIBUTION TO CLIMATE CHANGE

To reach carbon neutrality, we must understand how Flagstaff contributes to climate change through greenhouse gas emissions. Each year the Flagstaff Sustainability Office completes a community-scale greenhouse gas emissions inventory. This inventory calculates the emissions produced by the activities taking place in our community. Activities we can measure include the release of greenhouse gas emissions when fossil fuels are burned for transportation and energy, when solid waste breaks down, and when water and wastewater are produced and treated.

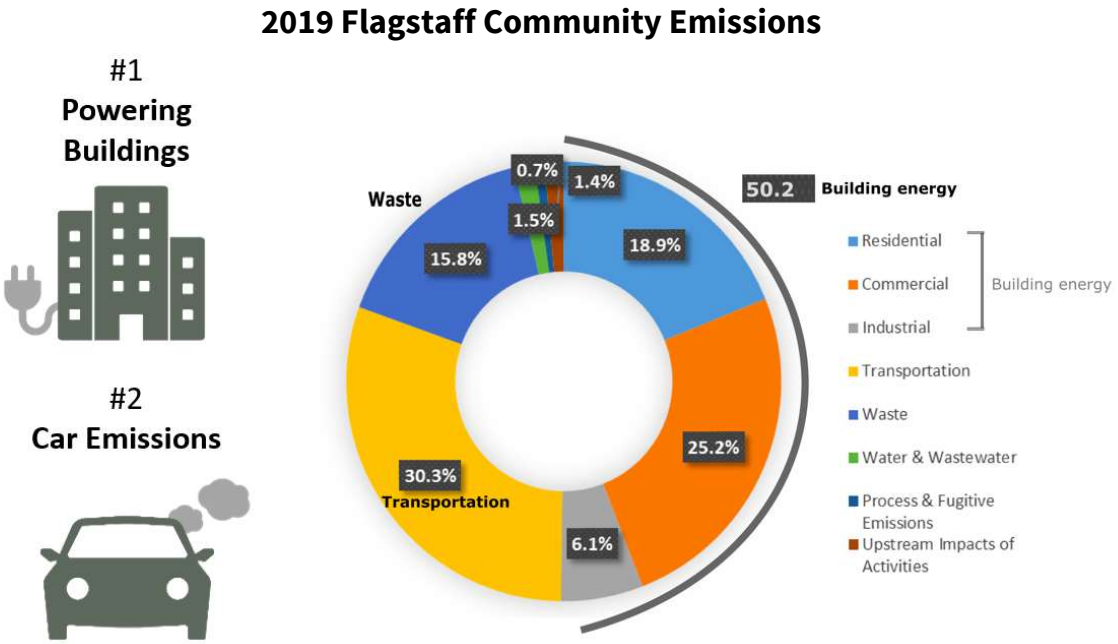


Figure 15. Greenhouse gas emissions from activities across the Flagstaff community in 2019.

Our greenhouse gas emissions fall into four main categories:

1. **Building Energy** contributes to approximately 50% of our emissions. This category represents emissions coming from the use of electricity and natural gas in our homes, and commercial and industrial buildings. Most of these emissions are split between commercial and residential buildings.
2. **Transportation** contributes to approximately 30% of our emissions. This primarily represents emissions from the fuels we use to get around town in vehicles.
3. **Solid waste** contributes to 16%of Flagstaff's emissions, primarily due to emissions from Flagstaff's Cinder Lake Landfill.

4. **Other emissions** are produced from water and wastewater treatment (2%), upstream impacts of activities (1%), and process and fugitive emissions (0.7%). 'Upstream impacts of activities' include emissions that occur prior to the consumption of fossil fuels, from the point of resource extraction, through processing and transportation. 'Process and fugitive emissions' result from the direct release to the atmosphere of GHG compounds from various types of equipment and processes, such as refrigeration and industrial processes. While smaller relative to other sectors, these categories are all important to measure and manage to achieve our emissions reduction goals.

A SECTOR-BASED GREENHOUSE GAS INVENTORY

Currently our inventory methods do not allow us to account for the imported or embedded emissions in the products that we consume. For example, an apple grown in Washington state and consumed in Flagstaff will have embedded emissions associated with the growing, picking, packaging, and transportation to Flagstaff that are not captured using our inventory method. For this reason, it is reasonable to assume that the results of our sector-based inventory represent the minimum emissions attributable to our community activities.

FLAGSTAFF'S GREENHOUSE GAS EMISSIONS

The City of Flagstaff has been tracking community greenhouse gas emissions since 2006. Since then, the way we track emissions has evolved. Currently, the City uses the U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions. This global standard for community-level greenhouse gas inventories creates a reliable methodology that enables Flagstaff to compare its emissions to other communities. Methods and protocols will continue to evolve and improve over time, as will data collection and availability.

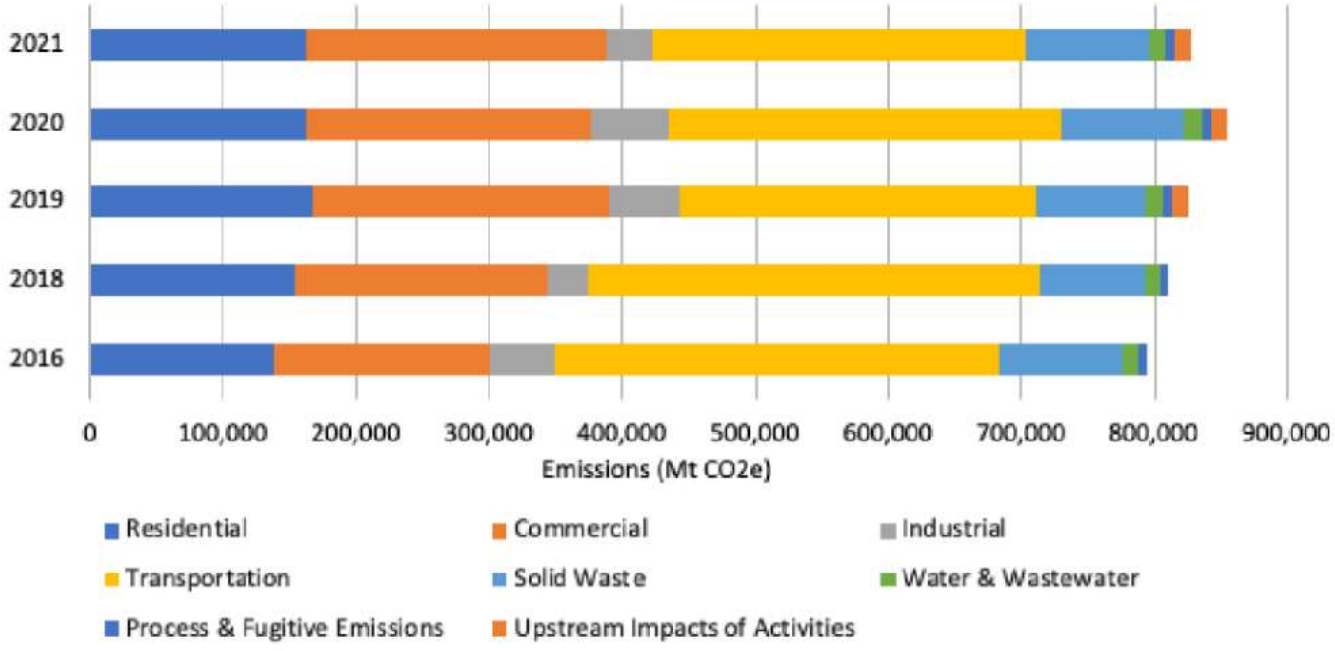


Figure 16. Greenhouse gas emissions by sector for 2016, 2018, 2019, 2020 and 2021.

Each year, the annual greenhouse gas inventory methodology will be updated to utilize the best available data and practices. When possible and prudent, Flagstaff will also work to retroactively and transparently apply updates and improvements to relevant projections-based models so that their baselines and forecasts might better reflect current methods and data. Indeed, the 2018 Climate Action and Adaptation Plan reported the 2016 baseline for community emissions to be 787,000 MTCO2e. To be more consistent with the improved data and methods that were available for the building and transportation sectors in 2020 while developing the Carbon Neutrality Plan, the 2016 baseline used for this Plan was updated to 759,000 MTCO2e. (See the conversation about the projected 44% reduction in emissions on page 11.)

There have been updates in methodology almost every year that the inventory has been done. One example illustrates methodology updates to improve accuracy in 2019 and 2021:

- In 2019, contractual natural gas was accounted in the inventory for the first time, resulting in a report showing a significant year-over-year increase (47%) in the total amount of natural gas delivered, and associated emissions. Despite having greater visibility on this source than in previous years, due to ongoing data limitations, contractual natural gas was simply split 50:50 between the commercial and industrial sectors.
- In 2021, the City was able to get yet more information on contractual natural gas. Rather than a 50:50 split, the actual allocation in 2021 was approximately 90% commercial and 10% industrial. Applying this improved information in 2021 contributed to both muted and significant year over year impacts on the larger commercial and smaller industrial sectors (+6% and -44% respectively).

While methodology updates have been made each year to provide the best available inventory, the City does not regularly re-evaluate either the 2016 emissions baseline or the 2030 business as usual (BAU) emissions projections. Doing so would be a significant endeavor for which only truly major changes and improvements would merit the investment of time and resources. Furthermore, in some cases, updates to baselines and projections may not be feasible (e.g.. if more granular data that is available for CY2021 isn't also available for previous years). That said, the City is in active discussions with multiple leading carbon accounting organizations and is regularly evaluating opportunities to continue to ensure that both the annual and historical emissions inventories reported are using the best data and methods available.

For more information on our greenhouse gas inventory and how our methodology and results have changed over time, see: www.flagstaff.az.gov/climate.

The Flagstaff Climate Action and Adaptation Plan was adopted in November 2018. While the 2019 inventory reflects emissions after adoption of the CAAP, it will take a few years for the impacts on our emissions to be observed. For instance, in 2019, City Council adopted a building code that will ensure new buildings use significantly less energy. However, this code was not mandatory until January 2020, and its emissions reductions will only be truly apparent after buildings built in 2020 and beyond become a greater portion of Flagstaff's building stock.

[34] EPA's greenhouse gas equivalencies calculator: https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

How do we measure greenhouse gas emissions?

On average, Flagstaff contributes to the production of 759,000 metric tons of carbon dioxide equivalents (MTCO2e).

In order to try to imagine what 759,000 MTCO2e might look like, one might first start by imagining a piece of coal burning, smoking, and releasing CO2 emissions into the atmosphere. Now, if for some reason we wanted to have a single-day bonfire that would emit the entirety of our annual emissions - 759,000 MTCO2e - we would need to gather a lot of coal. Because we are in Flagstaff, we might choose to use our local train tracks to help us bring in all the coal we need for this bonfire.

If we were to fill every railcar with coal, we would require an impossibly long train made up of 4,168 railcars' worth of coal. This would stretch over 41 miles. If you were to get caught behind the gates when this train came by, even if it could travel at the full legal in-town speed limit, you would be waiting at the gates for nearly an hour.[34]



THANK YOU

Thank you to the Flagstaff community.

2020 – 2021 Climate Emergency Steering Committee.

- Rick Barrett, Engineering, City of Flagstaff
- Greg Clifton, City Manager, City of Flagstaff
- Justin Emerick, Water Services, City of Flagstaff
- Dan Folke, Community Development, City of Flagstaff
- Joe Galli, Flagstaff Chamber of Commerce
- Geoffrey Gross, Coconino County
- Todd Hanson, Public Works, City of Flagstaff
- Gail Jackson, Economic Collaborative of Northern Arizona (ECONA)
- Natalie Jacobs, Citizens' Climate Lobby
- Megan Kelly, Grand Canyon Trust
- Dara Marks Marino, Climate Activist
- Dave McCain, City of Flagstaff Sustainability Commission
- Dave McIntire, Economic Vitality, City of Flagstaff
- Kate Morley, Mountain Line
- Matt Muchna, Northern Arizona University
- Amanda Ormond, Ormond Group, LLC
- Judson Tillinghast, APS
- Jed Westover, Loven Contracting

2020 – 2021 Flagstaff Sustainability Office - staff and interns.

- Ramón DC Alatorre, Climate & Energy Coordinator
- Nicole Antonopoulos, Sustainability Director
- Jillian Goulet, Climate Engagement Coordinator
- Dylan Lenzen, Sustainability Specialist
- Marissa Molloy, Administrative Assistant
- Jenny Niemann, Climate & Energy Specialist

- Stephanie Arcusa, GHG Emissions Intern
- Lee Bryant, Climate Engagement Coordinator
- Deirdre Conroy, Community Resilience VISTA
- Anona Miller, Transportation & Climate Intern
- Marie Nabors, Carbon Sequestration Intern
- Isabelle Wilhelm, Transportation & Climate Intern

Note: both current and former staff and interns are listed.

2020 – 2021 technical emissions consulting provided by the Cascadia Consulting Group.

APPENDIX A

The information in this Appendix is intended to give more detailed insights into *some* of the actions and ambition (e.g.. number of retrofits) that were used to arrive at our carbon neutrality calculations.

Path to Carbon Neutrality – outcomes modeled	**Example City Supporting Actions in the Model**
On-road transportation: Vehicle miles traveled (VMT) set to be held at 2019 **levels [1.59M/day (internal)]**	*20% increase in residential density *25% decrease in distance to transit *ATMP fully funded and implemented, including portions that have yet to identify dedicated funding sources; Assumes the Primary Bikeways Network is fully in place
30% Remaining miles electric (or zero tailpipe)	*All new sedans and SUV City of Flagstaff (COF) fleet vehicles till be electric vehicles (EV) or zero emissions vehicles starting in 2022 *50 EV charging stations provided by COF for community. *Additional EV charging stations as needed for fleet operations. **Impact Gap! Some of this will have to happen without COF support. **The 30% goal was modeled**, either the market needs to fill the gap or COF will need to add additional support. OR BOTH.
2000 home solar systems installed (5kW each) for 10MW distributed residential	*Facilitate a twice annual Northern Solar Co-op with SUN *New home building codes
Commercial sector brings on 10MW solar by 2030	
Industrial sector brings on 5MW solar by 2030	
Includes a 50MW solar installation at RGR + 10MW solar at the Cinder Lakes Landfill Assumes 25MW goes to make all COF electricity renewable Assumes COF works with APS to allow half of the remaining solar to be acquired/attributed to the commercial/residential sectors at 7.5MW/10MW split. Note: This does include some policy optimism - that APS and ACC will allow.	*COF works with APS to get utility scale solar at RGR

Path to Carbon Neutrality – outcomes modeled	Example City Supporting Actions in the Model
COF 100% renewable electricity by 2025 (likely to require 25-30MW); + energy efficiency and fuel switching upgrades across the municipality by 2030	*See utility scale solar above *Complete COF municipal energy audit and ESCO
12,500 total residential retrofits ~50% of existing homes. Note: This plan includes actions whereby the City directly supports between 4000 – 5500 of these retrofits.	*Relaunch and retool the ARRA era residential retrofit program: Design program for 4000 retrofits. *Revolving loans funds *Rebate programs **Impact Gap! Some of these have to happen without COF support. **The 12500 goal was modeled.** Either the utilities/State/Fed/market needs to fill the gap or COF will need to add additional support. OR BOTH.
25% of all commercial accounts (NOT COF or NAU) get a deep energy efficiency retrofit	*Revolving loan funds *Rebate programs **Impact Gap! Some of these have to happen without COF support. **The 25% goal was modeled.** Either the utilities/State/Fed/market needs to fill the gap or COF will need to add additional support. OR BOTH.
15% of commercial accounts/establishments fully electrify (not including COF or NAU)	*Revolving loan funds *Rebate programs **Impact Gap! Some of these have to happen without COF support. **The 15% goal was modeled.** Either the utilities/State/Fed/market needs to fill the gap or COF will need to add additional support. OR BOTH.
Landfill gas collection and flaring is operational	*COF installs system when current sequences are capped.

HOMES FOR ALL FLAGSTAFF RESIDENTS



10-YEAR HOUSING PLAN

CREATE. CONNECT. PRESERVE. PROTECT.

City of Flagstaff | Housing Section | flagstaff.az.gov

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Note from the Housing Commission

To the Flagstaff Community,

Those of us who choose to call Flagstaff home are part of a unique shared story. We are a city of innovation, a cultural hub for northern Arizona, a beautiful blend of distinctive neighborhoods, and a shared culture of "unity in community." As we grow, we strive to remain dedicated to our City's mission to "protect and enhance the quality of life for all." In that lofty ideal, we recognize that our growth presents several challenges to our community. Whether new to our community or a generational resident, we must face these challenges united.

Our affordable housing challenges are not unique to Flagstaff. Homelessness, the number of cost-burdened households, and a shortage of affordable housing units increases every year, creating more need. Arizona is fourth in the nation for shortage of affordable housing, according to a recent report from the National Low Income Housing Coalition. Our unique mountain town is not unique in facing these challenges. The uniqueness we enjoy in the character and culture of our mountain town does not extend to facing these same challenges.

As a community, Flagstaff expressed its commitment to ensuring all members of our community have access to safe, decent, and affordable housing by declaring a Housing Emergency. This declaration inspired a dedication to setting ambitious, equitable, and community-driven housing goals set forth in this 10-year plan.

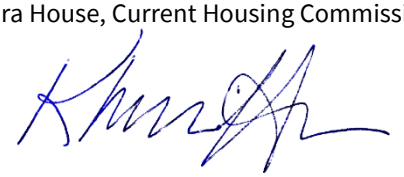
We welcome you, as our neighbors, allies, and community champions, to join us in facing the challenge of housing together, to help us address the needs of all members of our community, and to live out our shared community mission of protecting and enhancing the quality of life for all who choose to call Flagstaff home.

Sincerely,

Nicole Ellman, Former Housing Commission Chair



Khara House, Current Housing Commission Chair



In Support,

Paul Deasy, City of Flagstaff Mayor



Becky Daggett, City of Flagstaff Vice Mayor and Housing Commission Council Liaison

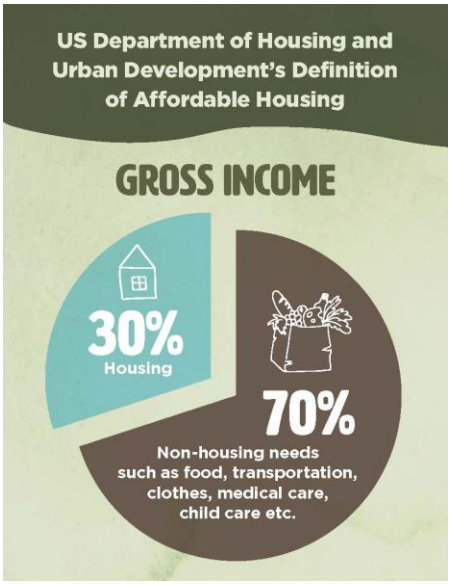


HOUSING IS A COLLECTIVE BENEFIT

There is a strong and growing movement among Flagstaff community members, housing advocates, and City Council to ensure all Flagstaff residents have access to affordable housing. On December 1, 2020, City Council declared a Housing Emergency in Flagstaff, committing to prioritizing affordable housing within City operations to create safe, decent, and affordable housing opportunities for all community members.

This Plan will begin with the basics, defining what affordable housing means and how affordable, accessible, and decent housing is of critical importance to our community's overall health and viability.

The United States Department of Housing and Urban Development (HUD) defines affordable housing as spending no more than 30% of monthly gross income on housing costs. Households that spend more than 30% on rent or mortgage costs are considered "housing cost burdened"; households spending more than 50% are "severely housing cost burdened." Throughout this Plan, "affordable housing" will be defined as households paying 30% or less of monthly gross income towards the home in which they reside, using HUD's definition.



In an expensive housing market like Flagstaff's, some form of subsidy is necessary for housing to be affordable for many lower income households. Housing subsidies come in many forms. Housing subsidy types include rental assistance, eviction prevention, and down payment assistance. Other forms include non-profit affordable housing, public housing, voucher programs, and some forms of co-operative and private sector housing. Throughout this Plan, the term "housing subsidy" is defined as any form of financial assistance aimed towards decreasing housing costs.

The stories we hear from residents and local reports verify that a lack of affordable housing is not just an individual problem, but rather a community problem that has collective consequences that negatively impact Flagstaff. This Plan demonstrates how the consequences of failing to create, preserve, and provide access to affordable housing in Flagstaff are linked to lasting negative effects on our neighborhoods,[1,2,3] health, children,[4,5] environment,[6] and jobs.[7] This Plan provides a path forward for the next ten years and solutions to reducing Flagstaff's Housing Emergency.

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[1] La Plaza Vieja Neighborhood Specific Plan, City of Flagstaff, November 2015
[2] Southside Community Specific Plan, City of Flagstaff, September 2020
[3] Flagstaff's Lived Black Experience Strategic Plan, "Flagstaff's Lived Black Experience: A Forgotten People Forging a Path Forward," The Lived Black Experience CommUnity Coalition, 2020
[4] Community Needs Assessment, Coconino County Arizona, January 2021
[5] City of Flagstaff Five-Year Consolidated Plan, May 2021
[6] The Flagstaff Carbon Neutrality Plan, City of Flagstaff, June 2021
[7] Housing Attainability for the Flagstaff Workforce, Economic Collaborative of Northern Arizona, November 2017

Addressing Flagstaff's Housing Emergency

Although the City has several Housing planning documents, when declaring the Housing Emergency, Flagstaff City Council directed staff to create a single, comprehensive community-facing document to summarize the city's immediate and long-term needs and strategies for improving housing affordability.

The current Housing Emergency in Flagstaff has deep roots, with no single root cause. There is no single solution to addressing the Housing Emergency, but rather multiple strategies that will work together in providing residents with additional housing stability. Flagstaff residents' responses to the Housing survey illustrated that the Housing Emergency is causing residents to leave our community. A little over 58% of Flagstaff residents stated that they were either "nearly certain" to "somewhat likely" going to relocate due to housing costs. The question we must ask ourselves is what would Flagstaff become if 58% of our population moved?

This Plan intends to help individuals and families achieve housing affordability for those who want to continue to call Flagstaff their home.

This Plan defines the Housing Emergency in Flagstaff and provides policy initiatives and strategies that the City will implement to address the Housing Emergency. As the City implements the 10-Year Housing Plan, the goal is to substantially increase housing subsidies for our neighbors that are unable to afford housing in Flagstaff and to increase the number of available and affordable housing options for Flagstaff residents at all income levels.

The City of Flagstaff's Carbon Neutrality Plan notes that Flagstaff faces a multitude of community challenges and competing priorities which must be met with open dialogue, innovative thinking, and good faith that we can find creative solutions that move us forward towards a healthier, more inclusive community. Partnerships across the City organization and the community at large are vital for addressing the Housing Emergency and creating a healthier, more resilient Flagstaff.

Flagstaff's Vision

Flagstaff's 10-Year Housing Plan's vision is to create a vibrant and more livable community through increased housing options for residents at all income levels and family sizes.

This document is a framework for action: it outlines a single overarching goal with thirteen (13) robust policy initiatives and fifty-eight (58) comprehensive strategies. The policy initiatives and strategies provide a foundational framework for establishing housing programs, prioritizing staff work, and allocating necessary funding for implementation.

- Create
- Connect
- Preserve
- Protect



OVERARCHING GOAL

Reduce the current affordable housing need in our community by half over the next ten years.

- Element one: Impact at least 6,000 low-to-moderate income Flagstaff residents through a combination of unit creation or subsidy provision.
- Element two: Create or preserve 7,976 housing units by 2031 with a minimum of 10% of them being affordable. This will increase the overall supply of market rate, workforce, and affordable housing occupied by local residents.

This Plan establishes one overarching goal, supported by two fundamental elements that together will significantly impact housing attainability. The goal will be achieved through the implementation of the policy initiatives and strategies in this document. Implementation of the policy initiatives and strategies will be accomplished by the City of Flagstaff through the budget process, collaboration with City staff, and private, public, and nonprofit partnerships.

POLICY INITIATIVES

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

Create 1: Incentivize the creation of affordable units through various programs and mechanisms.

Create 2: Ensure that the Flagstaff Regional Plan includes robust affordable housing goals and policies.

Create 3: Create a dedicated funding source for affordable housing in Flagstaff.

Create 4: Amend the Flagstaff Zoning Code to facilitate the development of all housing types.

Create 5: Explore regulatory efficiency and cost-saving practices.

Connect people to equitable housing solutions.

Connect 1: Reduce homelessness in the Flagstaff community and seek creative solutions to foster housing permanency for all.

Connect 2: Implement a framework for centering equity in proposed and existing housing practices, policies, and programs.

Connect 3: Integrate healthcare into housing programs, and housing into healthcare programs, as appropriate.

Preserve affordable housing.

Preserve 1: Encourage the adaptive reuse of buildings.

Preserve 2: Expand efforts to preserve existing housing stock.

Protect people from housing discrimination and remove housing barriers.

Protect 1: City Council will continue to lobby and support federal and state legislation to encourage changes to federal and state laws, and to increase the amount of funding available for the preservation and construction 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.

Protect 3: Continue Flagstaff's commitments to further federal and Arizona Fair Housing laws in all housing-related services and programs, value the efforts of those who seek to reduce barriers to equitable housing opportunities, and provide Fair Housing education and resources to the community.

Refer to the Detailed List of Policy Initiatives and Strategies on page 52.

FORGING AHEAD FOR HOUSING ADVANCEMENT

Action Needed

FLAGSTAFF CITY COUNCIL & HOUSING COMMISSION

The success of this Plan is contingent on the Flagstaff City Council continuing its leadership and support for advancing housing affordability. Implementation of the Plan relies on funding, the creation and preservation of affordable housing, increasing housing subsidies, and continued public support for affordable housing.

The Flagstaff City Council will have oversight responsibility for this Plan and will make policy decisions and budgetary appropriations. The Housing Commission will provide recommendations to City Council on the implementation of this Plan. Council and the community will receive an annual update on the progress of Plan implementation.

The Flagstaff City Council will:

- Prioritize policy initiatives and strategies for the upcoming City Council term that will support Plan implementation.
- Identify City Council budget priorities and funding to support Plan implementation.
- Identify state and federal legislative priorities that support the policy initiatives and strategies of the Plan and enable implementation of Plan actions.
- Provide leadership in community conversations around housing and the competing priorities.

Actions specific to the Flagstaff Housing Commission: *These actions are detailed in Resolution 2019-25, which created the Housing Commission.*

- Examine funding sources available for housing in Flagstaff, make recommendations to the City Council on potential funding sources, including bond measures, and provide oversight of any funds approved by the electorate for housing purposes.
- Make recommendations on the creation and implementation of housing and housing policies and programs for the benefit of Flagstaff and its citizens.
- Make recommendations regarding the prioritization of the community's housing needs.
- Make recommendations regarding how affordable market-rate housing can be responsibly stimulated through changes in the city code as well as other potential solutions.
- Examine and make recommendations regarding increasing the affordability of housing in Flagstaff.
- Explore alternative models of housing and make recommendations to Council.
- Advise and assist the City Council on ways to educate the community on housing, including the role housing plays as infrastructure in Flagstaff.
- Upon request, serve as a resource on the implementation of housing policy and programs.

FLAGSTAFF CITY LEADERSHIP

To address the Housing Emergency, it is critical that every part of the municipal organization is involved in the implementation of this Plan. From the City Manager's Office and the Leadership Team to individual Sections, Team Flagstaff must proactively consider housing affordability when conducting City operations. Refer to the Detailed List of Policy Initiatives and Strategies on page 52 for division involvement for each strategy.

The City Manager's Office will actively support the Council's commitment to advance housing affordability by requiring the involvement of all appropriate City divisions in the implementation of this Plan. Opportunities to incorporate affordable housing policy initiatives and strategies into internal decision-making processes include:

- The budget process
- Procurement decisions
- Division strategic planning
- City operations
- State and federal policy priorities
- Community engagement and education

COCONINO COUNTY LEADERSHIP

While this is a policy Plan for the City of Flagstaff, data and Plan reporting, along with strategy implementation and program advancement, will be shared with Coconino County. In addition, where appropriate, the City of Flagstaff will partner with Coconino County during Plan implementation.

Accountability

The City of Flagstaff will ensure accountability through consistent and transparent annual reporting to the community and the Housing Commission, which will monitor and report on the Plan's implementation progress.

LEGAL BARRIERS TO ADOPTING AFFORDABLE HOUSING POLICIES

Several widely used policies can increase access to and the affordability of housing. However, many of these tools are preempted or limited by Arizona law. These tools include inclusionary zoning, rent control/rent stabilization, short-term rental regulation, and financing structures that can increase the supply of affordable housing, provide stabilization for the market, and add additional units.[8] Refer to the Arizona State University, Morrison Institute for Public Policy, brief titled “State-Level Legal Barriers to

[8] State-Level Legal Barriers to Adopting Affordable Housing Policies in Arizona, Arizona State University, Morrison Institute for Public Policy, November 2021

Adopting Affordable Housing Policies in Arizona." The referenced document will give an overview of these policies, discuss their legality in Arizona, summarize the pros and cons, and offer potential solutions to existing legal barriers.

A LIVING DOCUMENT

This Plan is a living document that will evolve with market conditions, community housing needs, and budgetary status. This section presents a structure for ongoing monitoring, evaluation, and reporting on the Plan's goal and progress. Investing in data collection and consistent reporting increases transparency and is a key aspect of implementation.

PLAN FLEXIBILITY

The 10-Year Housing Plan must be a living document—grounded with a clear scope of work, but flexible in its approach. Many strategies are conceptual and will require future work that includes research and data, staff time, and external collaboration. Implementation of strategies may also require public outreach and Flagstaff City Council's consideration.

To reflect changing market conditions and an expanding knowledge base, the Plan is a framework for action, which provides conceptual strategies the City will undertake to address the community's Housing Emergency. While many strategies will be accomplished promptly, additional strategies may be incorporated during the life of this Plan.

EVALUATION & REPORTING

Regular reporting will ensure transparency and continued progress. Updates will be provided by City staff at Housing Commission meetings. City staff will measure progress on key performance indicators and will report to the Flagstaff City Council, Housing Commission, Planning and Zoning Commission, and community annually regarding policy initiatives and strategy development. Refer to the Detailed List of Policy Initiatives and Strategies on page 52 for the anticipated term lengths for each strategy. On an annual basis, City staff will provide a Plan update that includes:

- Progress towards achieving the Plan's goal and implementation status of policy initiatives and strategies.
- Relevant developments in market conditions, resources, and community efforts.

FUNDING

Funding is imperative for the implementation of the 10-Year Housing Plan's goal, policy initiatives, and strategies. Funding sources include the City's budget, agency grants, private, public, and nonprofit community partners, and new sources, such as general obligation bonds.

LOCAL HOUSING DATA & NEEDS ASSESSMENT

Flagstaff's Housing Emergency is a result of multiple factors and has been a documented need for 100 years.[9] To effectively address the Housing Emergency in Flagstaff, we must first understand local housing data. In partnership with Housing Solutions of Northern Arizona, the City of Flagstaff's Housing Section co-created an infographic titled "Affordable Housing Needs Assessment for the Flagstaff Community." Infographics from the needs assessment are shared throughout the Plan. Refer to the Survey and Methodology Document for the Affordable Housing Needs Assessment.

Flagstaff's Area Median Income Levels

The Department of Housing and Urban Development (HUD) publishes Area Median Income (AMI) data for the Flagstaff Metropolitan Statistical Area on an annual basis. The calculation takes into consideration a family's income level based on their household size. The AMI is the midpoint of an area's income distribution, meaning that half of the households in an area earn more than the median and half earn less than the median. A household's income is calculated by its gross income, which is the total income received before taxes and other payroll deductions. For a three-person household (the average household size in Flagstaff), their 100% AMI is $69,200 annual gross income.

HUD Flagstaff Area Median Income (AMI) Limits | 2021

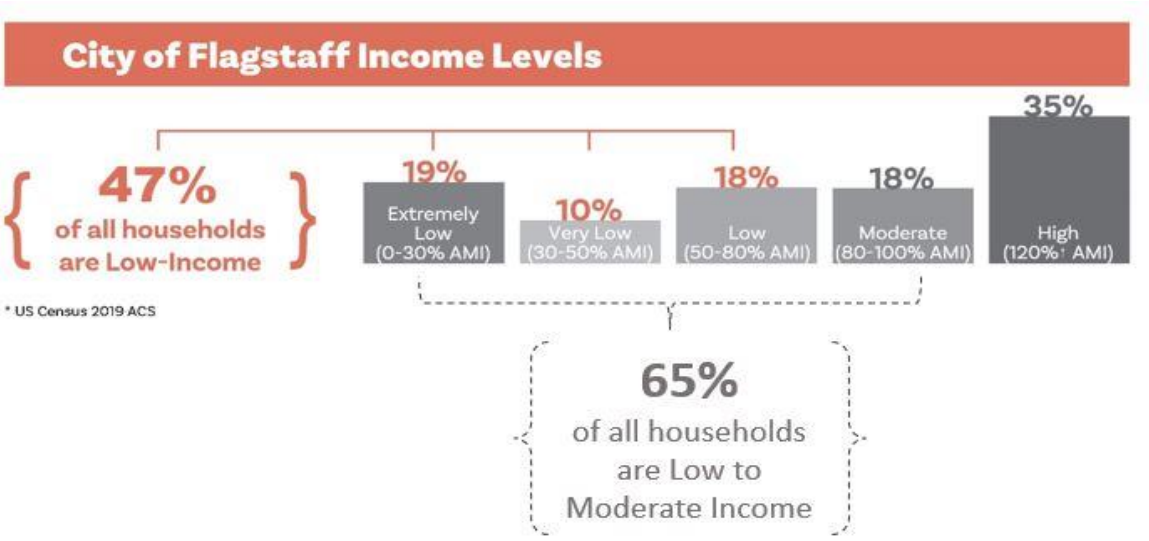
Income Category	AMI %	AMI Income Ranges*
Extremely Low	0 - 30%	$0 - $21,960
Very Low	30 - 50%	$21,961 - $34,600
Low	50 - 80%	$34,601 - $55,350
Low to Moderate	80 - 120%	$55,351 - $83,040
Moderate to High	120% >	$83,041 >

** Income ranges based on three person household*

AMI limits are another key factor in understanding the funding availability for affordable housing programs because it determines eligibility for many housing subsidies. Federal, state, and local housing subsidy programs, such as the Community Development Block Grant (CDBG), Low-Income Housing Tax Credit (LIHTC), Public Housing, and Section 8 Housing Choice Vouchers, have different income eligibility requirements that restrict eligibility to 60% - 80% AMI for a household depending on the program. These programs are available citywide and have limited funding.

[9] History of Housing Racial Equity and Housing Insecurity in Six Arizona Counties, Arizona State University, Morrison Institute for Public Policy, November 2021

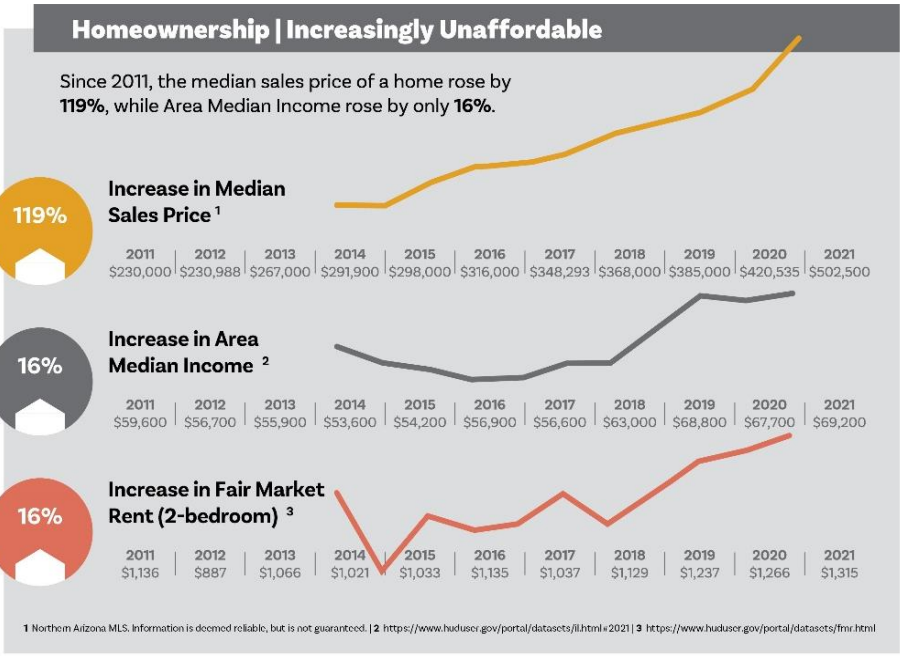
Nearly half (47%) of Flagstaff residents are low-income, earning no more than $55,350 annually. In Flagstaff's current housing market, 65% of households that fall within or below the moderate-income level could benefit from some form of subsidy to achieve housing that is considered affordable.



Flagstaff Is Increasingly Unaffordable

Over the past half-century, Flagstaff's households have seen a dramatic shift in their budgets. Rents have risen, home prices have increased, and incomes have not kept pace. As a result, households are spending a growing portion of their income on housing. The costs to rent or own a home continue to rise and are outpacing local incomes.

Since 2011, the median sales price of a home rose by 119%, while the Area Median Income rose by only 16%. In Flagstaff's current housing market, the median sales price of a home is $502,500, and the median annual gross income is $69,200. Consequently, many local residents need some form of a housing subsidy to achieve affordable homeownership.



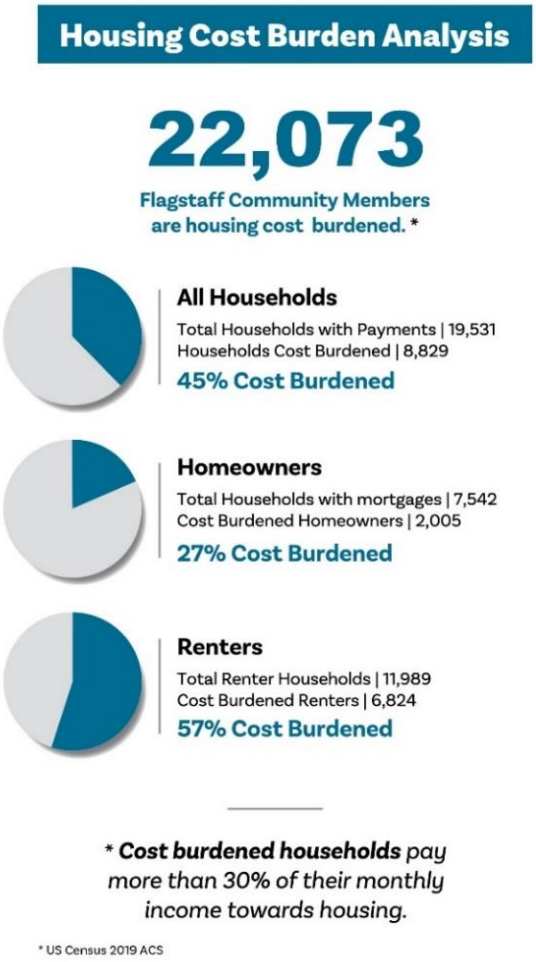
Flagstaff's Housing Cost Burden

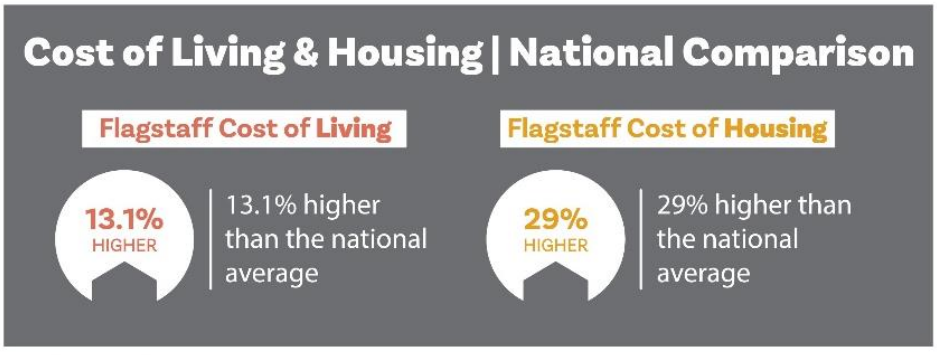
According to HUD, cost-burdened households pay more than 30% of their monthly income towards housing.

Currently, 27% of homeowners and 57% of renters are housing cost burdened, meaning that 22,073 Flagstaff community members are living with a housing cost burden.

Cost burden helps us understand how much strain housing costs can place on a household's overall financial position. The lower your income, the more likely you are to be cost burdened. Households that are housing cost burdened have little money to cover other basic necessities, such as food, childcare, transportation, clothing, and health care, leaving the households in a precarious financial situation and making it harder to achieve economic mobility and housing advancement.[10] Renters that are housing cost burdened are less likely to be able to save up for a down payment required for accomplishing homeownership.

Flagstaff is a community where 45% of all households are living in a housing cost burdened situation; the cost of living is 13% higher and housing is 29% higher than the national average. It is therefore imperative to create and preserve more housing options and to establish more funding for programs that help residents attain housing that is affordable.





[10] Homeownership Is Affordable Housing, Housing Finance Policy Center, Urban Institute, Mike Loftin, May 2021

RACIAL DISPARITIES AND HOUSING JUSTICE

The Fair Housing Act has historically protected people from adverse treatment in any housing transaction based upon seven protected classes: race, color, national origin, religion, sex, disability, and familial status. In June of 2020, the United States Supreme Court ruled in *Bostock v. Clayton County* that the statutory protection against sex discrimination in the employment context includes protection from discrimination on the basis of gender identity and sexual orientation. In January of 2021, President Biden issued an Executive Order applying the Court's reasoning to other federal statutes, including the Fair Housing Act.[11] The City of Flagstaff has consistently supported the provision of fair housing for all residents without limitation to those classes protected by the Fair Housing Act.[12]

While this Plan focuses on income levels and housing situations for Flagstaff residents, we also must consider racial and ethnic compositions when discussing housing stability. Decades of structural racism have created tremendous racial and ethnic disparities in housing, and that legacy continues to shape the present landscape. Racial disparities in housing manifest in several ways from affordability, quality, segregation, homelessness, and wealth building.[13]

Owning a home is a primary way to build wealth in America, and because of the legacy of racist housing policies, people of color have been denied wealth-building opportunities that were given to Whites. The racial homeownership gap is worse today than it was in 1960 when housing discrimination based on race was legal.[14] Black Americans have the lowest rate of homeownership in the US at a rate of 47%, compared to 76% for White Americans. The rate for Hispanic homeownership is 51.4%, and for Asian, Native Hawaiian, and Pacific Islanders, 61.4% (2020 US Census Data). In Flagstaff, White households have significantly higher access to homeownership than households of other races and ethnicities. In fact, 62% of White households are homeowners compared to 24% of Black and African American households and 32% of American Indian or Alaska Native.

The U.S. Department of Housing and Urban Development (HUD) receives custom tabulations of American Community Survey (ACS) data from the U.S. Census Bureau. This data, known as the CHAS data (Comprehensive Housing Affordability Strategy), demonstrates the extent of housing problems and housing needs, particularly for low-income households. The CHAS data for the recently released 2014-2018 period shows there are disparities between race and ethnic groups when it comes to housing cost burden. The housing cost burden figures quoted in the above section of this document come from the 2020 American Community Survey (ACS), which shows that housing cost burden has increased since 2018. However, it is not possible to estimate racial and ethnic disparities from the publicly available ACS data, so this section relies on and quotes from the older CHAS data. The terms used in this section are consistent with HUD's racial and ethnicity terminology.

The nation's White alone (non-Hispanic) and Asian alone (non-Hispanic) households spent notably less of their incomes on rent and are therefore least likely to experience rent burden in comparison to other racial

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[11] Executive Order on Preventing and Combating Discrimination on the Basis of Gender Identity or Sexual Orientation, January 20, 2021, The White House
[12] City of Flagstaff, Fair Housing webpage
[13] Racial Inequities in Housing, Opportunity Starts at Home
[14] Urban Institute, Housing Finance Policy Center, Reducing the Racial Homeownership Gap

and ethnic groups.[15] In Flagstaff, Asian alone (non-Hispanic) households are most likely to experience housing cost burden in comparison to other racial and ethnic groups, with the highest racial/ethnic disparity of households living in housing cost burden in Flagstaff. This contrasts with national trends where Asian alone (non-Hispanic) households are the least likely to be housing cost burdened. White alone (non-Hispanic) households are least likely to experience housing cost burden, and this is consistent with national trends.

Underlying this disparity are differences in homeownership rates between racial and ethnic groups. Homeownership rates are important because renter-occupied households are far more likely than owner-occupied households to be housing cost burdened. White alone (non-Hispanic) households are the most likely to own their home, and thus are the least likely to be housing cost burdened.

Flagstaff's Percentage of Households Living Housing Cost Burdened by Racial and Ethnic Composition

Race/Ethnicity	Percent of All Households Cost Burdened	Percent of Renter Households	Percent of Homeowner Households
White alone, non-Hispanic	30.7%	38.1%	61.9%
American Indian or Alaska Native alone, non-Hispanic	38.4%	67.9%	32.1%
Hispanic, any race	34.2%	50.9%	49.1%
other (including multiple races, non-Hispanic)	40.8%	51.1%	48.9%
Black or African-American alone, non-Hispanic	39.5%	75.8%	24.2%
Asian alone, non-Hispanic	55.8%	60.5%	39.5%

[15] Joint Center for Housing Studies of Harvard University, Renter Cost Burdens by Race and Ethnicity

When considering the totality of past injustices, it is unfortunately not surprising that people of color are more likely to experience housing instability and homelessness. Applying Homeless Management Information System (HMIS) data,[16] the Flagstaff area shows there are disparities between race and ethnic groups when it comes to risk of homelessness. Residents of Flagstaff who are American Indian or Alaska Native alone (non-Hispanic) disproportionately experience homelessness, making up 10% of Flagstaff's population, but 38% of its homeless population. Residents who are Black or African American (non-Hispanic) or multiracial also disproportionately experience homelessness; however, Flagstaff's population for the above noted racial and ethnic groups is lower than White alone or American Indian or Alaska Native.

Flagstaff's Percentage of Individuals Experiencing Homelessness by Racial and Ethnic Composition

Race/Ethnicity	Percent of Population	Percent of HMIS Population
White alone, non-Hispanic	59.9%	38.6%
American Indian or Alaska Native alone, non-Hispanic	10.4%	38.4%
Hispanic, any race	19.7%	12.7%
other (including multiple races, non-Hispanic)	5.3%	6.6%
Black or African-American alone, non-Hispanic	1.9%	3.1%
Asian alone, non-Hispanic	2.5%	0.4%
Pacific Islander alone, non-Hispanic	0.3%	0.2%

The City of Flagstaff is dedicated to continuing to examine how different racial and ethnic groups will likely be affected by proposed funding decisions, processes, programs, and policies. The City of Flagstaff is committed to examining solutions that will eradicate the racial and ethnic disparities in housing outcomes and homelessness.

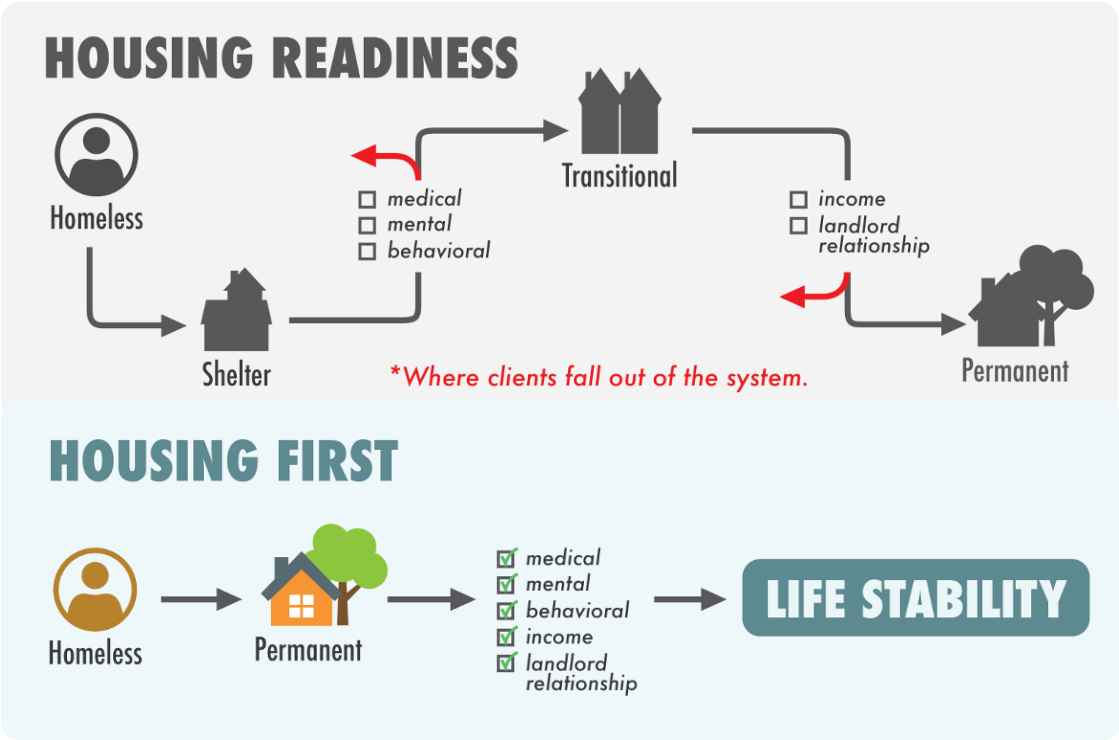
[16]HMIS is a local data information technology system used to collect client-level data and data on the provision of housing and services to homeless individuals and families and persons at risk of becoming homeless.

Important Topics in Housing

WHAT IS HOUSING FIRST?

Housing First is an approach that prioritizes providing permanent housing to people experiencing homelessness and individuals with any degree of service need, thus ending their housing instability, and serving as a platform from which they can pursue personal goals and improve their quality of life. This approach is guided by the belief that people need basic necessities like food and a place to live before attending to anything critical, such as getting a job, budgeting properly, or attending to substance use issues. Additionally, Housing First is based on the theory that client choice is valuable in housing selection and supportive service participation, and that exercising that choice is likely to make a client more successful in remaining housed and improving their life.

The flexible and responsive nature of a Housing First approach allows it to be tailored to help anyone. As such, a Housing First approach can be applied to help end homelessness for a household who became homeless due to a temporary personal or financial crisis and has limited-service needs, only needing help accessing and securing permanent housing.[17]



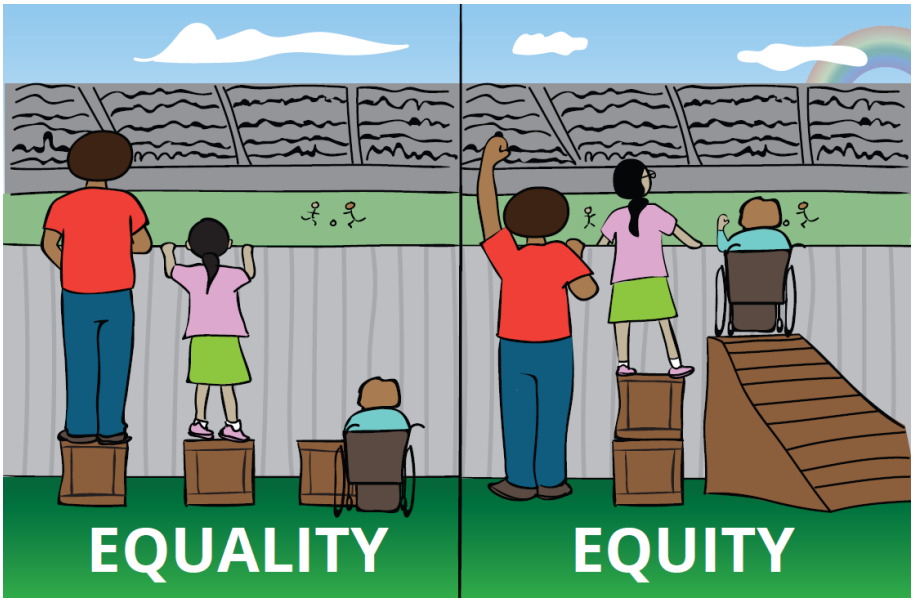
Housing First, Marin County

[17] National Alliance to End Homelessness, "Housing First," April 2016 publication, https://endhomelessness.org/resource/housing-first/.

HOUSING EQUITY

Housing equity is central to this Plan. Equity is different from the concept of equality. Equality is defined as treating everyone the same and giving everyone access to the same opportunities, under the assumption that everyone will benefit from the same support and services. Some groups are situated differently because of historical and current discrimination against them. Equity addresses those differences. Equality is about sameness, focusing on making sure everyone gets the same thing, while equity is about fairness, ensuring that each person gets what the person or population needs. Policies that aim to achieve equity may result in an unequal distribution of resources but will lead to more equitable outcomes for everyone.[18]

Source: Equity Tool



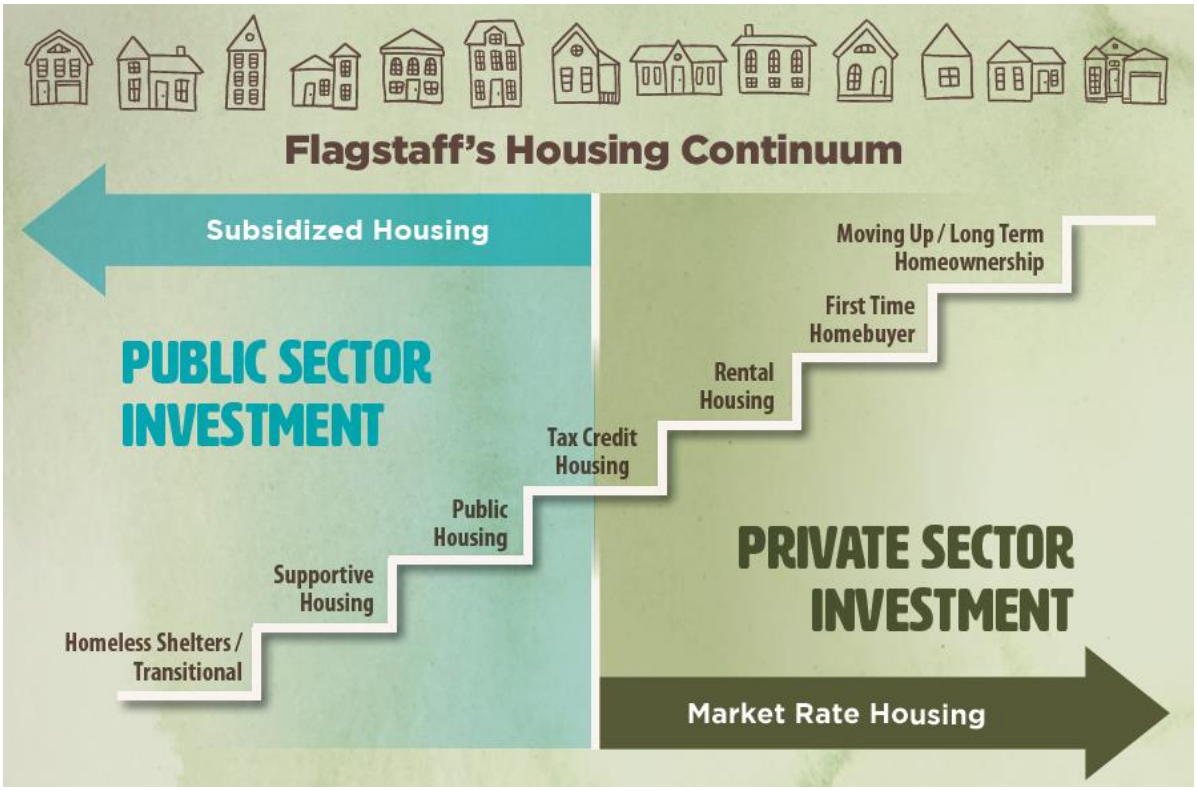
[18] Homeless System Response: Part1: Equity as the Foundation, Department of Housing and Urban Development

FLAGSTAFF'S HOUSING CONTINUUM

The housing continuum is a strategy that represents a variety of housing types available for households at all income levels. It indicates that households with different levels of income require different levels of subsidy to move up or advance through the housing continuum. For this Plan, we will use the housing continuum as a method to communicate possible housing solutions for households at all income levels.

For example, an extremely low-income, three-person household earning less than $21,960 (30% AMI) annually will require a greater level of housing subsidy (such as move-in assistance and public housing). This household would fall lower on the housing continuum compared to a low-income, three-person household earning less than $55,350 (80% AMI), who may need a smaller housing subsidy (such as assistance paying for their rental deposit).

Addressing the Housing Emergency will require adequate funding for programs such as eviction prevention, down payment assistance, and employer-assisted housing programs. It will also require the creation and preservation of affordable rental and ownership opportunities. These bold steps must be accomplished in partnership across the housing sector, including all levels of government, non-profit housing providers, private industry, and housing advocacy from our community at large. Housing types such as accessory dwelling units, tiny homes, or co-housing communities are not specifically shown on the basic housing continuum, however, they are a vital part of potential housing options and will be taken into consideration during the Plan's implementation.



FORMS OF HOUSING

Since the middle of the 20th century, housing production has focused mostly on the low- and higher-density extremes—detached single-family homes and mid- to high-rise apartment buildings. For Flagstaff to obtain affordability along the housing continuum it will likely need to broaden housing development to include "Missing Middle Housing," a term that describes a range of multi-unit or clustered housing types that are more compatible in scale with single-family homes and neighborhoods. Missing middle building types include duplexes, triplexes, fourplexes, townhomes, live/work, cohousing, accessory dwelling units, and courtyard buildings. These building types are called "missing" because although historically they have played an instrumental role in providing housing choices and affordable options in many cities across the country, they have typically been difficult to build under land-use laws in many cities since the mid-1940s. The term "middle" refers to building types that sit in the middle of the density and affordability spectrum. Missing middle building types have delivered attainable choices to families with a range of incomes and have the potential to play a significant role in achieving attainable rental and ownership housing options across the housing continuum in Flagstaff. Their perceived density—similar in form to single-family homes—is also more compatible with established neighborhoods where the scale of development is important to local residents. The images below visualize the various missing middle building types:



Missing middle housing not only affects affordability but can also lower our community's carbon footprint by increasing the walkability of our neighborhoods. Higher density housing development with a mix of other land uses within close proximity—such as retail and recreation—encourages walking, biking, and transit use instead of the predominantly car-dependent nature of single-family neighborhoods.

Transitioning from car-dependent development to more walkable, pedestrian-oriented development is also integral to achieving the City of Flagstaff's carbon neutrality goals. When a variety of missing middle building types are combined in a neighborhood (often with detached single-family homes), this helps to provide enough households within walking distance to support local businesses and access to groceries and public transit. Missing middle housing can also provide a walkable transition area from low-density single-family neighborhoods to high-density apartment, retail, and office districts. Over the last 50 years, walkable development has focused on mid-/high-rise buildings that offer many units within close proximity of amenities but often lack the independence and sense of community that many households and individuals are looking for. Missing middle housing can increase density and sustainable development patterns while maintaining a sense of community that is attractive to a variety of households.

How is Market Rate Housing Funded?

Funding for the construction and sale of market rate homes most often utilizes borrowed funds and therefore is based on risk—the lower the risk, the more funding that is available and vice versa. Lenders and other financing institutions look at numerous factors such as market trends and housing supply/demand in determining how much they will lend and at what interest rate for the construction of new housing, thus the availability of funds and what gets built with the funds is highly influenced by the lending and housing market. At the same time, homebuyers access market rate housing primarily through loans that take the households' income, credit, and debt-to-income ratios into account when determining the purchasing power of the household. Therefore, monitoring housing, construction, and market conditions/trends is essential when implementing the 10-Year Housing Plan because they will impact the viability of the 10-Year Housing Plan's policy initiatives and strategies. Refer to the following section regarding what Flagstaff families can afford when it comes to housing in today's market.

WHAT CAN FLAGSTAFF FAMILIES AFFORD?

What Can Flagstaff Families Afford?

Household Type	Retiree on Fixed Income	Service Industry Worker @ $15/hr.	Single Parent with 2 children	Family of 4 people	Young married couple
					
Number in Household	1	1	3	4	2
Estimated Household Income	$16,140	$31,200	$55,350	$76,800	$73,800
% of Area Median Income	30%	58%	80%	100%	120%
Max **Rent** They Can Afford	$404	$780	$1,384	$1,920	$1,845
Max **Home Purchase Price** They Can Afford *	$49,000	$125,000	$248,000	$359,000	$343,000
$ Needed for **Downpayment & Closing Costs** *	$3,185	$8,125	$16,120	$23,335	$22,295

** 4.0% interest rate; 30-year term with 3.5% down payment. Assumes 30% housing ratio and that household debt does not impact affordability. Insurance = $50/mo. Taxes = $120/mo. No HOA payment. Monthly MI @0.28%.*

Image and below text provided by Housing Solutions of Northern Arizona

The image above, created by Housing Solutions of Northern Arizona and the City's Housing Section, provides a visual of households that fall within extremely low income, very low income, low income, median income, and moderate income categories. This image presents these household situations and the maximum rent and maximum mortgage that each household can tolerate to obtain an affordable housing situation. For details on the methodology used, please refer to the Survey and Methodology Document.

Summary for What Families in Our Community Can Afford:

- Very low-income households, including those on fixed incomes, cannot afford to purchase a home in our community. They struggle to find a rental they can afford, as extremely few studios or 1-bedroom units are available for $404 per month.
- In general, minimum-wage workers cannot afford to purchase a home in our community. These families also struggle to find decent rentals even with a higher monthly budget for rent. While a few units with rent below $780 per month may be found, a household is hard-pressed to find a rental that is not a studio or a single room at that price.
- 80% AMI households can likely rent a market rate unit, although they possibly may pay more than an "affordable" portion of their monthly income. They struggle to find a house to purchase, with buying power of around $250,000. In September of 2021, Flagstaff's Multiple Listing Service (MLS) had three homes in that price range on the market. Of those homes, all three are two bedrooms or less. Homes in this price range are often condos with Homeowner Association (HOA) fees, increasing the monthly cost of housing.

- Households in the 100% to 120% AMI range can likely find a rental for their families and can potentially afford a mortgage that allows them to purchase a home in the Flagstaff market. Down payment and up-front loan costs are often barriers to homeownership for these families because it is very difficult to save the necessary amount when households are rental cost burdened and home prices in Flagstaff continue to rapidly increase. If we assume a family is using FHA financing (which has one of the lowest down payment requirements at a minimum of 3.5%), this family will need to have a minimum of $20,000 in cash available for their home purchase.

Homeownership in Flagstaff

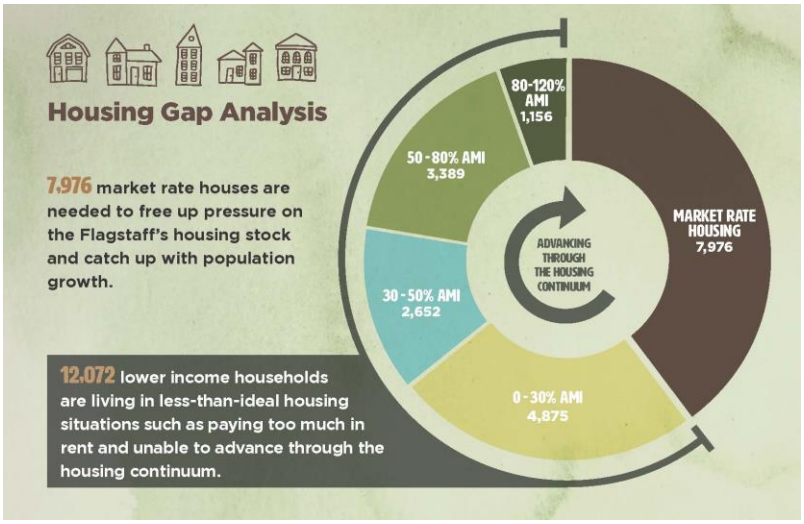
The American Dream of homeownership is slipping away for families in Flagstaff. Our community continues to see home price appreciation exceed wage increases, creating a larger and larger gap between home sales prices and what Flagstaff residents can afford. In the first half of 2021, Multiple Listing Services (MLS) data showed that the median home sales price in Flagstaff exceeded $500,000 for the first time. Homeownership is now attainable for wealthy families in Flagstaff, but a distant dream for our workforce. The consequences of home price increases are dire, as more and more members of our workforce look to leave Flagstaff's high-cost housing market and relocate to other communities where housing is within reach. Over one in four survey respondents (26.7%) indicated that they were either very likely or nearly certain to leave Flagstaff due to housing costs. Right now, homeownership barriers include the lack of lower-priced inventory and the need to have more money for a down payment and closing costs. In 2021, we are fortunate to have continued low interest rates, but if and when mortgage interest rates increase, buying power will be reduced and the challenge will be even greater.

FLAGSTAFF'S HOUSING GAP ANALYSIS - QUANTITATIVE RESULTS

This Plan seeks to understand the gap between available housing and Flagstaff's housing needs. City staff, Housing Commission members, and community experts created an Informal Working Group that performed a housing gap analysis to determine both Flagstaff's current housing needs and its available housing stock. To determine the affordable housing need, a methodology from the Joint Center for Housing Studies of Harvard University,[19] Montgomery County Interagency Commission on Homelessness,[20] and Freddie Mac Housing and Economic Research[21] was applied. The housing gap analysis reveals the estimated number of affordable housing units needed based on local income levels and bedroom sizes.

To define the City's need for market rate housing, the team used a proxy figure: the gap in housing supply from declines in housing construction and conversion from long-term housing to short-term rentals (STRs) since 2000. Other influential elements that also impact Flagstaff's overall housing supply include the decrease in average household size, an increase in second homes in Flagstaff, an increase in university student population, and limited developable land in Flagstaff.

The housing gap analysis found that Flagstaff currently has an undersupply of 7,976 housing units and 12,072 households with an affordable housing need.



[19] Joint Center for Housing Studies of Harvard University, Estimating the Gap in Affordable and Available Rental Units For Families, Witney Airgood-Obrycki, Jennifer Molinsky, April 2, 2019
[20] Montgomery County Interagency Commission on Homelessness, Appendix Four: Housing Demand and Supply
[21] Freddie Mac, Insight Report, The Housing Supply Shortage: State of the States, February 27, 2020

Importantly, Flagstaff's undersupply of housing does not alone mean that our community has 20,048 households living without a place to call home. It means that 12,072 lower-income households are living in less-than-ideal housing situations, such as paying too much in rent, and are unable to advance through the housing continuum, while the remaining 7,976 market rate houses are needed to free up pressure on Flagstaff's housing stock and to catch up with population growth.

This Plan establishes one overarching goal, supported by two fundamental elements that together will significantly impact housing attainability. The goal will be achieved through the implementation of the policy initiatives and strategies in this document. Implementation of the policy initiatives and strategies will be accomplished by the City of Flagstaff through the budget process, collaboration with City staff, and private, public, and nonprofit partnerships.

Goal: Reduce the current affordable housing need in Flagstaff by half.

- Element one: Impact at least 6,000 low-to-moderate income Flagstaff residents through a combination of unit creation or subsidy provision.
- Element two: Create or preserve 7,976 housing units by 2031 with a minimum of 10% of them being affordable. This will increase the overall supply of market rate, workforce, and affordable housing occupied by local residents.

In a market without enough homes and without adequate subsidies, the people who lose out are Flagstaff's low- to moderate-income residents: 47% of our population. This Plan's policy initiatives and strategies include increasing both the subsidies that provide targeted assistance to households in need and the number of housing units. Both elements above are mutually interchangeable and will require bold action to address the Housing Emergency.

Affordable and Subsidized Housing Gap Analysis

Flagstaff is faced with a demand for housing that far exceeds supply. To capture the demand and supply imbalance, the City analyzed the distribution of household size and income ranges from the 2019 American Community Survey, Census data, and the Coconino County Assessor's office. These figures identify and highlight the types of housing units that are under- or over-supplied in the Flagstaff city limits, including communities in the 86004 and 86005 zip codes like Doney Park, Kachina Village, and Mountainaire.

12,072 lower-income households are living in less-than-ideal housing situations, such as paying too much in rent, and are unable to advance through the housing continuum.

This housing gap analysis found that there is not enough affordably priced housing or subsidies available for households earning less than $66,400 (0-80% AMI) per year.

- For extremely low- to low-income households, Flagstaff currently has 10,916 households living in less-than-ideal housing situations. Of those households, 7,335 are living in one- and two-bedroom homes. These low income (0-80% AMI) households make up 47% of Flagstaff's population and require substantial subsidies to achieve housing that is defined as affordable at their income level.

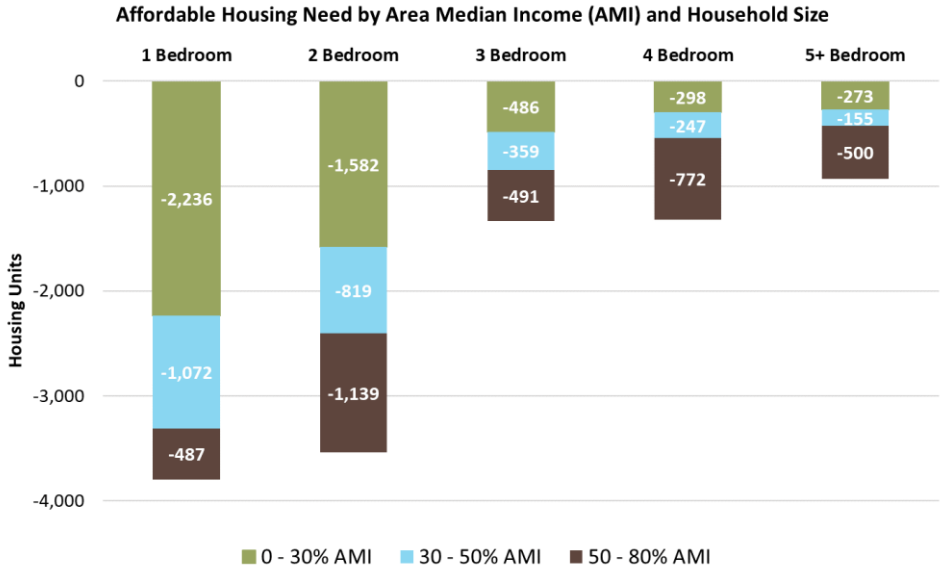
For low- to moderate-income households earning between $66,400 and $101,520 (80-120%), the affordable housing gap analysis found that while these households have a slightly higher advantage in finding affordable housing, 1,156 households are living in less-than-ideal housing situations.

- Of those 1,156 households, 1,037 are living in four- and five-bedroom units. These low- to moderate-income households make up 18% of Flagstaff's population and require some amount of subsidy to achieve housing that is defined as affordable at their income level, especially for larger households.

12,072 Households in Need of an Affordable Housing Subsidy or Unit

	Income & Household Size					
	AMI Range	1 Person	2 Person	3 Person	4 Person	5+ Person	
Extremely low to low Income	0 - 30%	-2,236	-1,582	-486	-298	-273	10,916 Households
	30 - 50%	-1,072	-819	-359	-247	-155	
	50 - 80%	-487	-1,139	-491	-772	-500	
Low to Moderate Income	80 - 100%	212	248	114	-366	-311	1,156 Households
	100 - 120%	-119	1,206	2,708	247	-360	
	> 120%	-1,261	-4,514	6,366	4,562	392	

The results above indicate that a large portion of Flagstaff's households are paying more than 30% of their household income on housing and are "doubling up" or living in smaller than ideal units (defined as greater than two persons per bedroom). The chart below shows subsidies and housing needs by bedroom size for those households living in 0-80% of the Area Median Income range. For 2021 Area Median Income Limits for Flagstaff, refer to the Survey and Methodology Document.



SERVING LOCAL RESIDENTS THROUGH CITY OF FLAGSTAFF HOUSING PROGRAMS

The mission of the Housing Section is to develop a viable urban community by providing decent and adequate housing, a suitable living environment, and expanded economic opportunities for the Flagstaff community, especially for low- and moderate-income persons.

The City of Flagstaff's housing programs serve local residents living and working in the Flagstaff community by requiring owner occupancy. Programs require income verification and serve residents primarily living in the 0-80% area median income range; other City programs serve up to 125% AMI, but resources are limited.

Housing is an important community issue in Flagstaff. The limited supply of housing for low- and moderate-income residents affects our quality of life and our ability to grow and develop economically. The City of Flagstaff Housing Section works to address the shortage with several programs and tools designed to:

- Coordinate with community partners for crisis housing
- Assist low-income households with affordable rental resources
- Increase housing inventory and availability
- Economically stabilize lower-income families through the benefits of homeownership
- Support efforts for safe and adequate homes
- Revitalize community neighborhoods

The City of Flagstaff Housing Section includes a variety of programs to serve families and individuals throughout the housing continuum of homelessness to homeownership. Many programs are delivered in collaboration with community partners and other agencies. For a detailed list of local housing programs, visit the Housing Section's webpage.

City of Flagstaff Land Designated for Affordable Housing

There are a total of 41.3 acres of vacant City-owned land dedicated to affordable housing. This acreage is spread across nine different properties of varying sizes and land use designations. Six of the properties are already zoned for multi-family use; the other three are not and would require rezoning. Over the years, several plans for affordable housing on City of Flagstaff's properties were created, but for several reasons—community opposition, financing issues, and changing market conditions—the units were not constructed. If the units from each of those prior plans and additional affordable units from the remaining properties were totaled, an estimated 254 affordable units could be built on City of Flagstaff property designated for housing. It's important to note that actual unit counts will vary depending on development partners, the site planning processes, and perhaps most significantly, neighborhood input.

In the next 10 years, the City of Flagstaff will endeavor to construct 254 affordable housing units on vacant City-owned property currently designated for affordable housing. While this number is nowhere near the Plan's goal of 7,976 units, the use of vacant City-owned land is only one of the multiple strategies in this Plan that seek to create additional units. The responsibility of delivering affordable units in the community must be shared among private and public landholders, developers, non-profits, and public agencies.

City of Flagstaff Housing Authority and Possibilities

The City of Flagstaff Housing Authority (CFHA) is a section within the City that manages the City's public housing. The City owns and manages 265 public housing units, of which 100 units are located in Siler Homes and 127 units are located in Brannen Homes. The remaining 38 units are scattered throughout the city. All properties are a part of the Department of Housing and Urban Development's (HUD) Public Housing program and are currently subject to restrictions set forth in Declarations of Trust.

HUD has developed a voluntary Rental Assistance Demonstration (RAD) program. RAD seeks to preserve public housing by providing Public Housing Agencies (PHAs) with access to more stable funding to make needed improvements to properties.

PHAs and owners of other HUD-assisted properties can convert units from their original sources of HUD financing to project-based Section 8 contracts. The primary benefit of RAD is that properties that convert under this process are no longer restricted from securing private sources of capital financing, and the owners are therefore able to address deferred maintenance and/or redevelop. Additional information about RAD can be found online at HUD's Rental Assistance Demonstration Website. In addition to RAD, the City is interested in other repositioning options, including, but not limited to, Section 18, Voluntary Conversion, in conjunction with Low Income Housing Tax Credits (LIHTC), and other financing advantageous for each project. Through this process, all current residents of public housing have the right to return to the redeveloped units, thus no one who currently lives in Public Housing will be permanently displaced.

The City intends to reposition and redevelop its public housing to increase the inventory of public and private affordable housing for renters and, potentially, homeowners throughout the city. The City's vision is to create vibrant, attractive, and diverse mixed-income communities that include a mix of rental units to house families, as well as units specifically designed for the elderly and other groups with special needs. The City's goals are to reposition its public housing portfolio through RAD and other options allowed by HUD to stabilize funding, modernize properties, and increase the number of affordable housing units. The City shall maintain ownership control and management of all properties in accordance with federal regulations and subject to HUD approval.

Additional information about the location and number of future affordable housing units will be available as the City of Flagstaff pursues its RAD partnership with an experienced affordable housing developer.

Building Unity in the Community

Building support around the development of affordable housing is a key component for the success of this Plan and its implementation. In fact, community opposition has proven to create challenges and barriers to the City's success in creating additional affordable housing. Community support is imperative when addressing the Housing Emergency.

This means providing affordable housing opportunities for our firefighters, police officers, teachers, sanitation workers, construction workers, young professionals, small business owners, and other working families—those who rescue us in times of need, keep our streets clean and safe, educate our children, and stock our grocery stores, among other critical functions. It means providing housing opportunities for our service industry and healthcare workers who fuel our economy and care for us and our loved ones. It means providing housing opportunities for our veterans who have served our country and fought for our freedom. It means providing housing opportunities for young adults and young families, who are our future, as well as existing residents who have fueled our economic growth. It also means enabling our seniors and legacy residents to remain in the city that they helped build.[22]

Affordable housing builds community and character. Ensuring that affordable housing incorporates the principles of good design and that it is well-integrated into the neighborhood, within walking distance to public transportation, schools, medical facilities, and grocery stores, is key to building a healthier more livable Flagstaff. Below are images of local housing developments that are well-designed and include an affordable housing component that Flagstaff local residents can call home.







The above developments from left to right show: 1.) Flagstaff Senior Meadows, serving seniors up to 60% AMI with 60 rental units. 2.) High Country Estates, serving up to 60% AMI with 44 rental units 3.) Rio Homes Land Trust units, serving up to 124% AMI with 21 ownership opportunities.

[22] Housing Phoenix, City of Phoenix, 2020

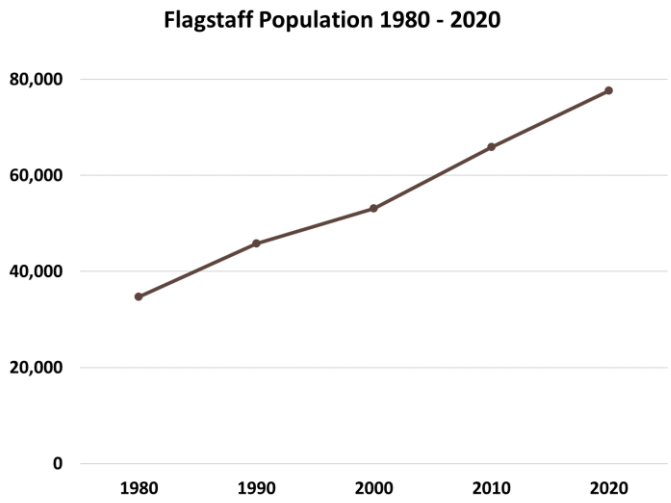
Market Rate Housing Gap Analysis

The Gap Analysis Informal Working Group worked to perform a gap analysis for market rate housing. This group estimated the market rate housing needs using US Census data for the Western Region and short-term rental (STR) data from LodgingRevs, an STR compliance database. Other measurements used for the market rate housing gap analysis were population growth, changes to the average household size, second home numbers, and Northern Arizona's university student population.

POPULATION GROWTH

Flagstaff is a growing city, drawing in new residents year after year with our strong economy, high quality of life, and cultural attractions.

Since 2000, Flagstaff's population has grown by 47% to 29,060 households and 77,590 people.



Growing population sectors include the elderly, university students, single-parent households, and non-family households. These community members need diverse housing options within close proximity to jobs, schools, and services.

As our population grows, more of our residents experience challenges finding housing within an affordable price range. Flagstaff's household demographics are changing in multiple ways: while more people are moving here, household sizes are decreasing. Both factors impact market demands.

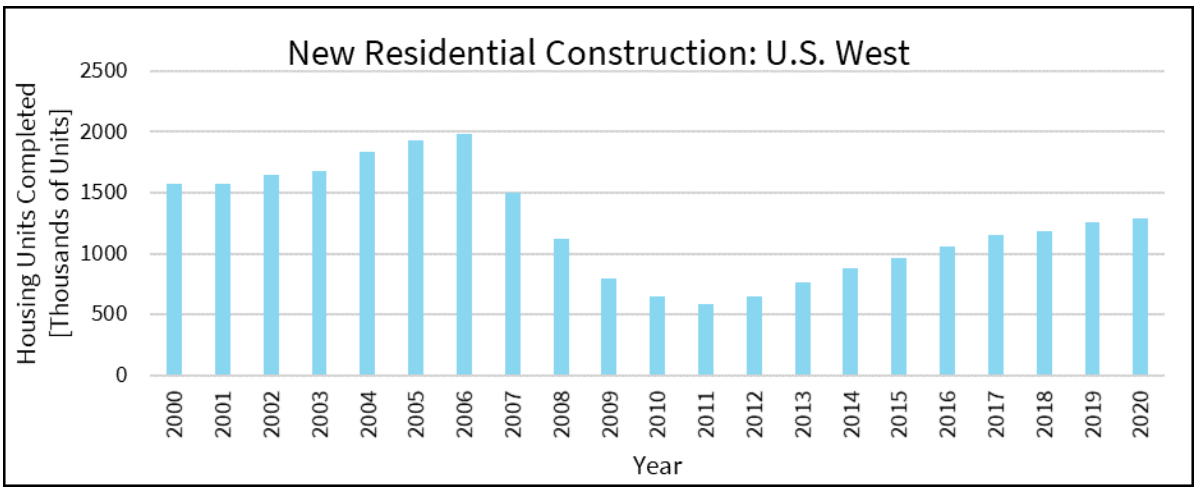
Decrease in Average Household Size

Housing demand is closely related to population and household size. Flagstaff's demographics have seen significant shifts: our population is aging, and household sizes are shrinking.

- Growth in the 65-year-old age group and overpopulation has created new demands for affordable, accessible housing. As this older population is aging in place and needs smaller homes, we want to help our older residents stay in Flagstaff.
- Flagstaff's families are having fewer children and single-parent households are rising. These changes increase the need for housing types that fit smaller families.

In conclusion, Flagstaff's average household size has declined from 2.80 in 1990 to 2.67 in 2019. This shift means that more homes are needed for the same population of people, exacerbating Flagstaff's housing gaps.

HOUSING PRODUCTION

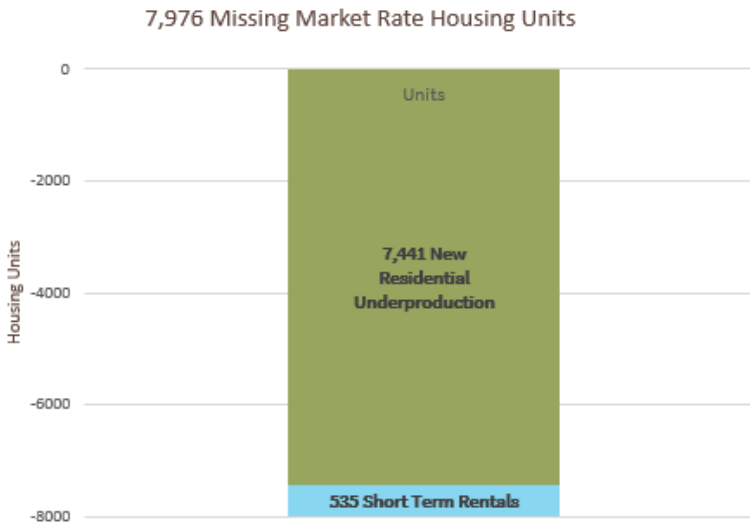


US Census New Residential Construction, Western Geographic

While Flagstaff has experienced consistent population growth over the last 20 years, the regional housing supply has not grown at the same rate. For example, new residential housing construction in the Western United States was strong in 2006, and then declined from 2007 to 2011. Housing construction slowly increased after the Great Recession, but still has not returned to 2006 production levels. This regional trend has been replicated in Flagstaff with the decline in home building, all while Flagstaff's population grew by 25,046 people since 2000.

Based on Flagstaff's share of population in the region, the market underproduced housing by approximately 7,976 units.

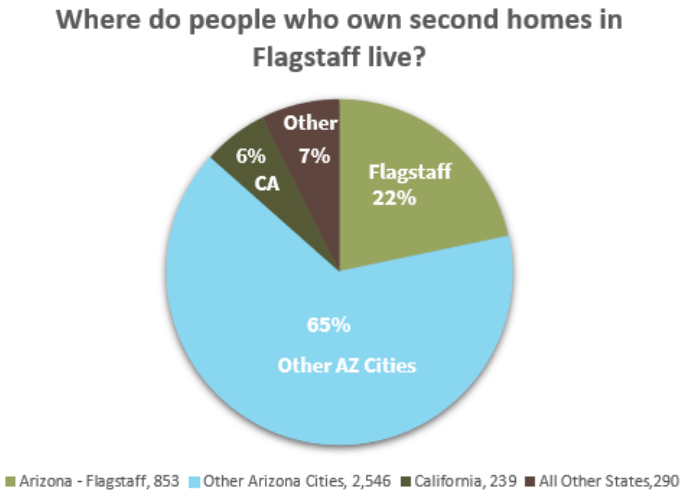
This housing underproduction is complemented by other local household demographics and limited developable land. Housing trends such as second homes and the university student population also exacerbate market rate housing supply.



SECOND HOMES IN FLAGSTAFF

Another community characteristic impacting market rate housing supply is the large number of second homes in Flagstaff. Second homes are defined as properties that are not used as a primary residence. Flagstaff is a popular choice for second homeowners. Highly impacted by seasonal migration, second homeowners look to Flagstaff to escape the desert heat of lower-lying regions in the summer in Arizona and beyond, visit Arizona's prime mountain town in the winter, and have a home for year-round recreational amenities.

One of climate change's most significant impacts in Flagstaff will be an increase in visitation, migration, and population, resulting in an increase in demand for housing. The Phoenix area—one of the country's fastest-growing and largest metro areas, now exceeding five million people—will begin to see hotter and hotter summers, with 24 more days of dangerous heat and temperatures regularly exceeding 120 degrees Fahrenheit.[23] Due to these changes, we can expect visitation and migration to Flagstaff to increase, as many Phoenix-area residents look to escape hotter and hotter temperatures during the summer through weekend visitation, season-long visits, or second homes.



In addition, with its temperate climate, Flagstaff is likely to become a climate refuge destination that attracts people from beyond Arizona, as dramatic migration shifts occur across the country.[24] These downstream effects of climate change result in more people in Flagstaff competing for a limited supply of housing, with domino effects on Flagstaff's housing market and land use. We can expect that climate change will dramatically exacerbate Flagstaff's housing problems, making the current crisis worse by increasing the demand for more full-time housing units as well as second homes.

Flagstaff has 3,928 second homes within city limits. This number amounts to 22% of all Flagstaff parcels, significantly affecting the overall housing supply and primary residents' ability to attain housing.[25] Many of the second homes in Flagstaff are larger luxury homes, with an average assessed value that is $30,000 higher than owner-occupied homes. Approximately 853 of those second homes are owned by full-time Flagstaff residents; 2,546 are owned by residents of other cities in Arizona, and 529 are owned by residents of other states.

The prevalence of second homes, which are often vacant, eliminates housing options for local residents—especially the four- to five-bedroom homes as noted in the above Affordable and Subsidized Needs

[23] Understanding climate change from a global analysis of city analogues, PLOS One, July 2019
[24] The Flagstaff Carbon Neutrality Plan, City of Flagstaff, June 2021
[25] Coconino County Assessor's Office, 2021 data

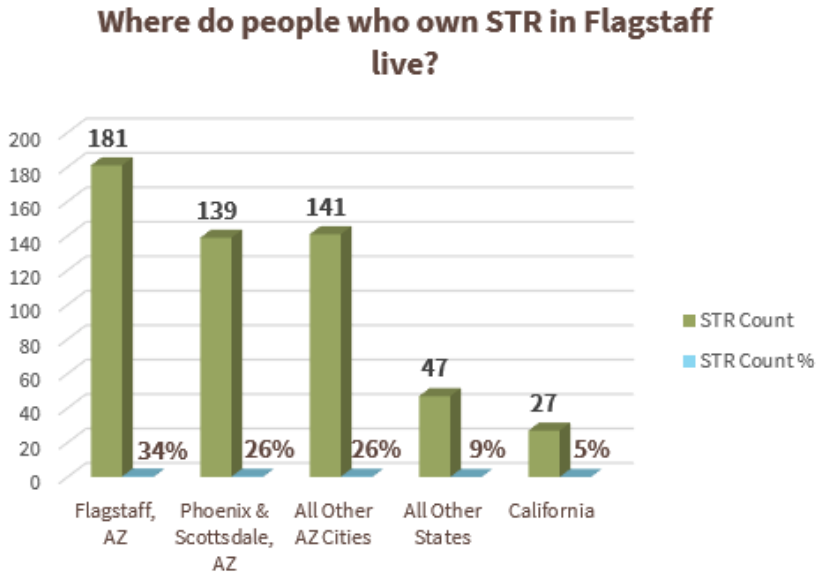
Assessment. On the other hand, even though these larger homes are not occupied year-round, their homeowners are part-time residents contributing to the local economy and taxes.

SHORT-TERM RENTALS (STR) AND VACATION RENTALS

Arizona law restricts local governments from enacting meaningful short-term rental regulations or limitations. Without a state preemption, local governments would have flexibility to regulate the number, location, and uses of short-term rentals in addition to limiting the number of short-term units per owner.[26] There are arguments both for and against the preemption currently impacting potential legislation, and there are possible legal implications as well.

Short-term rentals (STRs) have become very popular in Flagstaff. STRs increase pressure on the local housing market by removing approximately 535 housing units from residential use.[27] According to Harvard Law and Policy Review,[28] short-term rentals likely reduce the affordable housing supply by distorting the housing market in two interconnected mechanisms. The first such mechanism is one of simple conversion: any housing unit that was previously occupied by a Flagstaff resident, but is now listed as a short-term rental year-round, is a unit that has been removed from the rental market and has essentially been added to the community's supply of hotel rooms. This leads to a real, but likely mild, increase in citywide rents, an effect that is concentrated in affluent or gentrifying neighborhoods.

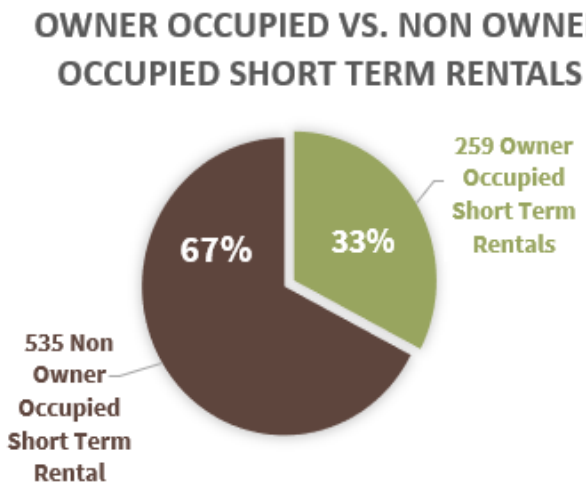
Today, Flagstaff is short 535 housing units due to short-term rental conversion. Of these 535 non-owner-occupied short-term rentals, the majority are owned by residents from Flagstaff or other major cities in Arizona; 74 (9.3%) owners are from out-of-state.



[26] State-Level Legal Barriers to Adopting Affordable Housing Policies in Arizona, Arizona State University, Morrison Institute for Public Policy, November 2021
[27] LODGINGRevs, City of Flagstaff Data
[28] How Airbnb Short-Term Rentals Exacerbate Los Angeles's Affordable Housing Crisis: Analysis and Policy Recommendations, Dayne Lee

“Hotelization” is the second mechanism of housing market distortion, according to the Harvard Law and Policy Review study. As long as a property owner or leaseholder can rent out a room on Airbnb (or another short-term rental service) for cheaper than the price of a hotel room, while earning a substantial premium over the residential market, there is an overpowering incentive to list each unit in a building on Airbnb rather than rent to [Flagstaff] residents, thereby creating "cottage hotels." This decreases the supply of housing and spurs displacement, gentrification, and segregation.

While approximately 259 owner-occupied short-term rentals exist within Flagstaff city limits, the Informal Working Group did not count these owner-occupied, single-bedroom short-term rentals in the gap analysis. This active income from owner-occupied STRs provides additional income that owners can utilize in paying their mortgage and possibly removes their household from living housing cost burdened. Perhaps more importantly, because the owner still occupies the home while renting out a room, the home is still housing a full-time resident of Flagstaff and is not taken out of the housing market.



NORTHERN ARIZONA UNIVERSITY STUDENT POPULATION AND ON CAMPUS HOUSING PRODUCTION

Founded in Flagstaff in 1899, Northern Arizona University (NAU) is a growing university with its main campus located in the heart of Flagstaff. NAU students currently make up approximately twenty six percent (26%) of Flagstaff's population. University students are a valued part of our community, yet their continued demand for housing impacts the cost and availability of housing for permanent residents. This results in higher demand and less supply, mostly for multi-family housing.

NAU's Flagstaff-based undergraduate enrollment increased 51% from 2000 to 2020, rising from an enrollment of 13,546 students to 20,433 on-campus students. Over the same period, NAU increased its on-campus housing capacity by 38%, from a capacity of 6,283 students to 10,144 students. NAU takes pride in ranking in the top 1% nationally for on-campus housing capacity per student. NAU housed 44% or 8,951 of its Flagstaff-based students in 2020, which was down significantly from previous years due to the university's COVID-19 mitigation strategy.[29] On-campus student housing occupancy at NAU typically runs at or near full capacity.

NAU has aggressively built on-campus student housing, but approximately 11,480 university students still lived off-campus in 2020. Since 2011, several private off-campus student-specific developments have been constructed. The Jack, The Standard at Flagstaff, Fremont Station, The Grove, and most recently the Uncommon all provide a student-focused residential experience but allow for housing of anyone who qualifies. Combined, these developments provide 3,531 beds. The above-noted developments are examples of developers purchasing privately-owned property in locations already zoned to accommodate multifamily housing. In cases like these, the City of Flagstaff applies the rules and regulations for development at the time of application which limits the discretion of the City of Flagstaff. Furthermore, the City of Flagstaff does not have authority in controlling construction on the NAU campus or student enrollment.

While most of the remaining NAU students compete with other Flagstaff residents for housing, either renting apartments or rooms in single-family homes, many of these students are likely cost-burdened as the estimated annual cost of attendance (tuition and fees plus books, housing, meals, transportation, and personal expenses) is $28,430 at NAU for Arizona residents living off-campus, $33,755 for students from one of the Western Undergraduate Exchange member states, or $43,176 for other non-resident students.[30] For the 2020-21 Academic Year, 60% of full-time undergraduate students received financial aid. On average, need-based financial aid covered 65.1% of those students' cost of attendance, meaning many students are required to take on unsubsidized or private student loans, find a job, or rely on family contributions to meet their needs.[31]

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[29] Northern Arizona University, Intuitional Research and Analysis, Fall 2020 Fast Facts and Data provided by NAU

[30] Northern Arizona University, Tuition and Expenses

[31] Northern Arizona University, Common Data Set 2020-2021

FLAGSTAFF HOUSING SURVEY – QUALITATIVE RESULTS

The 10-Year Housing Plan Survey collected data from Flagstaff residents on local living conditions, the cost of housing, and household goals. This survey builds on the Economic Collaborative of Northern Arizona's (ECoNA's) Housing Attainability for the Flagstaff Workforce report.[32] Survey questions were reviewed by working group participants. The resulting data reinforced housing burden tensions for both homeowners and renters, while also generating a wealth of personal comments about Flagstaff's residents' housing situations.

The survey was shared with Flagstaff businesses, multifamily developments, community members, and the service provider network known as the Coconino County Continuum of Care. The City shared the survey via social media, Housing Authority program participant newsletters, Flagstaff's Community Forum, and clients of emergency shelters and transitional housing. The survey was available online via Survey Monkey and in print at local libraries and with various service providers. Both English and Spanish surveys were available. Refer to the Survey and Methodology Document to view the full survey and analysis.

Responses were collected between April 22, 2021, and June 15, 2021. With 2,949 responses, the results were compared with previously available data from the US Census and the Department of Housing and Urban Development. Data included responses from:

- 1,833 owners (62.2% of respondents),
- 943 renters (32.0% of respondents), and
- 81 people experiencing homelessness (2.7% of respondents).
- 78 of 85 Flagstaff neighborhoods or 91.8% of neighborhoods with at least one response.
- 896 (30.4%) provided some additional comment out of 2,949 responses.
- More than one in four respondents (28.3%) reported having lived in Flagstaff for ten years or more.

Survey responses highlight a wealth of strong opinions related to the housing market. The results reinforce the need to address housing attainability by illuminating the diverse, personal narratives of Flagstaff residents and bringing the housing crisis to life. To reiterate from the previous chapter: In a market without subsidies, the people who lose out are Flagstaff's low- to moderate-income residents, which comprise 47% of our community.

[32] Housing Attainability for the Flagstaff Workforce, Economic Collaborative of Northern Arizona, November 2017

HOUSING BURDENED SURVEY RESULTS

Housing burden is defined as households paying more than 30% of their monthly gross income towards housing. Housing burden calculations were derived from survey respondents that provided income, utility, and monthly housing payment information. Burden calculations assumed a median value when provided a range, such as for income and utilities.

The results show that many households are housing cost burdened.

- 35.4% reported being housing burdened.
- Of renter respondents, 50.3% reported being housing burdened.
- Of homeowner respondents, 27.2% homeowner respondents reported being housing burdened.
- 22.8% reported being severely housing burdened, paying 50% or more of their income toward housing costs.

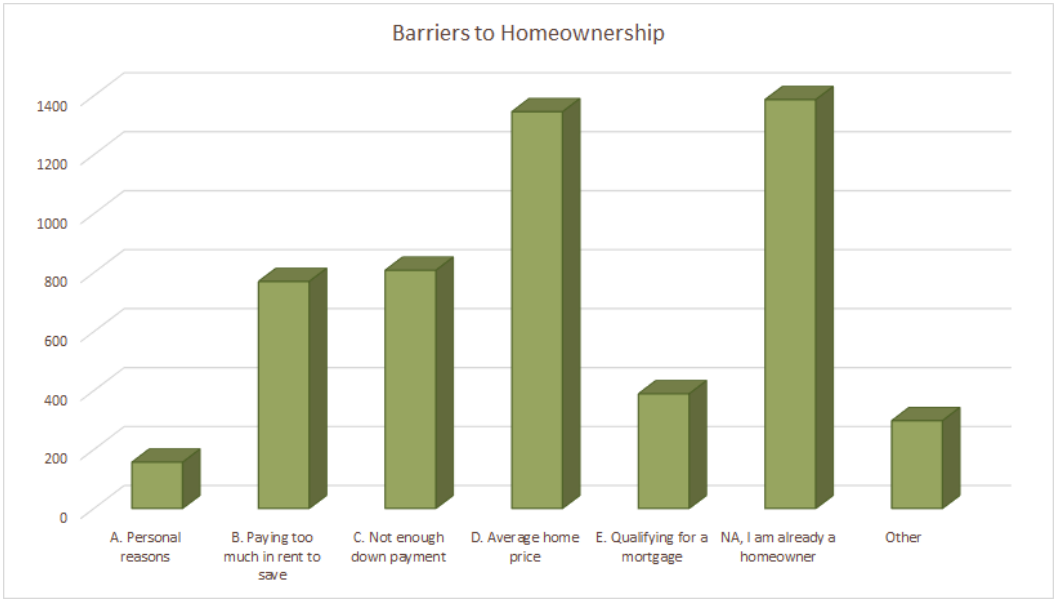
Overall Housing Burden			
Respondents that provided income, utility, and housing payment information			2,041
Respondents housing burdened	875	**Respondents severely burdened**	315
Percentage housing burdened	35.5%	**Percentage severely burdened**	12.8%
Owner Housing Burden		**Renter Housing Burden**	
Owners burdened	396	**Renters burdened**	454
Owners severely burdened	94	**Renters severely burdened**	206
Percentage of owners burdened	27.2%	**Percentage of renters burdened**	50.3%
% of owners severely burdened	8.2%	**% of renters severely burdened**	22.8%

BARRIERS TO HOMEOWNERSHIP

Almost all respondents answered the question "What, if any, do you see as barriers to homeownership in the future?" Respondents could select more than one barrier, resulting in 5,269 barriers from 2,915 respondents. Nearly half of all respondents (46.17%) identified as homeowners. Among respondents that were not already homeowners, almost eight out of nine (88%) cited average home price as a barrier. Over half of the non-homeowners cited paying too much in rent to [be able to] save (50%) or not [having] enough [for] down payment (53%).

One in four non-homeowner respondents cited qualifying for a mortgage as a barrier (25%) and one in ten cited personal reasons (10%). One in ten of all respondents (10%) included a qualitative response comment. These responses are summarized in the word bubble.

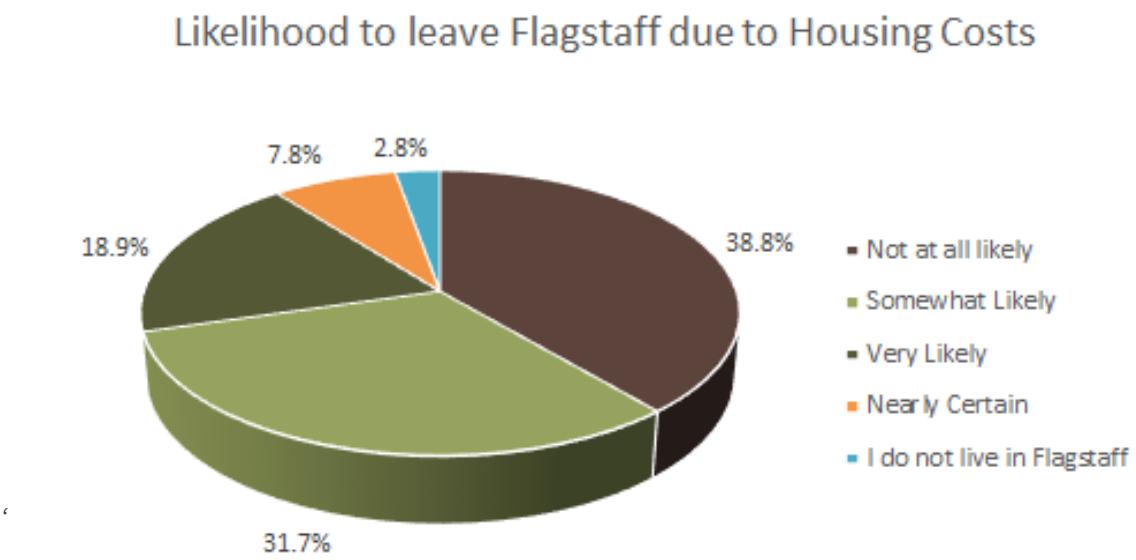




RESPONDENTS CONSIDERING LEAVING

Flagstaff residents' responses to the Housing survey illustrated that the Housing Emergency is causing residents to leave Flagstaff. While nearly two in five respondents (39%) reported that they are "not at all likely" to move from Flagstaff, more than one in four stated they were either "nearly certain" or "very likely" to relocate due to housing costs. These responses are contextualized with later comments citing the increasing cost of living, increasing rent, rising home prices, student housing, second homes, investment properties, and complaints about the styles of new construction. One respondent added:

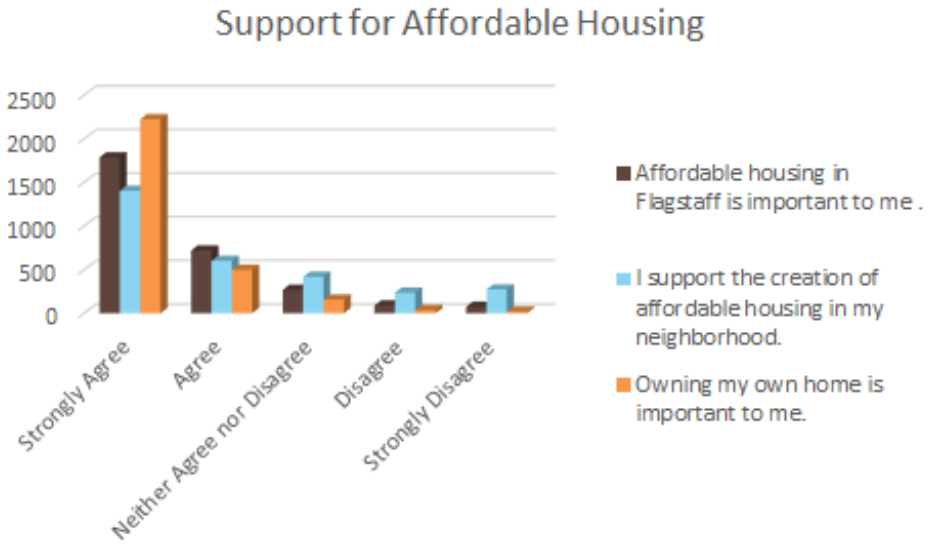
"I'm a 4th generation Flagstaff resident but the only people who seem to be able to afford to live here anymore are rich people [...]. The rest of us are hardworking poor who are being driven out."



SUPPORT OF AFFORDABLE HOUSING DEVELOPMENT

Flagstaff residents strongly supported the development of affordable housing in the survey: 17 out of 20 survey respondents (85%) supported or strongly supported affordable housing development. This includes 60.8% who "strongly agree" and 24.5% who "agree."

When this question is localized to the respondent's neighborhood, support for affordable housing development drops by about one-fifth among both "strongly agree" (47.9%) and "agree" (20.5%) groups. More pronounced than any other trend is that three out of four respondents "strongly agree" (75.8%, 2,224 responses) that owning a home is important to them, and an additional one in six respondents "agree" (16.9%, 497 responses).



This question indicates that community opposition can impact affordable housing development. While a majority see affordable housing as valuable or even essential, having a development within one's neighborhood reduces overall support for affordable housing. This decrease in support, when widespread, can undermine community support, funding, and implementation of affordable housing. When pursuing affordable housing development, community engagement and public participation are key.

PRELIMINARY COMMENT THEMES

Of the 2,949 respondents, 896 provided some form of comments (30.4%). This wealth of information includes personal narratives around housing, calls to action, complaints about home prices and high rent, short-term rental concerns and complaints, stories of relocating, comments on wages, and more. When possible, these responses have been included elsewhere in this document. A summary of the themes is highlighted in the word bubble.



HOUSING IS FLAGSTAFF'S INFRASTRUCTURE

Safe, decent, and affordable housing is a vital part of Flagstaff's infrastructure. Because housing is a basic human need that must come first, every unit counts. Affordable housing improves health and the environment, connects people to neighbors, bolsters housing productivity and economic growth, and supports local job creation.

Flagstaff's Interconnected Challenges and Shared Solutions

Informal working groups convened on the topics of housing and health, neighborhood and equity, housing and sustainability, and zoning and land use. Informal working groups were composed of City staff, Housing Commissioners, and community experts. City Housing Section staff and the Economic Vitality Section worked together to discuss the connection between housing and economic growth. The working groups discussed how mutually connected housing is to all the above topics. The groups defined housing barriers and challenges for residents and created policy initiatives and strategies to address the Housing Emergency and advance housing opportunities for all. Below you will read about Flagstaff's interconnected housing challenges and shared solutions.



Source: Live Well Arizona – Elements of a healthy community

Housing is interconnected to:

- Healthcare
- Neighborhoods and equity
- Sustainability
- Zoning and land use
- Economic opportunity

Housing and Healthcare

According to Enterprise Community Partners Inc.'s national survey regarding the link between homes and health, more than half of renters surveyed have delayed healthcare because they couldn't afford it. Furthermore, the survey reveals renters who are paying a high percentage of their income for housing are regularly making difficult tradeoffs between rent and health care.[33]



A 2020 University of California - Los Angeles study shows that people experiencing homelessness are two to four times more likely to require critical care and two to three times more likely to die than the general population. Stable housing is a basic, cost-efficient form of healthcare that has the potential to improve physical and behavioral health outcomes among vulnerable individuals and families significantly.

Housing with integrated services can take on several forms, but the basic idea is connecting homes where people live with health care services, either on-site or in the community. More and more research demonstrates that preventive care coupled with stable housing improves people's health, reduces urgent care visits, and saves people, taxpayer, and health care organizations money.[34]

COVID-19 PANDEMIC

The inextricable link between health and housing, as amplified by the COVID-19 pandemic, has spurred partnerships between healthcare and housing providers to address housing as a social determinant of health. Such partnerships can leverage additional funding plus the expertise to guide housing experts in addressing the multiple social dimensions of health and social outcomes that contribute to successful affordable housing development.[35]

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[33] The Link Between Affordable Housing and Healthcare, GlobeSt.com, Tanya Sterling, April 5, 2019
[34] Health in Housing: Exploring the Intersection Between Housing and Health Care, Center for Outcomes Research and Education (CORE) in partnership with Enterprise Community Partners, Inc., February 2016
[35] Arizona Housing Coalition, Best Practice Toolkit for Municipalities, for Increasing the Supply of Affordable Housing in Arizona

Housing, Neighborhoods & Equity

A child's future should not be determined by the zip code they live in. Unfortunately, educational attainment, employment, upward mobility, and even healthcare can be affected by one's street address and neighborhood. Residing in a home near community assets, such as schools, open or green space, and healthy foods encourages interaction with these healthy resources. Likewise, the social environment of a neighborhood impacts health and well-being. Neighborhood context and social dynamics can either reinforce health or determine it.[36]



As noted in Flagstaff's Lived Black Experience Strategic Plan, adopted by City Council on December 1, 2020, Dr. Ricardo Guthrie points out that Flagstaff has a documented history of redlining and other socioeconomic practices and policies which have created a pattern of segregation and discrimination against Blacks and communities of color within the City. He further states that when talking about the exclusion of a particular culture or race in a geographic area, it is important to understand that there are multifaceted aspects to such exclusion. For example, segregation can be at once physical (redlining, blockbusting, etc.), systemic (based in social practices, policies, and processes), and ideological (the idea that certain people do not belong in certain spaces, i.e., community opposition). Spatial racial exclusion consists of historic, institutionalized policies and practices which privilege private interests over the public good; this is the social landscape in which the idea that providing equal and equitable access to the public space of community (housing, parks, education, transportation, etc.) is viewed as threatening to privatized interests. The basic problem facing much of the economic and social development of communities of color throughout the country has been a long-held link between race, place, and power.[37]

For decades, starting at least in the 1930s, low-income and minority communities were intentionally cut off from lending and investment through a system known as redlining. Today, those same neighborhoods suffer not only from reduced wealth and greater poverty, but from lower life expectancy and higher incidence of chronic diseases that are risk factors for poor outcomes from COVID-19. Housing, economic,

[36] Housing Phoenix, City of Phoenix, 2020
[37] Flagstaff's Lived Black Experience Strategic Plan, "Flagstaff's Lived Black Experience: A Forgotten People Forging a Patch Forward," The Lived Black Experience CommUnity Coalition, 2020

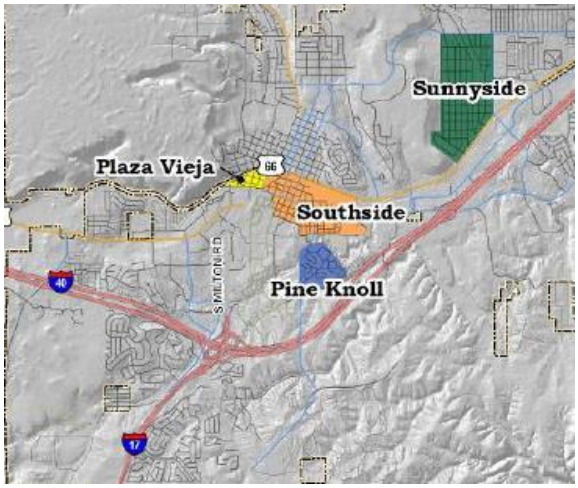
and social policies should aim to eliminate those risks and undo the unfair burdens of structural racism, both past and present.[38]

Research has shown that neighborhoods can be a good predictor of health. Therefore, it is imperative to place housing in areas of opportunity, such as community spaces, open spaces, quality schools, food, and transportation.

Flagstaff's Four Target Neighborhoods

The City of Flagstaff has identified four target neighborhoods. Target neighborhoods are defined by HUD as those where more than 50% of households have low- to moderate-incomes (80% or less of Flagstaff's Area Median Income).

- Sunnyside - Census Tract 3, Block Group 2, 3, & 4
- Southside - Census Tract 8, Block Group 1 & 2
- Pine Knoll - Census Tract 8, Block Group 3
- La Plaza Vieja - Census Tract 11.02, Block Group 3



Together, the 8,565 people who live in the target neighborhoods have the following characteristics:

- 6,210 are considered low- and moderate-income.
- 33% are Hispanic or Latino.
- 27% are people of color.
- 50% live in family households.
- 21% have a head of household that is 24 years old or younger.
- 24% own the home they occupy.

Three of these neighborhoods have formed a coalition referred to as "A League of Neighbors." The coalition includes the Sunnyside Neighborhood Association, La Plaza Vieja Neighborhood Association, and the Southside Community Association. Associations work hard to improve neighborhoods with grassroots efforts in safety improvements, beautification, job development, and community spirit. These resident-driven 501(c)3 organizations work collectively and advocate for continual and necessary infrastructure improvements in historic neighborhoods, more local jobs, increasing voter registration, and unity among neighbors.[39]

[38] National Community Reinvestment Coalition website
[39] 2021 Flagstaff Analysis of Impediments to Fair Housing

Housing and Sustainability

Sustainability Section, City of Flagstaff Carbon Neutrality Plan

The Flagstaff community faces urgent challenges from housing and climate change. The City of Flagstaff recognizes that the Housing Emergency and the climate emergency share many common solutions and that advancing housing and advancing climate action are not in conflict with each other. Indeed, implementing shared solutions to both challenges can lead to a stronger, healthier, and more connected Flagstaff.



To reduce emissions and build a stronger community, Flagstaff needs to rethink its housing and transportation systems—what we refer to as 'the Big Shift.' This shift entails building our neighborhoods so they are more dense, connected, and complete, so that residents don't have to travel across town as often. These neighborhoods welcome more neighbors of varying income levels, are stronger because neighbors know and help one another, and contribute to health, as residents can take active and healthy modes of transportation to get most of what they need nearby. These neighborhoods resemble Flagstaff's oldest, strongest, and most lively neighborhoods like Southside and Townsite, which were built before people were dependent on cars. Climate action that creates these lively and strong neighborhoods can increase housing and help solve the Housing Emergency, too.

Climate action can support lower overall costs of living. When considering the high costs of living in Flagstaff, housing is the greatest concern, but transportation contributes significantly to the cost of living in Flagstaff, and often requires smaller changes to realize cost savings. Many carbon neutrality solutions can decrease transportation costs by reducing dependence on cars. Car ownership can often be a burden for low-income families: AAA calculates that in 2020, new car ownership cost $9,561 per year for families, not including significant costs to the overall community and the environment.[40] Transportation costs tend to be lower for those living in neighborhoods where it is safe and accessible to walk, bike, or take transit, and if folks can be car-free, car-lite, or reduce the number of cars in their household, they can significantly reduce their cost of living. Many Flagstaff residents already are car-free or rely very little on personal vehicles, and are using the bus, biking, carpooling, and walking to meet their daily needs. Reducing how much residents must use cars can reduce the cost of living and make it so that more people can afford to live in Flagstaff.

[40] AAA, Your Driving Costs, 2020

Housing is critical to community health and overall resilience. As we anticipate changes to Flagstaff's climate and social systems, we know that different groups in Flagstaff have different levels of resilience, or ability to withstand challenges like a power outage, school closure, or a medical emergency. Those who are facing housing insecurity are more vulnerable to the impacts of climate change—and so today's current Housing Emergency means Flagstaff is not as strong a community as it could be. One's financial security and housing security can impact their ability to adjust to both short-term shocks like flooding and long-term shifts like increases in housing prices. Low-income residents, communities of color, and Indigenous individuals are more likely to experience disproportionate impacts from climate change. Improving housing in Flagstaff will mean that more residents can live in healthy homes and are better prepared for the changing climate.

An increasing Flagstaff population does not necessarily lead to an increase in overall greenhouse gas emissions. This is because Flagstaff is not a snow globe: our emissions contribute to the world's greenhouse gas emissions, and emissions increases in Flagstaff can be offset by decreases in emissions elsewhere. Indeed, when residents move to Flagstaff, there is an opportunity to decrease overall emissions. For instance, when a new resident moves to Flagstaff, they might live in Flagstaff in a home that is energy-efficient and that allows them to walk and bike and bus many places in Flagstaff; this lower-impact living is good for the climate if it allows the new resident to use less energy in their home and transportation. Yet when people cannot find housing in Flagstaff, they may choose to live in one of Flagstaff's outlying communities, or even commute from further-flung cities like Williams and Winslow. This may contribute to higher overall greenhouse gas emissions, if this new resident of Northern Arizona now has a long commute to a job in Flagstaff, leading to higher emissions overall. Because Flagstaff and northern Arizona cannot avoid growth, ensuring that that growth is done in a sustainable way is critical to reducing overall greenhouse gas emissions.

Addressing these community-wide issues can create significant opportunities. Yet implementing these community solutions will require rethinking our systems and moving away from today's status quo—a status quo that does not work for many people who struggle to live in Flagstaff and is contributing to global climate change. Shaking up our systems will require courage to move out of our comfort zone, to try new things, and to change the way we do business. This will be difficult, but these changes can help Flagstaff create more opportunities and become a more welcoming and inclusive community. Most importantly, climate action and increasing housing supply can allow Flagstaff's residents to access a higher quality of life.

Zoning and Land Use

Arizona Housing Coalition, Best Practice Toolkit for Municipalities, for Increasing the Supply of Affordable Housing in Arizona



Limited land and the current shortage in housing supply, relative to demand, are the primary reasons housing costs are increasing. A significant increase in housing supply is necessary to keep pace with current and projected housing demands. Strategies around affordable housing are incomplete when the focus is solely on increasing supply without giving attention to increasing density, establishing building innovation and cost saving practices, preserving affordable housing stock that already exists in our community, and reviewing City codes, processes, and fees to determine whether modification, reductions, or elimination would facilitate cost-saving housing development strategies.

Zoning has a profound impact on housing location and type, but it can also impact cost and affordability. In addition to regulating where housing can be built, the Flagstaff zoning codes regulate other elements such as lot sizes, number of bedrooms, lot coverage, parking, and setbacks, all of which can impact the cost of development and overall housing supply. Currently, 58% of land in Flagstaff is zoned for Single-family residential (R1, R1N, ER, and RR categories), which allows for single-family homes and accessory dwelling units on each property. R1N also allows duplexes. These are low-density zones generally capped between one and seven dwelling units per acre. In addition, 5.6% of land is zoned industrial, 12% is Public Open Space, and 10% is Public Facilities. Approximately 14% of the land within the city allows for medium or high-density housing to be constructed, either through the commercial zoning categories as mixed-use or as apartments, condos, etc.[41]

According to the Arizona Housing Coalition, Best Practice Toolkit for Municipalities, overregulation of land use can create barriers to affordable housing supply. Zoning regulations, parking requirements, height restrictions, lengthy permitting processes, City codes, and community opposition can contribute to increased development costs. Overregulation can restrict the ability of the developer to offer affordable rents and mortgages. Addressing overregulation and reform of land use policy is, therefore, a vital strategy for addressing housing affordability.

[41] Regional Snapshot, Zoning – How Land is Regulated, City of Flagstaff and Coconino County, October 21, 2021

A prominent barrier to affordable housing development is the State law prohibition on mandatory inclusionary zoning policy. Inclusionary zoning policies are imposed at the local municipal level to require private developers to set aside a certain percentage of their units within new construction projects at an affordable rent. State law determines whether municipal inclusionary housing measures are mandatory or voluntary. In Arizona, as well as Colorado, Idaho, Indiana, Kansas, Texas, Tennessee, and Wisconsin, local governments are prohibited from adopting at least some form of mandatory inclusionary housing (for ownership housing, rental housing, or both). In some cases, courts have determined that statutes limiting rent control also preempt mandatory inclusionary measures for rental housing. Inclusionary housing is a complicated national issue that varies greatly by state, with litigation and new legislation continually shaping the issue.[42] The City of Flagstaff has worked within the confines of state statutes to develop a voluntary program to incentivize the creation of both rental and ownership housing, yet, until such time as our state law is changed, mandatory inclusionary zoning is not a tool available to Arizona's local municipalities for increasing the supply of affordable rental housing.[43]

While municipalities cannot supersede this state law regulation, they may mitigate its effects through the creation of policies that incentivize the inclusion of affordable units. Land use policy reform can be critical to encouraging equitable development in response to Flagstaff's affordable Housing Emergency.

[42] Inclusionary Housing, Grounded Solution Network, Is Inclusionary Housing Legal?
[43] Best Practice Toolkit for Municipalities, for Increasing the Supply of Affordable Housing in Arizona, Arizona Housing Coalition, Joanna Carr, 2020

Housing and Economic Opportunity

Flagstaff Workforce Housing Attainability Report (Economic Collaborative of Northern Arizona - 2017) & Economic Vitality Division, City of Flagstaff

Economic Collaborative of Northern Arizona's Flagstaff Workforce Housing Attainability Report stated in its Executive Summary that there is "nearly universal agreement among large employer stakeholders that high housing costs negatively impact employee retention and recruitment," and "the lack of workforce housing has two primary negative effects on workforce: hindering recruitment…and employee retention issues."[44]



The nexus between affordable, attainable housing and the economic well-being of the Flagstaff community has been well documented over the years by studies such as the one listed above and by personal stories from businesses and employees alike. Housing costs keep employee groups out of the local marketplace, and they leave for other opportunities while Flagstaff loses not only members of its community, but also employees with skill and talent. This contributes to turnover and recruitment problems for existing businesses, higher training costs, lower productivity, and lower efficiency, which can then lead to employers following the workforce away. In the current economic sphere, many businesses follow talent, and difficulties hiring can lead to relocation or reductions. Additionally, new businesses that may have located to Flagstaff can be deterred by difficulty in relocating their current staff or perceived challenges with recruitment. As talent becomes more difficult to recruit and retain, the economic diversity and prosperity of the community suffers.

Not only does the higher cost of housing impact recruitment and retention, but when a large percentage of the population spends more than 30% of their income on housing, it limits other spending in the economy. As higher proportions of income go to rents and mortgages, this leaves less for spending in local stores and restaurants, which slows economic growth and restricts sales tax receipts for local governments.

With remote work likely here to stay, expect housing and economic opportunities to adjust accordingly. What we know now is that the ability to adequately and affordably house people at all income levels significantly impacts the ability to recruit and retain the workforce needed for a robust and diverse economy. Losing talent and experience to lower-priced communities will degrade Flagstaff's ability to

[44] Housing Attainability for the Flagstaff Workforce, Economic Collaborative of Northern Arizona, November 2017

compete for businesses and maintain jobs for those able to live here. Additionally, when people are housing cost burdened, they are less able to participate in the economy than they would be otherwise, which further limits prosperity. With stories of high-paid professionals leaving the community because they could not find acceptable housing becoming more and more common, it is clear that high housing prices are already impacting Flagstaff's economy in a negative way.

CONCLUSION

Flagstaff residents have made our mountain town the resilient community that it is today. As the City of Flagstaff works to provide equitable solutions to address the Housing Emergency for local residents, we will strive to ensure that affordable housing opportunities and subsidies are available for residents at all income levels and all stages of life.

The City of Flagstaff's mission—to protect and enhance the quality of life for all—directly aligns with the overarching goal of this Plan. Together with funding, partnerships, and the community's support, the City of Flagstaff can advance housing options for the full spectrum of residents who call Flagstaff their home.

Reduce the current affordable housing need in our community by half over the next ten years.

- Element one: Impact at least 6,000 low-to-moderate income Flagstaff residents through a combination of unit creation or subsidy provision.
- Element two: Create or preserve 7,976 housing units by 2031 with a minimum of 10% of them being affordable. This will increase the overall supply of market rate, workforce, and affordable housing occupied by local residents.

This Plan establishes one overarching goal supported by two fundamental elements that together will significantly impact housing attainability. The goal will be achieved through the implementation of the policy initiatives and strategies in this document. Implementation of the policy initiatives and strategies will be accomplished by the City of Flagstaff through the budget process, collaboration with City staff, and private, public, and nonprofit partnerships.

For the Detailed List of Policy Initiatives and Strategies that includes scope, term lengths, and City collaboration, please see page 52.

Over the next ten years, the City will continue to advance housing opportunities for all Flagstaff residents. Flagstaff's 10-Year Housing Plan is the City's foundational framework for establishing work programs, prioritizing staff work, and allocating the necessary funding for its implementation.

Detailed List of Flagstaff's 10-Year Housing Plan's Policy Initiatives & Strategies

Create Connect Preserve Protect		Scope for Strategy				Duration				Collaboration
Scope – Time Commitment & Public Engagement **L - Low** **M - Medium** **H - High time** **Funding Indicator** **ST - Staff Time** **$ - Low = $10,000 +** **$$ - Medium = $100,000 +** **$$$ - High = $1,000,000 +**		**Time Commitment**	**Public Engagement**	**Requires Council Consideration**	**Funding Required**	**Immediate Term (18 Months)**	**Short-Term (1 - 4 Years)**	**Long-Term (5-10 Years)**	**Ongoing**	**Division/Section Involvement**
Create housing options for households at all income levels and family sizes occupied by local residents.										
Create 1: Incentivize the creation of affordable units through various programs and mechanisms.										
Create 1.1	Ensure that modifications to the zoning code improve and maintain the effectiveness of the density incentives for affordable housing.	M	M	Yes	ST				X	Zoning Code, Planning, Housing Section
Create 1.2	Update the City's affordable housing incentive policy to implement the goals and policies of the 10-Year Housing Plan.	H	H	Yes	ST		X			Planning, Housing Section
Create 1.3	Amend the City code to implement the revised affordable housing incentive policy.	H	H	Yes	ST		X			Zoning Code, Building Safety, Planning, Management Services, Flagstaff Fire Department, Housing Section
Create 1.4	Explore implementing reduced fees and waivers to incentivize the development of affordable housing.	H	H	Yes	ST		X			Zoning Code, Building Safety, Flagstaff Police Department, Management Services, Flagstaff Fire Department, Water Services, Housing Section

Scope – Time Commitment & Public Engagement L - Low M - Medium H - High time	Funding Indicator ST - Staff Time $ - Low = $10,000 + $$ - Medium = $100,000 + $$$ - High = $1,000,000 +	Time Commitment	Public Engagement	Requires Council Consideration	Funding Required	Immediate Term (18 Months)	Short-Term (1 - 4 Years)	Long-Term (5-10 Years)	Ongoing	Division/Section Involvement
Create 1: Incentivize the creation of affordable units through various programs and mechanisms. (continued)										
Create 1.5	Explore in-lieu alternatives to providing affordable housing units (i.e. down payment assistance program, donation of finished lots, in-lieu payment, etc.).	H	H	Yes	ST		X			Real Estate, Zoning Code, Building Safety, Flagstaff Fire Department, Management Services
Create 1.6	Explore expedited review as an incentive to developments that provide affordable housing units.	H	L	Yes	ST		X			Zoning Code, Building Safety, Engineering & Capital Improvements, Planning, Water Services, Housing Section
Create 1.7	Explore ways to incentivize employers to offer Employer Assisted Housing (EAH) programs.	M	H	No	ST				X	Housing Section, Economic Vitality
Create 1.8	Explore the use of the community land trust model and public/private partnerships to incentivize the development of ownership units that are priced significantly below market rate.	M	L	Yes	ST		X			Real Estate Section, Housing Section
Create 2: Ensure that the Flagstaff Regional Plan includes robust affordable housing goals and policies.										
Create 2.1	Update the Regional Plan policies to support increased density related to affordable housing.	H	H	Yes	$$$			X		Sustainability, Planning, Housing Section
Create 2.2	Identify suburban areas to support greater density and intensity of development.	H	H	Yes	$$$			X		Engineering & Capital Improvements, Water Services, Sustainability, Planning, Housing Section
Create 2.3	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.	H	H	Yes	$$$			X		Sustainability, Planning, Housing Section

Scope – Time Commitment & Public Engagement L - Low M - Medium H - High time	Funding Indicator ST - Staff Time $ - Low = $10,000 + $$ - Medium = $100,000 + $$$ - High = $1,000,000 +	Time Commitment	Public Engagement	Requires Council Consideration	Funding Required	Immediate Term (18 Months)	Short-Term (1 - 4 Years)	Long-Term (5-10 Years)	Ongoing	Division/Section Involvement
Create 3: Create a dedicated funding source for affordable housing in Flagstaff.										
Create 3.1	Present 2022 Bond Measure to Council and Community for consideration for additional funding to be leveraged with local, state, and federal dollars.	H	H	Yes	$	X				Management Service, Housing Section
Create 3.2	Create a fund for the purpose of acquiring land/units for affordable housing in order to be able to respond to opportunities as they arise.	L	L	Yes	$$$		X			Real Estate Section, Management Services, Housing Section
Create 3.3	Identify ongoing resource opportunities for the purpose of assisting households experiencing homelessness, households at risk of becoming homeless, first-time homebuyers, and affordable housing targeted to these populations.	L	L	Yes	$$$		X			Management Services, Housing Section
Create 3.4	Explore other funding mechanisms for affordable housing developments such as Revitalization District and dedicated sales tax.	M	L	Inform	ST			X		Economic Vitality, Management Services, Housing Section

Scope – Time Commitment & Public Engagement L - Low M - Medium H - High time	Funding Indicator ST - Staff Time $ - Low = $10,000 + $$ - Medium = $100,000 + $$$ - High = $1,000,000 +	Time Commitment	Public Engagement	Requires Council Consideration	Funding Required	Immediate Term (18 Months)	Short-Term (1 - 4 Years)	Long-Term (5-10 Years)	Ongoing	Division/Section Involvement
Create 4: Amend the Flagstaff Zoning Code to facilitate the development of all housing types.										
Create 4.1	Review and amend the Planned Residential Development (PRD) standards and process to address barriers for infill development and allow for more flexibility in development options, building types, and lot configurations.	H	M	Yes	$$			X		Zoning Code, Building Safety, Planning, Flagstaff Fire Department, Housing Section
Create 4.2	Explore options with appropriate land use and economic studies as necessary that could integrate affordable housing units to be developed in commercial and industrial locations where suitable.	M	L	Yes	$$			X		Economic Vitality, Zoning Code, Building Safety, Planning, Flagstaff Fire Department, Housing Section
Create 4.3	Explore adding affordable housing as an allowed use in the Public Facilities (PF) Zone.	M	M	Yes	ST	X				Zoning Code, Building Safety, Flagstaff Fire Department, Housing Section
Create 4.4	Review parking standards for all residential development with the goal of reducing the cost of development and increasing the number of dwelling units that may be achieved.	M	M	Yes	ST			X		Zoning Code, Building Safety, Sustainability, Planning, Traffic Engineers, Flagstaff Fire Department, Housing Section
Create 4.5	Evaluate and amend the Resource Protection Overlay standards to ensure that the minimum densities can be met on most sites, including making the requirements for residential sites to be similar to those for a commercial site.	M	M	Yes	ST			X		Zoning Code, Planning, Housing Section
Create 4.6	Evaluate Resource Protection Overlay standards in terms of consistent application across each zone and allow for greater maximum densities.	M	M	Yes	ST			X		Zoning Code, Planning, Housing Section

Scope – Time Commitment & Public Engagement L - Low M - Medium H - High time	Funding Indicator ST - Staff Time $ - Low = $10,000 + $$ - Medium = $100,000 + $$$ - High = $1,000,000 +	Time Commitment	Public Engagement	Requires Council Consideration	Funding Required	Immediate Term (18 Months)	Short-Term (1 - 4 Years)	Long-Term (5-10 Years)	Ongoing	Division/Section Involvement
Create 4: Amend the Flagstaff Zoning Code to facilitate the development of all housing types. (continued)										
Create 4.7	Continue to evaluate and amend the current Accessory Dwelling Unit (ADU) zoning code standards with the goal of increasing supply.	L	M	Yes	ST		X			Zoning Code, Water Services, Housing Section
Create 4.8	Explore allowing additional flexibility for homeowners and landlords to increase density.	M	M	Yes	ST			X		Zoning Code, Building Safety, Planning, Flagstaff Fire Department, Water Services, Housing Section
Create 5: Explore regulatory efficiency and cost-saving practices.										
Create 5.1	Hire an independent consultant to review City codes, processes, and fees to determine whether modifications, reductions, or eliminations would facilitate cost-saving housing development strategies.	H	L	Yes	$$		X			Economic Vitality, Zoning Code, Building Safety, Sustainability, Planning, Flagstaff Police Department, Management Services, Flagstaff Fire Department, Water Services, Housing Section
Create 5.2	Explore innovative tools and techniques to limit costs for regional development impacts on individual development projects, such as infrastructure.	H	L	Inform	ST			X		Zoning Code, Planning, Housing Section, Engineering & Capital Improvements, Water Services
Create 5.3	Create a dedicated team within Planning and Development Services specifically for affordable housing projects.	L	L	No	ST		X			Planning, Housing Section

Scope – Time Commitment & Public Engagement L - Low M - Medium H - High time	Funding Indicator ST - Staff Time $ - Low = $10,000 + $$ - Medium = $100,000 + $$$ - High = $1,000,000 +	Time Commitment	Public Engagement	Requires Council Consideration	Funding Required	Immediate Term (18 Months)	Short-Term (1 - 4 Years)	Long-Term (5-10 Years)	Ongoing	Division/Section Involvement
Create 5: Explore regulatory efficiency and cost saving practices. (continued)										
Create 5.4	Establish a simplified entitlement (i.e., rezoning and conditional use permit) and development review process.	H	L	Yes	ST		X			Zoning Code, Engineering & Capital Improvements, Planning, Water Services
Create 5.5	Explore alternative Engineering and Fire requirements to minimize the cost of development without compromising Fire and Life Safety.	H	L	Yes	ST			X		Building Safety, Engineering & Capital Improvements, Planning, Flagstaff Police Department, Flagstaff Fire Department, Water Services, Housing Section
Create 5.6	Make pre-approved standard plans available to property owners to reduce planning and review costs.	M	L	Yes	$$			X		Building Safety, Engineering & Capital Improvements, Planning, Flagstaff Fire Department, Water Services, Housing Section
Create 5.7	Construct and promote net zero or Net Zero Ready affordable housing when funding is available and encourage private developers to do the same.	M	L	Yes	$$$				X	Sustainability, Water Services, Housing Section
Create 5.8	Prioritize Capital Improvement Projects that facilitate affordable housing.	M	L	Yes	ST				X	Engineering & Capital Improvements, Sustainability, Planning, Management Services
Create 5.9	Prioritize the development of City of Flagstaff owned land designated for affordable housing and evaluate other City-owned parcels for affordable and mixed-income housing.	H	H	Yes	$$$			X		Housing Section, Real Estate

Scope – Time Commitment & Public Engagement L - Low M - Medium H - High time	Funding Indicator ST - Staff Time $ - Low = $10,000 + $$ - Medium = $100,000 + $$$ - High = $1,000,000 +	Time Commitment	Public Engagement	Requires Council Consideration	Funding Required	Immediate Term (18 Months)	Short-Term (1 - 4 Years)	Long-Term (5-10 Years)	Ongoing	Division/Section Involvement
Connect people to equitable housing solutions.										
Connect 1: Reduce homelessness in the Flagstaff community and seek creative solutions to foster housing permanency for all.										
Connect 1.1	Explore the feasibility of a one-stop shop for a pre-qualification letter or document that avoids application fees for rentals.	M	H	No	ST			X		Housing Section
Connect 1.2	Create housing navigator or advocate positions to assist both landlords and housing-challenged populations in securing and maintaining housing.	M	L	Yes	$$	X				Flagstaff Police Department, Housing Section
Connect 1.3	Continue to support and develop Coordinated Entry as a meaningful process that provides linkages to healthcare, behavioral health, and housing.	M	H	Yes	$				X	Housing Section
Connect 2: Implement a framework for centering equity in proposed and existing housing practices, policies, and programs.										
Connect 2.1	Evaluate housing policies and strategies in City of Flagstaff planning documents through an equity lens.	M	M	Yes	ST				X	Housing Section
Connect 2.2	Encourage community organizations such as the local Continuum of Care to continue to integrate equity into programs and policies.	M	H	No	ST				X	Housing Section
Connect 2.3	Explore reviewing member composition of the Housing Commission and Housing Authority Board to ensure racial and economic diversity reflective of the Flagstaff community and present to Council for input.	M	M	Yes	ST		X			Housing Section
Connect 2.4	Utilize City of Flagstaff resources to educate the community about financing and housing opportunities with an emphasis on assisting low- to moderate-income households to advance through the housing continuum and to address past racial disparities.	M	M	No	$				X	Housing Section

Scope – Time Commitment & Public Engagement L - Low M - Medium H - High time	Funding Indicator ST - Staff Time $ - Low = $10,000 + $$ - Medium = $100,000 + $$$ - High = $1,000,000 +	Time Commitment	Public Engagement	Requires Council Consideration	Funding Required	Immediate Term (18 Months)	Short-Term (1 - 4 Years)	Long-Term (5-10 Years)	Ongoing	Division/Section Involvement
Connect 3: Integrate healthcare into housing programs, and housing into healthcare programs, as appropriate.										
Connect 3.1	Raise awareness of housing security as a social determinate of health.	M	M	No	ST				X	Housing Section
Connect 3.2	Encourage neighborhoods, housing types, and building practices that increase health.	M	M	No	ST				X	Planning, Housing Section
Connect 3.3	Work in partnership with the community to develop and promote community health measurement data collection into housing services when viable.	H	M	No	ST				X	Flagstaff Police Department, Housing Section
Preserve affordable housing.										
Preserve 1: Encourage the adaptive reuse of buildings.										
Preserve 1.1	Explore the use of Low-Income Housing Tax Credit in conjunction with Historic Preservation Tax Credit for the acquisition and rehabilitation of affordable housing where appropriate.	M	L	No	ST				X	Economic Vitality, Housing Section
Preserve 1.2	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.	H	M	Yes	ST			X		Economic Vitality, Housing Section
Preserve 1.3	The City's Housing Section and the Sustainability Section will partner to seek and administer grants for housing programs and developments that invest in environmentally friendly retrofits and upgrades.	M	L	Yes	$				X	Sustainability, Management Services, Water Services, Housing Section

Scope – Time Commitment & Public Engagement L - Low M - Medium H - High time	Funding Indicator ST - Staff Time $ - Low = $10,000 + $$ - Medium = $100,000 + $$$ - High = $1,000,000 +	Time Commitment	Public Engagement	Requires Council Consideration	Funding Required	Immediate Term (18 Months)	Short-Term (1 - 4 Years)	Long-Term (5-10 Years)	Ongoing	Division/Section Involvement
Preserve 2: Expand efforts to preserve existing housing stock.										
Preserve 2.1	Continue homeownership rehabilitation programs and create an affordable rental rehabilitation program with a focus on establishing safe, decent, and sustainable housing.	M	M	Yes	$				X	Housing Section, Water Services
Preserve 2.2	Acquire and rehabilitate already built properties for affordable housing projects when financially feasible.	H	L	Yes	$$$			X		Real Estate Section, Management Services, Housing Section
Protect people from housing discrimination and remove housing barriers.										
Protect 1: City Council will continue to lobby and support federal and state legislation to encourage changes to federal and state laws, and to increase the amount of funding available for the preservation and construction of affordable housing.										
Protect 1.1	Advocate to the State of Arizona to allow greater local control of vacation rentals and second homes.	M	L	Yes	ST				X	Economic Vitality, Management Services, Housing Section
Protect 1.2	Pursue local and legislative changes that increase the preservation, creation, and protection of affordable housing as necessary.	M	L	Yes	ST				X	Housing Section
Protect 1.3	Explore expanding state and local fair housing protected classes to include items such as age and source of income.	M	L	Yes	ST				X	Housing Section

Scope – Time Commitment & Public Engagement L - Low M - Medium H - High time	Funding Indicator ST - Staff Time $ - Low = $10,000 + $$ - Medium = $100,000 + $$$ - High = $1,000,000 +	Time Commitment	Public Engagement	Requires Council Consideration	Funding Required	Immediate Term (18 Months)	Short-Term (1 - 4 Years)	Long-Term (5-10 Years)	Ongoing	Division/Section Involvement
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.										
Protect 2.1	Create and maintain an Affordable Housing Impact Statement.	H	M	No	ST		X			Housing Section, Planning
Protect 2.2	Encourage diversity of 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.	M	L	No	ST				X	Housing Section
Protect 2.3	Evaluate, better understand, and if necessary, develop strategies to address the disparate impacts of programs like Crime Free Multi-Housing and other relevant programs and policies.	M	H	Yes	ST	X				Flagstaff Police Department, Housing Section
Protect 2.4	Implement a public outreach campaign to educate the community about the critical role affordable housing plays in a thriving community, create a groundswell of support for affordable housing, and combat community opposition to housing and affordable housing.	M	H	No	$	X				Sustainability, Flagstaff Police Department, Housing Section
Protect 3: Continue Flagstaff's commitments to further federal and Arizona Fair Housing laws in all housing-related services and programs, value the efforts of those who seek to reduce barriers to equitable housing opportunities, and provide Fair Housing education and resources to the community.										
Protect 3.1	Work with community partners to ease reentry, assess the need for alternative housing models and processes, and create necessary programs that address the systemic and structural barriers to justice-impacted citizens.	M	H	No	ST				X	Flagstaff Police Department, Housing Section
Protect 3.2	Examine and update, if needed, the City of Flagstaff's Housing Limited English Proficiency (LEP) Plan.	M	L	No	ST		X			Management Services, Housing Section

Scope – Time Commitment & Public Engagement L - Low M - Medium H - High time	Funding Indicator ST - Staff Time $ - Low = $10,000 + $$ - Medium = $100,000 + $$$ - High = $1,000,000 +	Time Commitment	Public Engagement	Requires Council Consideration	Funding Required	Immediate Term (18 Months)	Short-Term (1 - 4 Years)	Long-Term (5-10 Years)	Ongoing	Division/Section Involvement
Protect 3: Continue Flagstaff's commitments to further federal and Arizona Fair Housing laws in all housing-related services and programs, value the efforts of those who seek to reduce barriers to equitable housing opportunities, and provide Fair Housing education and resources to the community. (continued)										
Protect 3.3	Research ways to provide incentives to landlords who rent to those with any housing voucher or housing barriers, such as poor credit, criminal history, etc.	M	M	Yes	ST		X			Management Services, Housing Section
Protect 3.4	Support local social service networks in establishing a home share program inclusive of features like peer support and conflict resolution.	L	H	No	ST			X		Housing Section

KEY TERMS

Adaptive Re-use: Fixing up and remodeling a building or space and adapting the building or space to fit a new use. Source: Flagstaff Regional Plan 2030

Affordable Housing: Housing for which the occupant is paying no more than 30 percent of their gross income for housing costs, including utilities. Source: HUD

Area Median Income: The Department of Housing and Urban Development (HUD) sets income limits that determine eligibility for federal assisted housing programs. HUD also develops income limits based on Median Family Income estimates and Fair Market Rent area definitions for each metropolitan area, parts of some metropolitan areas, and each non-metropolitan county. Source: HUD, Office of Policy Development and Research

Commercial: Term collectively defining workplace, office, retail, and lodging functions for the purpose of describing general land use. Source: Flagstaff Zoning Code

Concept Plan: A plan or map that depicts (illustrates, but does not regulate), for example, the streets, lots, buildings, and general landscaping of a proposed development. Source: Flagstaff Regional Plan 2030

Continuum of Care: A community plan to organize and deliver housing and services to meet the specific needs of people who are homeless as they move to stable housing and maximize self-sufficiency. It includes action steps to end homelessness and prevent a return to homelessness. HUD identifies four necessary parts of a continuum:

- Outreach, intake, and assessment in order to identify service and housing needs and provide a link to the appropriate level of both;
- Emergency shelter to provide an immediate and safe alternative to sleeping on the streets, especially for homeless families with children;
- Transitional housing with supportive services to allow for the development of skills that will be needed once permanently housed; and
- Permanent and permanent supportive housing to provide individuals and families with an affordable place to live with services if needed**.**

Density: The number of dwelling units within a standard measure of land area, usually given as units per acre. Source: Flagstaff Zoning Code

Equity: Proportional representation (by race, class, gender, etc.) of opportunities in housing, healthcare, employment, and all indicators of living a healthy life. Equity is about fairness; it ensures that each person gets what the person/population needs. To achieve equity, policies and procedures may result in an unequal distribution of resources but will lead to equitable outcomes for everyone. Source: HUD Exchange

Experiencing Homelessness: An individual or family that lacks a fixed, regular, and adequate nighttime residence, such as those living in emergency shelter, transitional housing. Persons living in places not meant for human habitation are experiencing homelessness. Source: Phoenix Community Alliance

Key Terms, continued

Gentrification: A shift in an urban community towards wealthier residents and/or businesses and increasing property values, often at the expense of the poorer residents of the community. This is a result of the process of renewal and rebuilding. Source: Flagstaff Regional Plan 2030

High Density: A development with greater than 14 dwelling units per acre. Source: Flagstaff Regional Plan 2030

High Occupancy Housing (HOH): A term developed to describe a particular style of housing in a specific plan. This term has been revised and may be revisited in the Flagstaff Zoning Code. The Flagstaff Zoning Code should be referenced for the most up to date definition.

Homeless Management Information System (HMIS): A local information technology system used to collect client-level data and data on the provision of housing and services to homeless individuals and families and persons at risk of homelessness. Source: HUD Exchange

Historic Building (Property): A building with sufficient age, a relatively high degree of physical integrity, and historical significance that may be eligible for listing on the National Register of Historic Places. Historic buildings may occur within or outside of a historic district and may be protected regardless of their relationship to a historic district. Source: Southside Community Plan

Housing First: A homeless assistance approach that prioritizes providing permanent housing to people experiencing homelessness, thus ending their homelessness and serving as a platform from which they can pursue personal goals and improve their quality of life. This approach is guided by the belief that people need basic necessities like food and a place to live before attending to anything less critical, such as getting a job, budgeting properly, or attending to substance use issues. Additionally, Housing First is based on the theory that client choice is valuable in housing selection and supportive service participation, and that exercising that choice is likely to make a client more successful in remaining housed and improving their life. Source: National Alliance to End Homelessness

Inclusionary Zoning: Local inclusionary housing policies tie the creation of affordable homes for low- and moderate-income households to the construction of market-rate housing or commercial development. Source: Grounded Solutions, Inclusionary Housing

Industrial, Heavy: Construction, manufacturing, transportation, and public utilities, and those uses which have severe potential for negative impact on any uses located relatively close to them. Source: Flagstaff Zoning Code

Infill: Occurs when new buildings are built on vacant parcels within city service boundaries and surrounded by existing development. Source: Flagstaff Regional Plan 2030

Intensity: The mass, bulk, and scale of buildings in commercial, industrial, institutional, and mixed-use settings. Typically, intensity is measured by the Floor Area Ratio. Source: Southside Community Plan

Key Terms, continued

Justice Impacted Citizens: Includes those who have been incarcerated or detained in a prison, immigration detention center, local jail, juvenile detention center, or any other carceral setting, those who have been convicted but not incarcerated, those who have been charged but not convicted, and those who have been arrested. Source: Law School Admission Council

Medium Density: A development with 7 to 14 dwelling units per acre. Source: Southside Community Plan

Mixed Use: The development of a single building containing more than one type of land use or a single development of more than one building and use, including, but not limited to, residential, office, retail, recreation, public, or entertainment, where the different land use types are in close proximity, planned as a unified complementary whole, and shared pedestrian and vehicular access and parking areas are functionally integrated. Source: Flagstaff Zoning Code

Missing middle housing: A range of multi-family or clustered housing types that are compatible in scale with single-family or transitional neighborhoods. Missing middle building types include duplexes, triplexes, fourplexes, townhomes, live/work, cohousing, accessory dwelling units, and courtyard buildings. These building types are called "missing" because although historically they have played an instrumental role in providing housing choices and affordable options in many cities across the country, they have typically been difficult to build under city land-use laws since the mid-1940s. The term "middle" refers to building types that sit in the middle of the density and affordability spectrum**.** Source: Parolek, Daniel (2020). Missing Middle Housing: Thinking Big and Building Small to Respond to Today's Housing Crisis. Washington DC: Island Press.

Multi-Family Housing: A residential building comprised of four or more dwelling units. Source: Flagstaff Zoning Code

Neighborhood (place type): Includes both geographic (place-oriented) and social (people-oriented) components and may be an area with similar housing types and market values, or an area surrounding a local institution patronized by residents, such as a church, school, or social agency. Source: Flagstaff Southside Community Plan

Policy: An aspirational statement within the Regional Plan or other City document adopted by resolution, which guides City staff in implementing plans and programs. Source: Flagstaff Regional Plan 2030

Preservation: An endeavor that seeks to preserve, conserve, and protect buildings, objects, landscapes, or other artifacts of historical significance. Source: Flagstaff Regional Plan 2030

Racial Equity: The condition that would be achieved if one's racial identity no longer predicted, in a statistical sense, one's housing, economic, and health outcomes. Racial equity includes addressing root causes of inequities, not just their outcomes. This includes elimination of policies, practices, attitudes, and cultural messages that reinforce differential outcomes by race or otherwise fail to address them. Racial equity is also a process. This means that Black people, Indigenous people, and people of color—those most impacted—are part of the decision-making about funding, policies, and programs. Sources: Center for Assessment and Policy Development and Center for Social Inclusion

Key Terms, continued

Redevelopment: Is when new development replaces outdated and underutilized development. Source: Flagstaff Regional Plan 2030

Residential: A land use type that is designated to accommodate single-family and multiple-family dwellings. Includes mobile and manufactured homes. Source: Flagstaff Zoning Code

Rezoning: A change to a property's land use, or zoning, designation that requires an update to the Zoning Map. Source: Southside Community Plan

Second home: A property that is not used as a primary residence.

Subsidy: To supplement or offset monthly housing costs for individuals or families to remain in housing. Forms of subsidies include direct housing subsidies, public housing, rent supplement, and some types of cooperative housing. Source: Phoenix Community Alliance

Target Neighborhood: A qualified census tract where 51% or more of the households have an income which is 80% or less of Flagstaff's Area Median Income. Source: HUD Exchange

Urban Growth Boundary: The line on a map that is used to mark the separation of urbanizable land from rural land and within which urban growth should be encouraged and contained and outside of which urban development should not occur. Source: Flagstaff Regional Plan 2030

Zoning: The control of the use of land, and of the appearance and use of buildings, by the City of Flagstaff. Source: Southside Community Plan

Zoning Code: A set of legally binding provisions adopted by the City Council consistent with state law regulating the use of land or structures, or both, used to implement the goals and policies of the Regional Plan. Source: Flagstaff Regional Plan 2030

THANK YOU

City Council

Mayor Paul Deasy
Vice Mayor Becky Daggett
Councilmember Austin Aslan
Councilmember Jim McCarthy
Councilmember Miranda Sweet
Councilmember Regina Salas
Councilmember Adam Shimoni

Housing Commission

Vice Mayor Becky Daggett
Eric Davis
Tyler Denham
Nicole Ellman, Chair
Karen Flores
Sandi Flores
Khara House, Vice Chair
Chris Kemmerly
Devonna McLaughlin
Moses Milazzo
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Organizations

A League of Neighborhoods
Arizona Housing Coalition
Arizona Multihousing Association
Catholic Charities
Coconino Community College
Coconino County
Coconino County Continuum of Care
DNA People's Legal Services
Economic Collaborative of Northern Arizona
Flagstaff Housing Authority
Flagstaff Public Libraries
Flagstaff Shelter Services
Friends of Flagstaff's Future
Greater Flagstaff Chamber of Commerce
Housing Solutions of Northern Arizona
League of Neighborhoods
La Plaza Vieja Neighborhood Association
Northern Arizona Association of Realtors
Northern Arizona University
Northland Family Help Center
Sunnyside Neighborhood Association
Sunshine Rescue Mission
Southside Community Association
The Guidance Center

ATMP Engineering Standards Revisions

City of Flagstaff

Round 1 revisions | Adopted April 16, 2024			
Change	*Summary*	*Code sections*	*Next steps*
Bicycle Exit / Entrance Ramp Detail	Adds detail for a bicycle exit / entrance ramp.	13-23: 10-10-035 Detail	--
Bicycle facilities	Deletes the reference to MetroPlan's Pedestrian and Bicycle Design Guide, added a reference to AASHTO Guide for the Development of Bicycle Facilities.	13-14-001-0001	--
Bus pullout detail	Adds text to detail to specify that FUTS trails shall be aligned behind bus shelters.	13-23: 10-10-019 Detail	--
Traffic control plans	Clarifies that traffic control plans are required when sidewalks, bikeways, or FUTS trails are temporarily closed or affected by construction or maintenance activities.	13-06-008-0001	--
	Requires traffic control plans to address pedestrian and bicycle accommodation through construction zones, including temporary reroutes.	13-06-008-0002	--
	Requires traffic control plans to depict accessible routes through construction zones that comply with ADA.	13-06-008-0002	--
Driveway-Pedestrian Ramp Combination	Deletes detail for combined driveway/pedestrian ramp.	13-23: 10-10-039 Detail	--
Obstructions	Requires location of signal poles, pedestrian push buttons, and street lights to be outside of sidewalks, bikeways, FUTS trails, accessible routes, and curb ramps. Specifies that these facilities should maintain full width and not be narrowed.	13-16-002-0002	--
	Requires location of traffic signs outside of sidewalks, bikeways, FUTS trails, and curb ramps.	13-16-005-0001	--
Manhole and valve placement	Specifies that manholes should be located outside of sidewalks, bikeways, bike lanes, and FUTS trails when feasible.	13-09-002-0006	--
	Specifies that valves should be located outside of sidewalks, bikeways, bike lanes, and FUTS trails when feasible.	13-09-003-0005	--
Ped and bike facilities chapter	Changes the title of this chapter from BICYCLE FACILITIES to FUTS TRAILS, PEDESTRIAN AND BICYCLE FACILITIES	13-14	--
Pedestrian and Bicycle Facilities	Adds a new division for pedestrian and bicycle facility standards.	13-14-001	--
FUTS standards	Adds a new division for FUTS standards.	13-14-002	--
	Adds a requirement that FUTS trails be designed and built in conformance with AASHTO Guide for the Development of Bicycle Facilities.	13-14-002-0001	--

	Adds a series of dimensional requirements for FUTS trails, including width, shoulders, parkways, horizontal and vertical clearance, grades, cross slopes, design speeds, and horizontal and vertical curves.	13-14-002-0002	--
	Adds a new section to describe requirements for FUTS structural sections, or how FUTS trails should be built. Text removed from the standard detail was added here.	13-14-002-0003	--
	Adds a new section for expansion and control joints along FUTS trails.	13-14-002-0004	--
	Adds a new section with materials standards for FUTS shoulders.	13-14-002-0005	--
	Adds a new section to describe transitions between FUTS trails, sidewalks, other trails, and streets.	13-14-002-0006	--
	Adds a new section that references AASHTO for requirements for FUTS fencing.	13-14-002-0007	--
	Adds a new section that describes minimum height and width for FUTS trails. The minimum width is a sliding scale based on the length of tunnel.	13-14-002-0008	--
	Adds a detail for a collapsible bollard to be used on FUTS trails.	13-23: 13-03-015 Detail	--
	Deletes FUTS details for paved trails, aggregate trails, fencing, aggregate materials (replaced with new details).	13-23: 14-01-010 Detail	--
	Removes pedestrian underpass detail (dimensional requirements added as text to 13-14).	13-23: 14-01-011 Detail	--
	Adds new detail for paved FUTS trails.	13-23: 14-02-001 Detail	--
	Adds new detail for aggregate FUTS trails. Includes table with new gradation specs. Removes requirement for lignin.	13-23: 14-02-002 Detail	
	Adds detail for expansion and contraction joints on FUTS trails.	13-23: 14-02-005 Detail	--
	Adds detail for FUTS fencing and post caps.	13-23: 14-02-010 Detail	--
Rapid flashing beacons	Updates standard detail for pedestrian rapid flashing beacons.	13-23: 16-04-010 Detail	--
Striping/markings	Indicates that longitudinal pavement markings comply with MUTCD.	13-16-006-0001	--
	Indicates that transverse pavement markings, symbols, and legends comply with MUTCD.	13-16-006-0002	--
	Updates details for bike lane and crosswalk striping.	13-23: 16-06-010 Detail	--
Traffic control plans	Clarifies that traffic control plans are required when sidewalks, bikeways, or FUTS trails are temporarily closed or affected by construction or maintenance activities.	13-06-008-0001	
	Requires traffic control plans to address pedestrian and bicycle accommodation through construction zones, including temporary reroutes.	13-06-008-0002	--

	Requires traffic control plans to depict accessible routes through construction zones that comply with ADA.	13-06-008-0002	--

Proposed Round 2 Revisions			
Change	*Summary*	*Code sections*	*Next steps*
Bicycle detection	Include language to require detection of bicycles at traffic signals.	13-16-003-0010 A	2 Research state of the practice 2 Review current technologies 3 Internal discussion
Curb ramps/ped signals	Revise language and detail for curb ramps and pedestrian push buttons to comply with new PROWAG guidelines, including APS (Accessible Pedestrian Signal) standards.	13-16-002-0002 13-16-003-0010 C 13-16-005-0002 A 13-23: 10-10-034 Detail	2 Review new PROWAG and MUTCD guidance 3 Internal review 4 PAC - TC - CIAL review
Easement language	Review draft / add new language for FUTS and public access easements in Subdivision Code	13-04-001-0003	1 Review draft easement language
Longitudinal sawcuts in bike lanes	Clarify requirement that sawcut lines be made at the bike lane line rather than in the middle of bike lanes.	13-06-007-0003 A-B 13-10-009-0001 13-15-001-0001	1 Review affected sections for coordination 1 Draft revised language
Rapid flashing beacons	Revise detail to include geometric and dimensional details for RFBs, including minimum island width/length, crossing geometry, and minimum walkway widths.	13-23: 16-04-010 Detail	2 Research state of the practice 3 Internal review 4 PAC - BAC - TC - CIAL review
	Add a detail for crossings on two lane streets, with and without median islands, that allow pedestrians to cross the entire width at once.	13-23: 16-04-010 Detail	
	Add a detail with geometric and dimensional details for different types of median island crossings, including zee, angle, and straight crossings.	13-23: 16-04-010 Detail	
Right turn lanes	Revise right turn lane detail to remove short acceleration lane on far side of dedicated right turn lanes, depict sidewalk alignment.	13-23: 10-10-020 Detail	1 Draft revised detail
Rolled curb	Expand areas where rolled curb can be used to include single-family subdivisions with lot widths of 50 feet or less, in addition to townhouse development.	13-10-002-01 Table	2 Research state of the practice 3 Internal discussion 4 PAC - TC - CIAL review
Street cross sections	Reduce through lane width from 12 to 11 feet. Eliminate 12-foot lane width and 30-foot radius for truck routes.	13-10-002-01 Table	2 Research state of the practice 3 Internal discussion 4 TC review
	Decrease sidewalk and parkway width from 5 to 4 feet for Residential Local Wide and Residential Local streets.	13-10-002-01 Table	2 Research state of the practice 3 Internal discussion 4 PAC - TC - CIAL review
	Increase sidewalk width from 5 to 6 feet on Major Collector streets.	13-10-002-01 Table	2 Research state of the practice 3 Internal discussion 4 PAC - TC - CIAL review

	Increase bicycle lane width from 4 to 6 feet for Rural Major Arterial, Minor Arterial, Major Collector, and Minor Collector Streets.	13-10-002-01 Table	1 Draft revised detail
	Develop arterial and collector cross section drawings for two lane roads - standard details currently only show four lane sections		1 Draft revised detail
	Clarify situations or circumstances where parkways can be waived; add requirements for mitigations, like a wider sidewalk, when parkways are waived.	13-10-011-01 Table	2 Research state of the practice 3 Internal discussion
Turn out detail	Revise detail to show a short, paved section where unpaved driveways connect to public streets.	13-23: 10-10-031 Detail	1 Draft revised detail
			Process steps… 1 Draft revisions 2 Research state of the practice 3 Internal discussion/review 4 Commission/committee review
Proposed Round 3 Revisions			
Change	*Summary*	*Code sections*	*Next steps*
MAG standards	Review MAG standards for applicability and conformance to ATMP, Housing Plan, and Carbon Neutrality Plan.	13-01-002-0001 A.2	
Agency controls and reviews	Review outside documents referenced in this section to better resolve "apply when applicable" condition.	13-01-002-0001 B	
Transportation impact analysis	Revise TIA process to allow pedestrian, bicycle, and transit improvements as mitigation and to consider transportation impact fees in lieu of mitigation requirements. Review process for consistency and reasonableness.	13-05-002-0003	
Alleys	Reconsider standards and cross sections for alleys.	13-10-005-0001 A-B	
Driveways and private streets	Establish clear definitions to differentiate driveways from private streets; draft appropriate standards for each.	13-10-010-0001	
Fire access standards	Evaluate impact of Fire Safety Standards on street design and pedestrian and bicycle accommodation.	13-13-004 13-10-011-01 Table	
FUTS standards	Consider next round of standards revisions for FUTS trails, including drainage features.	13-14-002	
Level of service	Incorporate level of service guidance to eliminate reliance on ADOT standards and allow more thoughtful application.		
Street cross sections	Comprehensive review of current street cross section standards.	13-10-011-01 Table	
Traditional Neighborhood Design street standards	Consolidate TND street standards into typical street standards to create one set of standards.	13-10-012	
Bike lanes and bikeways	Develop standards and details for a variety of new bikeway facility types, such as buffered bike lanes, separated bikeways, and protected intersections; review dimensions and applicability of conventional bike lanes in current standards.	13-10-011-01 Table 13-14-001	

Sidewalks and pedestrian realm	Revise standards to reflect zones of the pedestrian realm - buffer, furnishing, through, and frontage zones; review sidewalk and parkway widths and applicability in current standards.	13-10-011-01 Table 13-14-001
On-street parking	Consider adding on-street parking to arterial and collector streets; review current standards for on-street parking on residential streets.	13-10-011-01 Table
Context	Expand the use of context in standards for cross sections, geometry, and networks; use the Regional Plan to define and map urban, suburban, and rural contexts, and activity centers.	
Street geometry	Comprehensive review of street geometry standards, beginning with a consideration of appropriate design/target/posted speeds by context and functional class.	13-10-011-01 Table
Street network	Review of standards and guidance for street networks, including the hierarchy of locals, collectors, and arterials, street patterns, grid spacing, and cul-de-sac, and connectivity.	13-10-002-0001
Traffic calming	Review and revise current standards and guidance for traffic calming practices and techniques.	13-10-011-02 Table
Turn lanes and pullouts	Review warrants and practices for right turn lanes, left turn lanes and dual lefts, and bus pull outs, consider impacts on walking and biking, incorporate context considerations.	13-10-010-0002

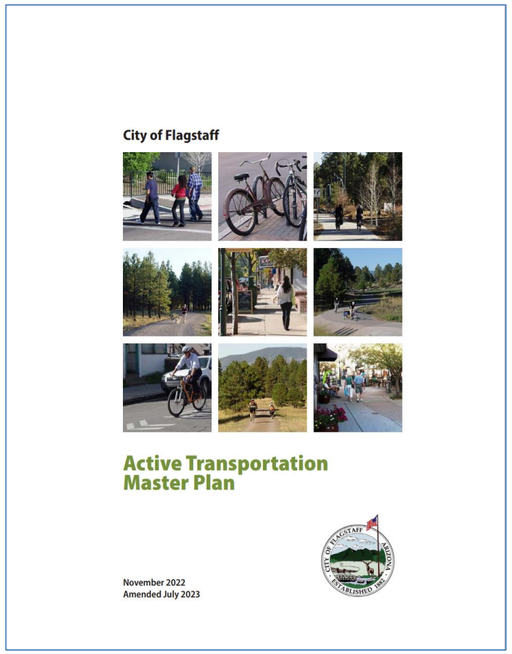
MOVING THE NEEDLE

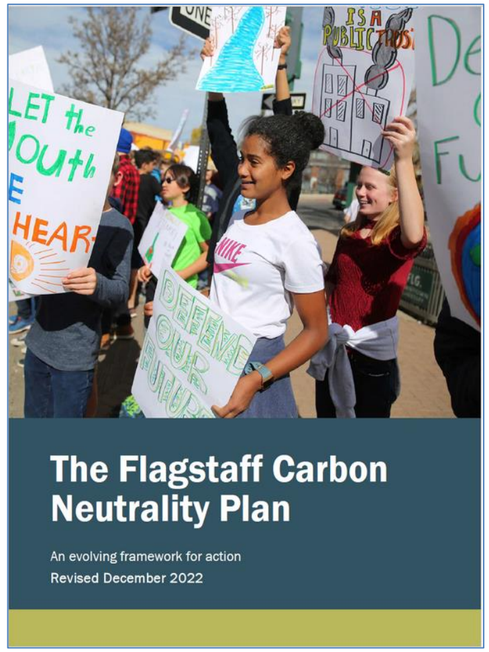
ACTIVE TRANSPORTATION MASTER PLAN

THE CARBON NEUTRALITY PLAN

THE 10-YEAR HOUSING PLAN

September 10, 2024







DISCUSSION

1. The on-going conversation
2. Assessing conditions
3. Moving forward:
    a. Active Transportation Master Plan
    b. Carbon Neutrality Plan
    c. Ten-Year Housing Plan

1.

THE ON-GOING CONVERSATION

THE ACTIVE TRANSPORTATION MASTER PLAN

Several overarching goals:

- Create an inclusive and equitable transportation system.
- Recognize that people who travel on foot, by bicycle, or by transit are legitimate users of the transportation system and deserving of the same considerations as motorized users.
- Ensure that safety and accommodation for vulnerable road users, including pedestrians and bicyclists, is a primary consideration in planning.
- Provide a range of functional and attractive transportation options.
- Build networks for walking and biking that are continuous, attractive, safe, comprehensive, and convenient.
- Reduce the demand for single-occupancy vehicle use and increase options for walking, biking, and transit as a fundamental approach to transportation planning.

THE CARBON NEUTRALITY PLAN

Goal One:

Achieve carbon neutrality by 2030.

Goal Two:

Prepare Flagstaff's communities, systems, and resources to be more resilient to climate change impacts.

Goal Three:

Address climate change in a manner that prioritizes those most impacted and ensures the costs and benefits of climate adaptation and mitigation are equitably distributed.

THE 10-YEAR HOUSING PLAN

Overarching Goal:

Reduce the current affordable housing need in or community by half over the next ten years

Element One:

Impact at least 6,000 low-to-moderate income Flagstaff residents through a combination of unit creation or subsidy provision.

Element Two:

Create or preserve 7,976 housing units by 2031 with a minimum of 10% of them being affordable. This will increase the overall supply of market rate, workforce, and affordable housing occupied by local residents.

THE SOLUTION

A holistic, strategic approach to address complex challenges and needs, under changing conditions.

THE CHALLENGE

All plans necessitate comprehensive shifts. Staff is working to create a strong and sustainable foundation for action that better aligns City goals with City procedures, City Code, and internal operations while honoring the needs and voices of the Flagstaff community.

2.

ASSESSING CONDITIONS

Analyze
Understand what is needed

Improve
Remove barriers, create opportunity

Act
Moving forward collectively

Continuous Feedback Loop
Acknowledge changing conditions



THE APPROACH

Touching the Surface

These three plans intersect with several City processes, procedures, plans, and codes.

- City Budget
- City/Division Procedures
- Engineering Standards
- Regional Plan
- Building and Fire Code
- Zoning Code
- Procurement Code
- Plumbing code
- Community Wildfire Protection Plan
- City Wide Forest Stewardship Plan
- Water Services Int. Master Plan
- Water Conservation Strategic Plan
- Stormwater Strategic Plan
- All Hazards Emergency Operations Plan
- etc...

3.

MOVING FORWARD

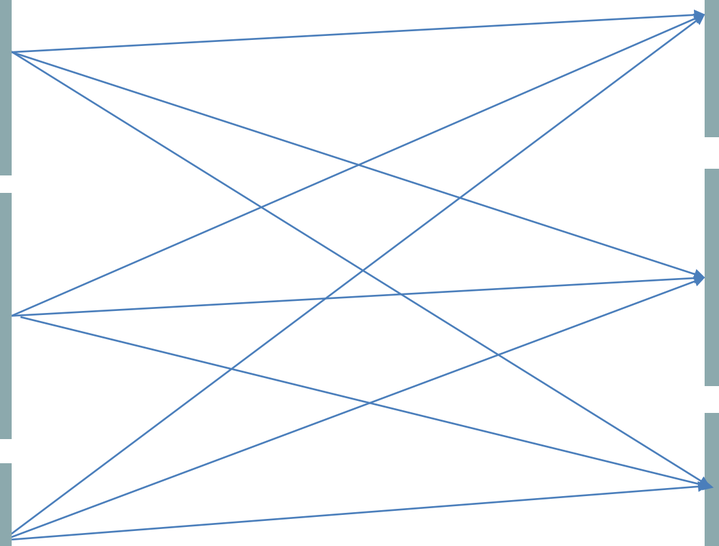
HIGH LEVEL REVIEW OF PLANNED EFFORTS

This review provides a snapshot of planned work over the next **12 months** to move the needle.

City Engineering

Community Development

Sustainability



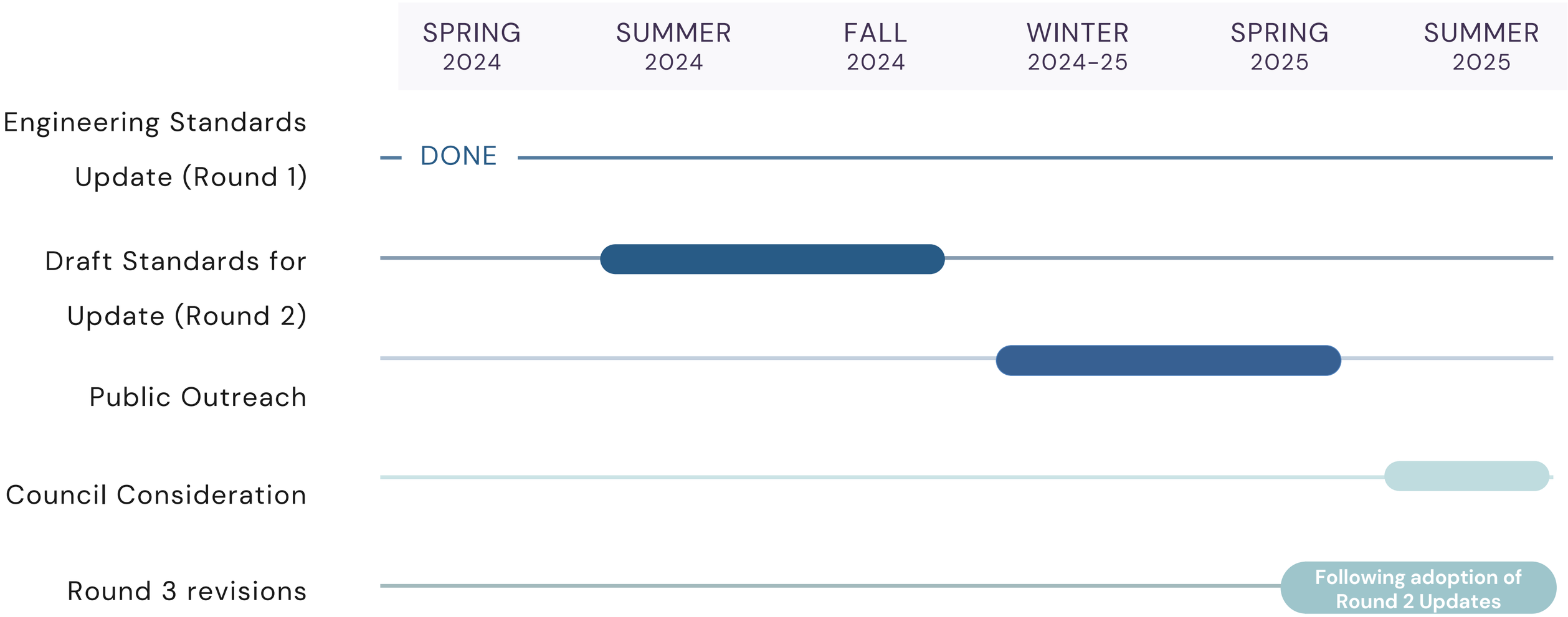
Capital Engineering, Development, Engineering, and Transportation

Building Safety, Comprehensive Planning, Current Planning, and Housing

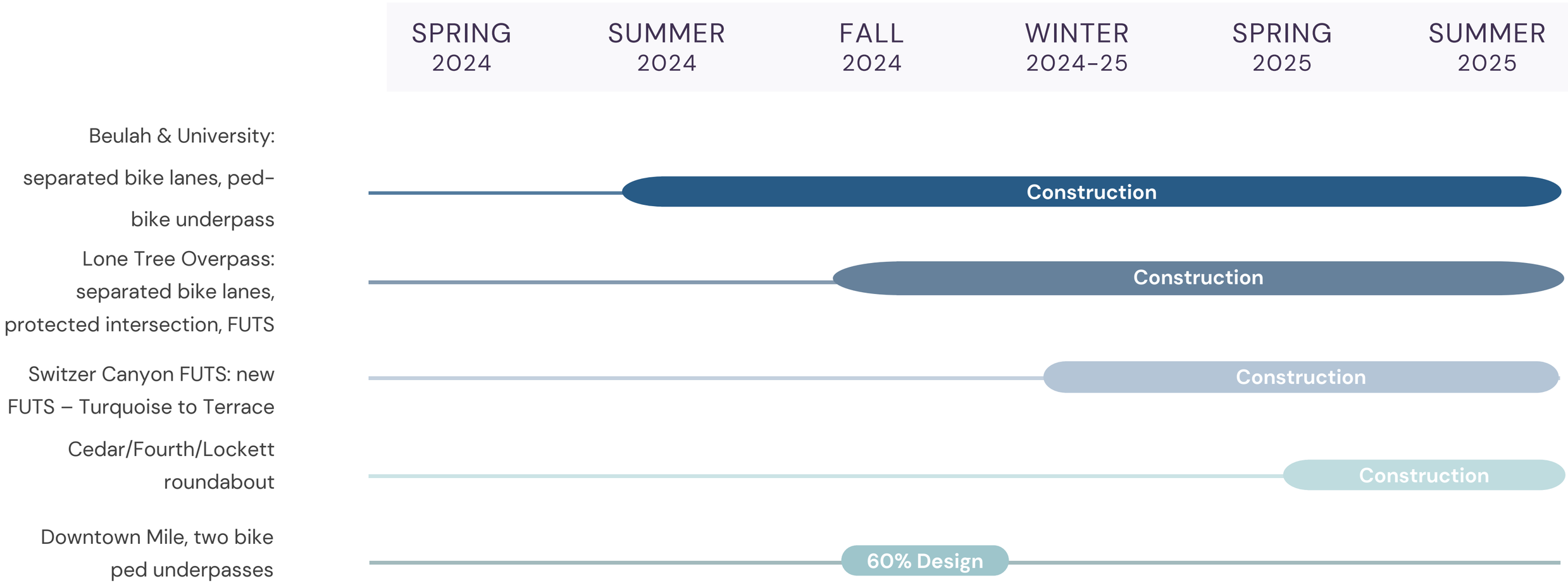
Climate Action

City of Flagstaff

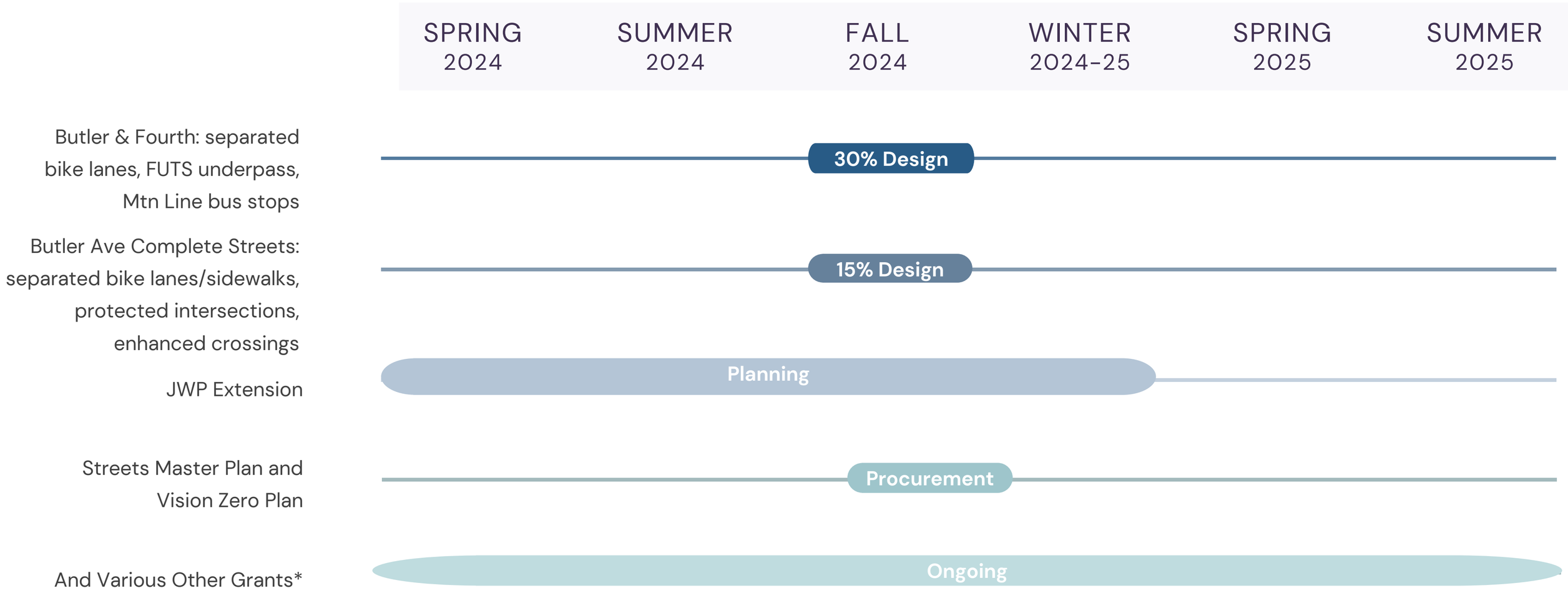
City Engineering - Standards Update (ATMP)



City Engineering – Capital Projects Update (ATMP)



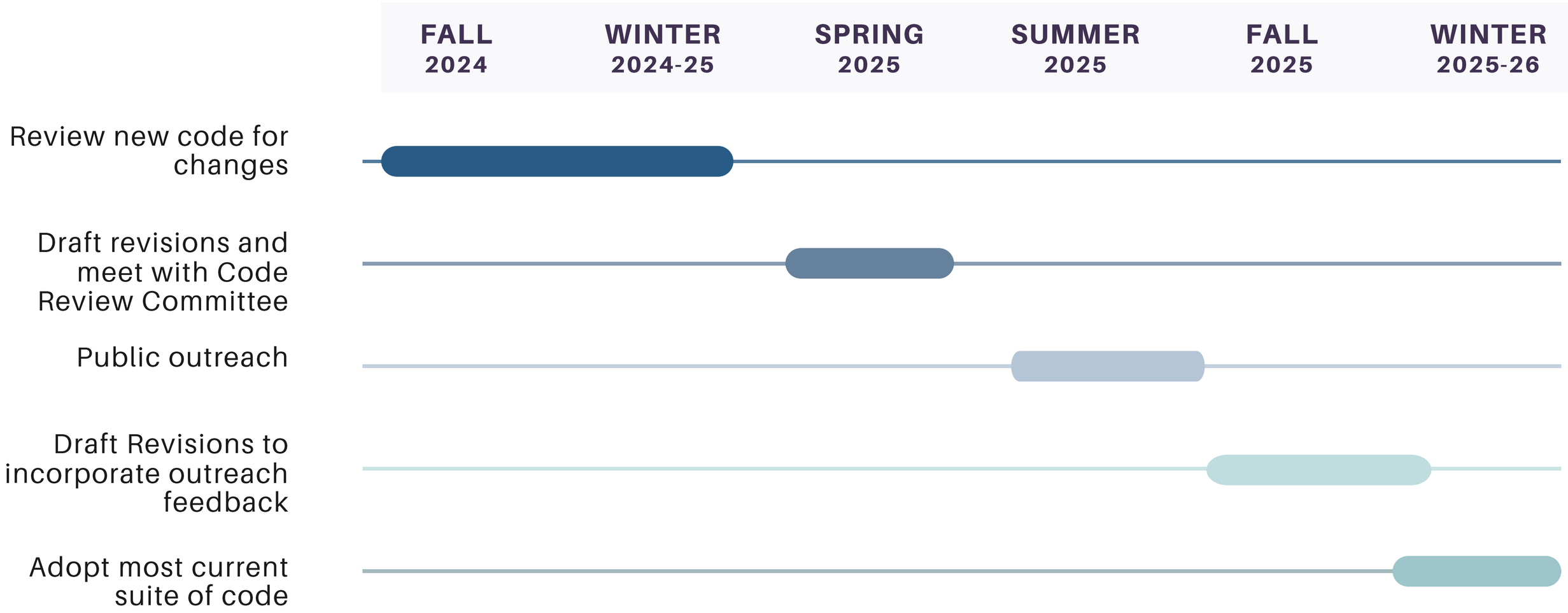
City Engineering – Capital Projects Update (ATMP)



*Awarded: First Mile Last Mile, Transportation Alternatives Safe Routes to School

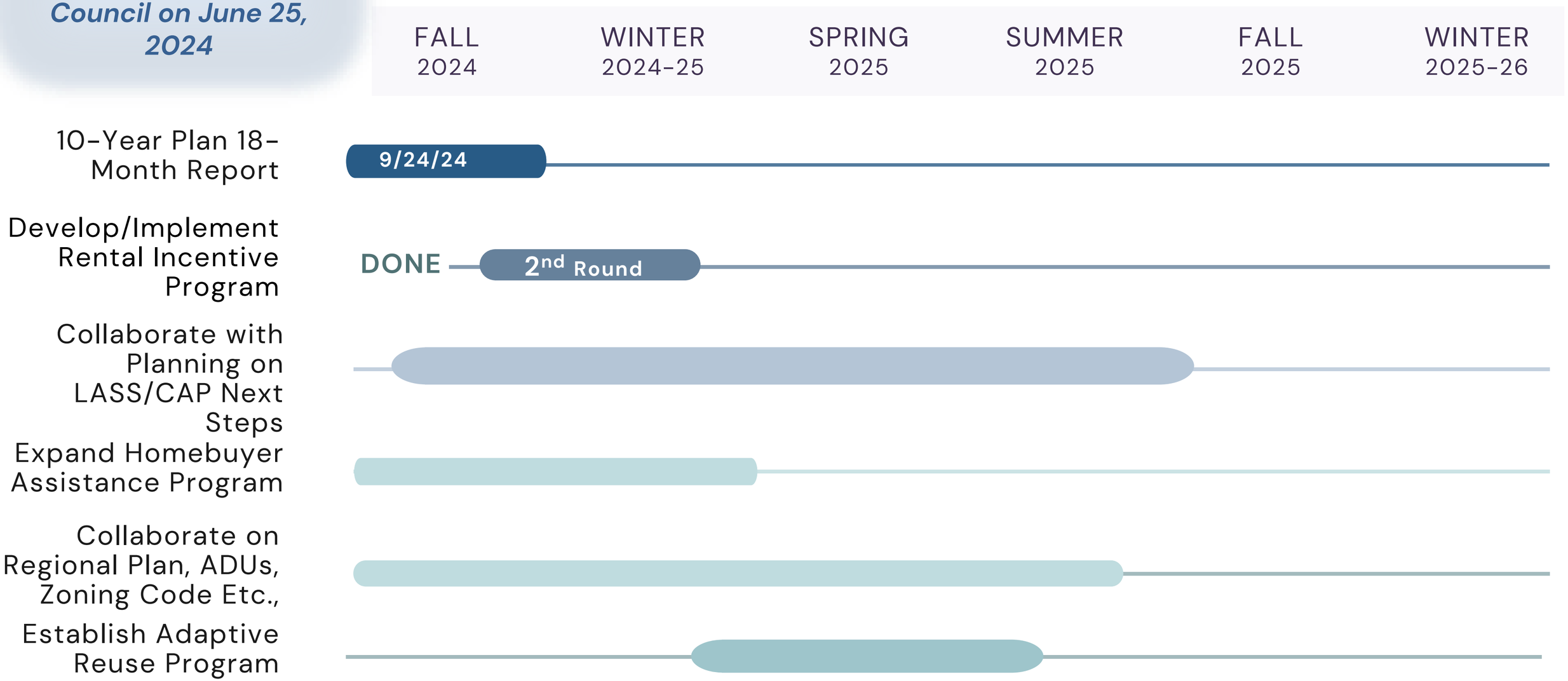
*Submitted: RAISE – Butler/Fourth, SS4A Ped-bike concept planning, ATIIP Milton/Santa Fe bikeways planning

Community Development – Building Safety

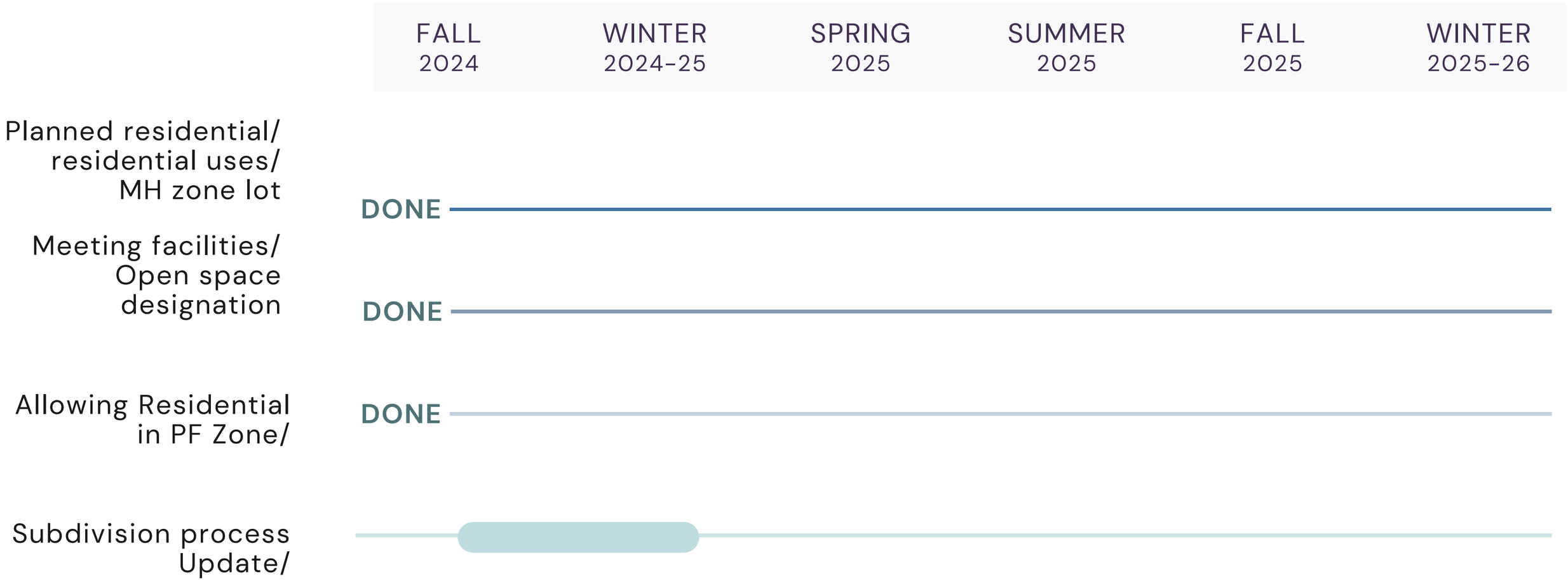


Community Development – Housing

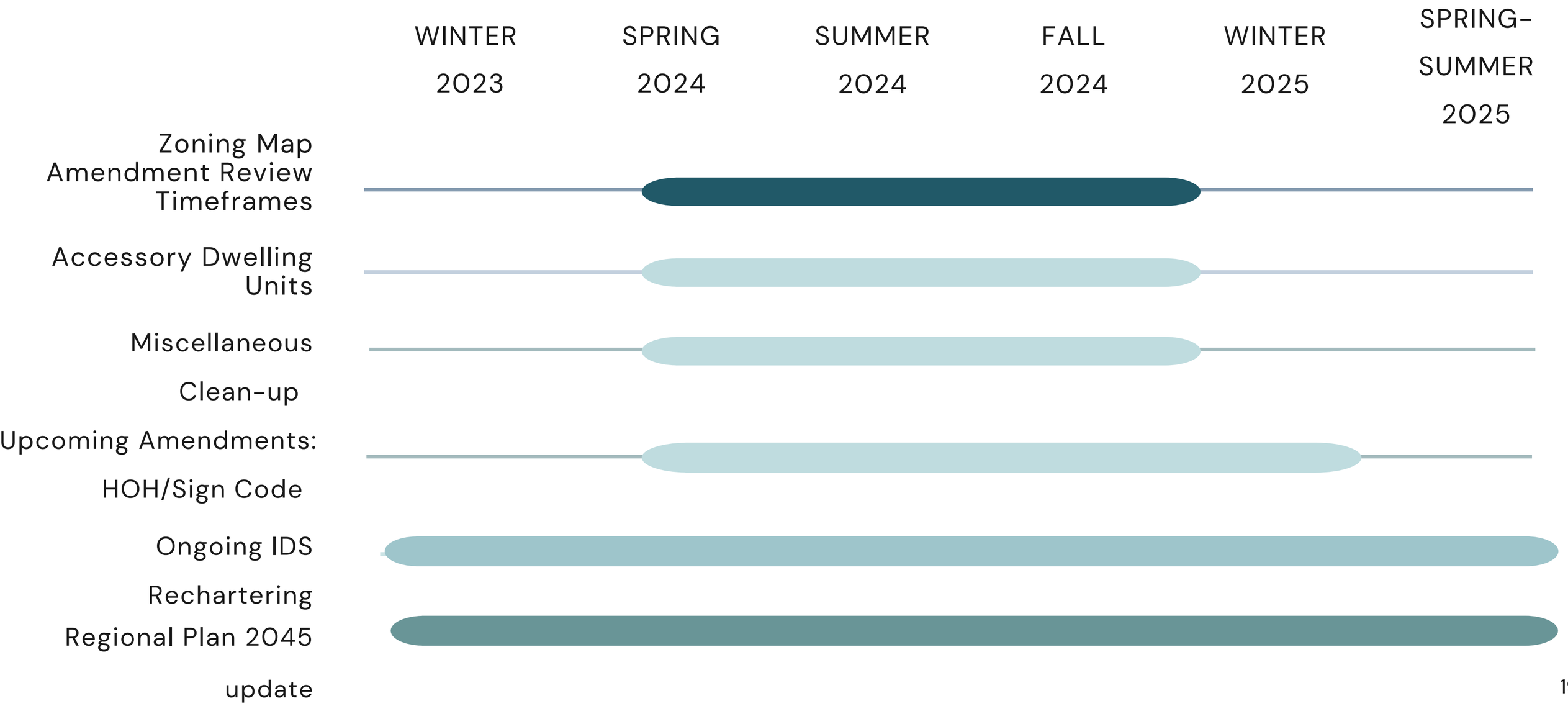
24/25 Implementation Plan presented to Council on June 25, 2024



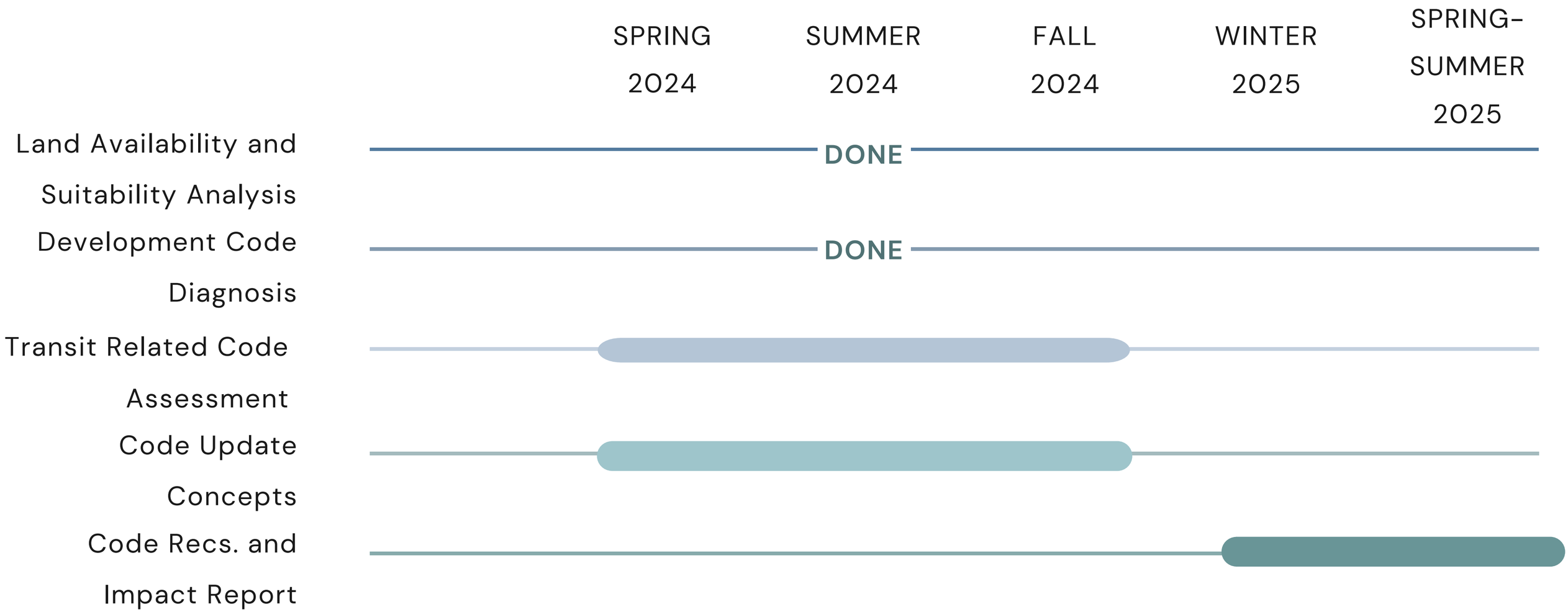
Community Development – Planning



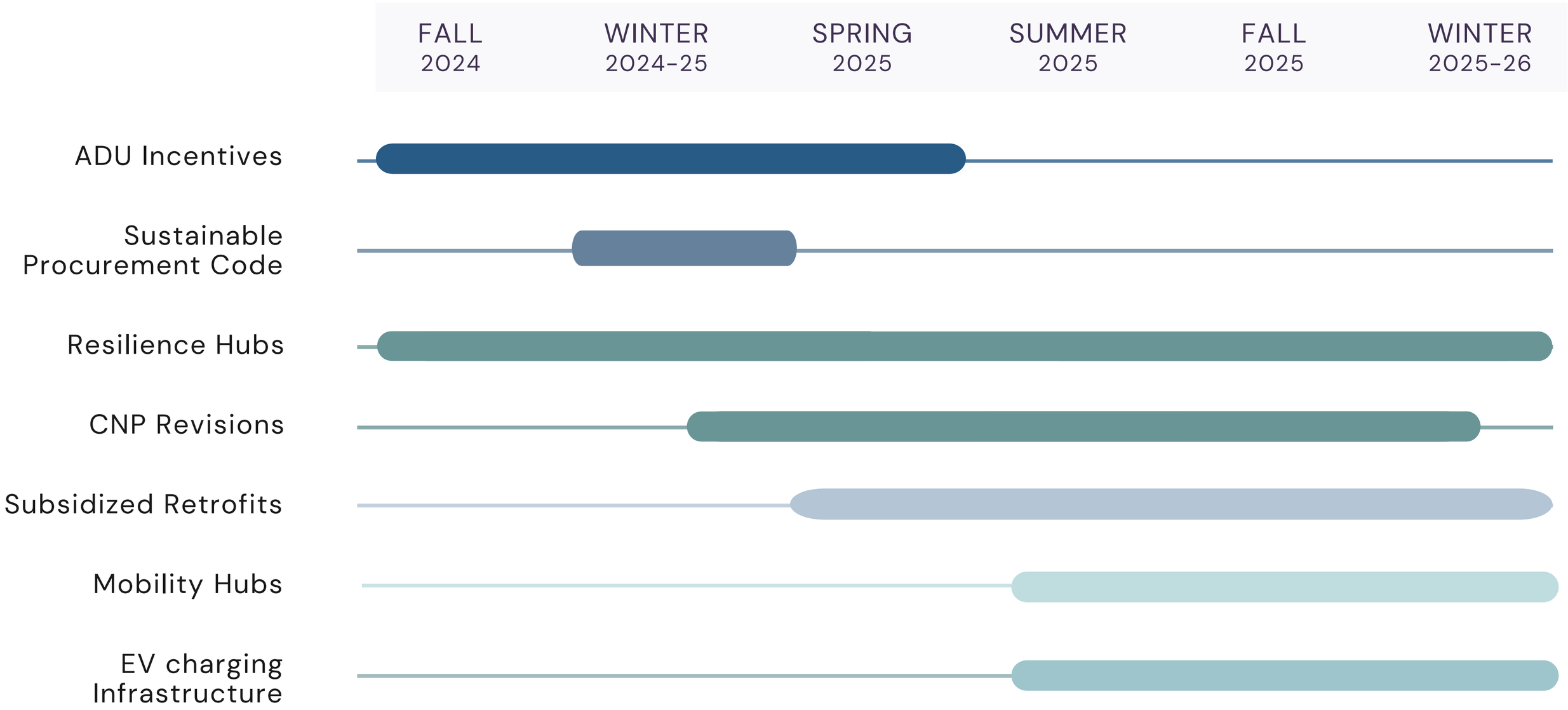
Community Development – Planning



Community Development - Planning



Sustainability - Climate Action



THANK YOU

Question?