

Planning for Resilience: Updating the Okanogan County Sub-Unit A Plan for a Sustainable Future



By Annika Weber, Emma Fehr, & Maaya Watanabe

UEPP 471: Sustainability Planning Studio

**SUSTAINABILITY
PATHWAYS**



Table of Contents

1. Executive Summary.....	3
1.1. Problem Statement	
1.2. Description of Project	
1.3. Summary of Recommendations	
2. Introduction.....	4
2.1. Background	
3. Methodology.....	8
3.1. Benchmarking & Supplemental Research	
3.2. Interviews	
3.3. Surveys & Survey Results	
4. Results.....	14
4.1. Climate	
4.2. Wildfire & Air Quality	
4.3. Water	
4.4. Light & Glare	
4.5. Population & Commerce	
4.6. Utilities, Facilities, & Services	
4.7. Land Use	
5. Recommendations.....	36
5.1. Climate	
5.2. Wildfire & Air Quality	
5.3. Water	
5.4. Light & Glare	
5.5. Population & Commerce	
5.6. Utilities, Facilities, & Services	
5.7. Land Use	
5.8. Collaboration with Youth & Student Groups	
6. Monitoring and Evaluation.....	44
7. Budget.....	45
8. Conclusion.....	47
9. Acknowledgements.....	48
10. References.....	49
11. Appendix.....	54
11.1. Appendix A	
11.2. Appendix B	

1.0 Executive Summary

1.1 Problem Statement

The Sub-Unit A Plan, an addendum to the Okanogan County Comprehensive Plan, is the next iteration in a long history of community engagement in Upper Methow Valley land-use planning. Existing conditions and population projections in the plan have not been updated since 2014. New topics need to be added, such as more frequent wildfires and a growing recreation sector.

1.2 Description of Project

This project is a collaboration with the Mazama Advisory Committee (MAC) and the Okanogan County Planning Department. Our project provides updated data and recommendations for the Sub-Unit A Plan according to their needs and in alignment with the 2021 Okanogan County Comprehensive Plan. This updated information enables the MAC to rewrite and reformulate the 2014 Sub-Unit A Plan as necessary. Tammi Laninga, Associate Professor in the WWU Urban and Environmental Planning & Policy Department, sponsored the project. She and Joshua Porter, WWU Sustainability Pathways Director, provided extensive support and feedback throughout.

1.3 Summary of Recommendations

Our policy recommendations focus on climate mitigation and adaptation, wildfire management, water conservation, land use, and youth engagement. Key policies include increasing public transportation, establishing heating and cooling centers, promoting fire-resistant materials in new constructions, and conserving water resources. The recommendations also emphasize the importance of integrating climate considerations across all planning elements, and propose collaboration with local stakeholders, including youth, to ensure inclusive and effective governance. Additionally, more frequent data monitoring would allow the MAC to track progress and adapt strategies over time.



Source: Annika Weber

2.0 Introduction

As an interdisciplinary group project associated with Western Washington University (WWU) Sustainability Pathways program in the Methow Valley, Washington, we are updating conditional and forecast elements of the [Sub-Unit A in the Okanogan County Comprehensive Plan](#). The update invites Upper Valley residents to honor a long history of responsibility to place by shaping the future development of their home. The plan is a legal framework for development and stewardship on the traditional territories of the [spáλmuləxʷəxʷ \(Methow\)](#). The Upper Valley was within the Columbia Reservation established in 1879 and dissolved in 1884. Consistent consultation with the Confederated Tribes of the Colville Reservation will model responsible Government to Government relations and could further promote meaningful participation of the land's original inhabitants. Such engagement could also advance sharing of decision-making power, and efforts to return access to as well as ownership of land.

The plan fulfills the community's present and ten-year planning vision under the Growth Management Act. In the past ten years, the Upper Valley has seen increased frequency and severity of wildfires, a global pandemic, and changes in tourism and recreation. According to the Mazama Advisory Committee (MAC), and community responses in surveys and public meetings, these impacts have generated needs for affordable housing and climate adaptation. The language in the plan should be both accessible to the Upper Valley community and suitable for a public document that will be used to inform laws.

This project more specifically fulfills the needs of the MAC, appointed by Okanogan County officials in 1984 to guide planning for Sub-Unit A, a smaller area with the potential for more localized guidelines and community engagement.

Our work follows the lead of the MAC. Committee member Claire Bunney and WWU Sustainability Pathways planning fellow Sophia White identified data that needed updates since the 2014 publication. We present the updated data in language aligned with the Okanogan County Comprehensive Plan and the 2014 Sub-Unit A Plan. The MAC is most interested in the data itself, which it can rewrite and reformulate, and these data are provided in the Results section. Recommendations include a selected list of policies related to the sections we researched for the MAC. We also received extensive support from Tammi Laninga, Associate Professor in the WWU Urban and Environmental Planning & Policy Department, and Joshua Porter, WWU Sustainability Pathways Director.

We provide recommendations on how planning committees can collaborate with student groups, part of a broader culture of engaging communities in planning and sharing knowledge across generations. We also tracked our data collection process and indicated data monitoring processes that could streamline updates for the next Sub-Unit A Plan.

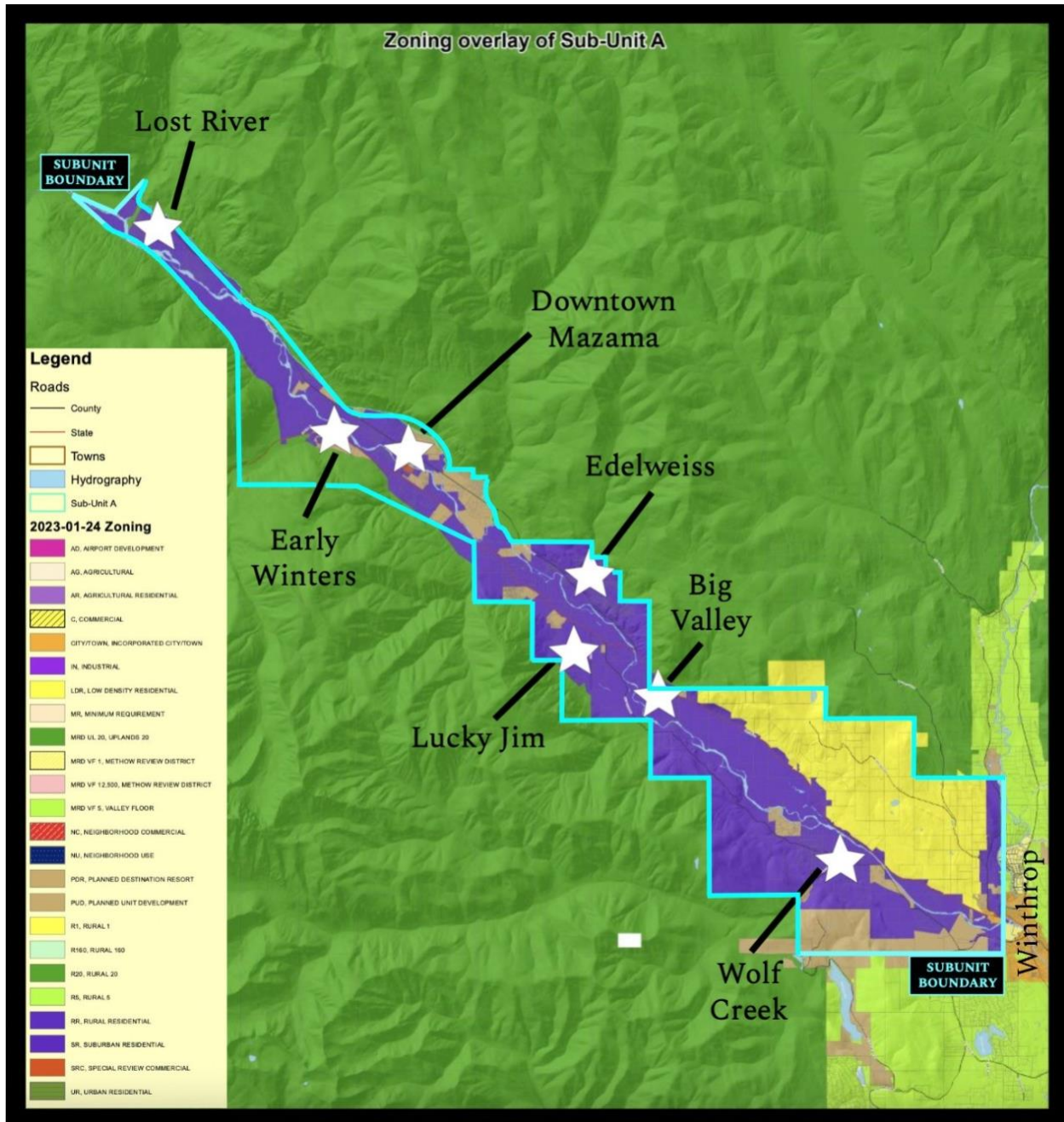


Figure 1. Sub-Unit A Planning Area, 2024. Source: Mazama Advisory Committee.

2.1 Background

[The Growth Management Act](#) is a series of laws initially adopted by the Washington legislature in 1990 that require "fast growing" cities and counties in Washington to maintain a comprehensive plan guiding population growth and associated development. Plans must include goals and policies in 15 areas, including reducing sprawl, accommodating affordable housing,

and protecting and enhancing the environment ([RCW 36.70A.020](#)). [Ninety-five percent of the state's population](#) lives in counties required to “fully plan,” or meet all requirements of GMA statutes. Okanogan County opted out of full planning due to its low population density but includes GMA elements, such as designation, conservation, and protection of resource lands and critical areas (Figure 2). [The Washington State Department of Commerce](#) helps counties and cities form and implement comprehensive plans.

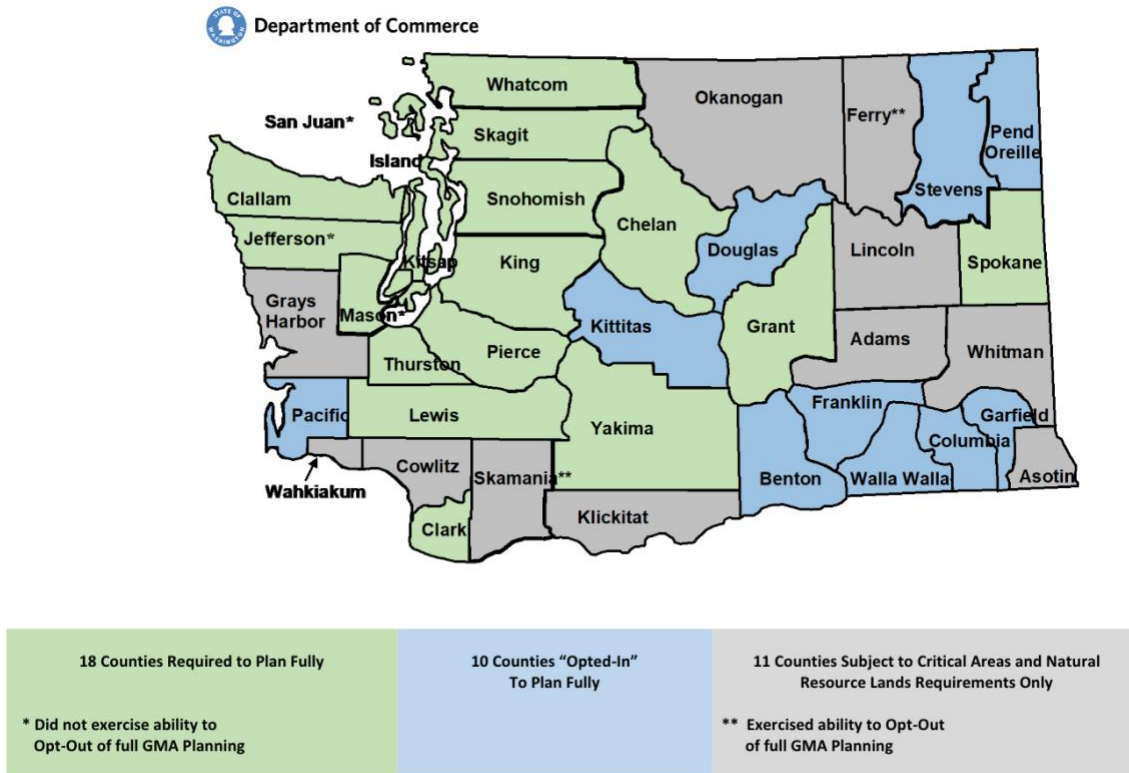


Figure 2. Growth Management Act requirements for Washington counties.

Planning areas are permitted to include subarea plans if their goals and policies align with those of the larger planning area ([RCW 36.70A.080\(2\)](#)). Okanogan County appointed the Mazama Advisory Committee in 1984 to guide local planning decisions after [successful community organizing prevented construction of an Aspen Corporation ski resort](#) that would have altered the development trajectory of the Upper Valley by installing lifts and lodging for 10,000 skiers per day. The goals and policies in the Sub-Unit A Plan must align with the Okanogan County Comprehensive Plan, last adopted in 2021, and the planning process is supported by County Planning Director Stephanie (Pete) Palmer.

Subarea plans enable localized guidelines within the enforcement mechanisms of county law. For example, the King County Code enforces goals and policies from the King County Comprehensive Plan, which includes Seattle, the largest city in the state, and from 11 subarea plans, including [six rural Community Service Areas](#) and [five "urban potential annexation areas."](#)

County-wide planning relates rural and urban development; subareas acknowledge that communities facing real or potential rapid population growth and other development pressures require supplemental planning beyond the county level.

From 2020-2023, the Methow Valley’s total population increased by 3.8 percent each year along with a 33% increase in developed residential parcels from 2005-2020. In Mazama, 50% of private parcels are developed but the Upper Methow still maintains the greatest percentage of protected private land (26.6%) and protected agricultural land (27.2%). Given increasing post-pandemic development pressures, climate change, and Mazama’s unique history of community engagement in planning, the 2024 update is more necessary than ever, both for Sub-Unit A and for the whole Methow Valley.



Source: Benjamin Drummond (and cover photo)

3.0 Methodology

The team relied on benchmarking, interviews, and responses from a community survey to fulfill data collection needs. Benchmarking is a research methodology that involves evaluating something by comparison with a standard. Benchmarking enabled us to gather and compare data sources used by various comprehensive plans that address regions, issues, and populations like Sub-Unit A. We also used benchmarking to familiarize ourselves with formatting, language, and content that could be adapted to the Sub-Unit A Plan. We interviewed stakeholders whose positions allowed them to provide supplementary information less accessible via online resources, including wildfire trends and strategies for local water management. In addition, we attended the MAC's initial public meeting and introduced public input from the community survey developed and distributed by planning fellow Sophia White and the Mazama Advisory Committee. The survey allowed members of the Sub-Unit area to contribute their perspectives to the document that will inform planning in the Upper Valley for the next ten years.

The MAC asked us to research elements 4.0 Existing Conditions—including 4.1 Upper Valley Landscape, 4.2 Sensitive Environmental Features and 4.3 Human Environment—and 5.0 Forecasts. The existing conditions element provides details on the current natural and built environment within the Sub-Unit area, while the forecast element describes population growth trends and projections for the region.

3.1 Benchmarking

The benchmarking process included reviewing other comprehensive plans for sources that might provide updated data for each element. These other plans modeled potential layouts and language suitable for a government document and accessible by community members. The four model plans we selected were the 2021 Okanogan County Comprehensive Plan, 2017 City of Chelan Comprehensive Plan, 2017 Vashon Island Sub-Area Plan, and the 2022 Skyway West Hill Subarea Plan. These plans were selected because they share similarities with the Sub-Unit A Plan in one or more of the following elements: existing conditions; forecasts; transportation and circulation; and facilities, utilities, and services.

Table 1. Benchmarking

	Linked Sources by Element			
Plan	Existing Conditions	Forecasts	Transportation & Circulation	Facilities, Utilities, Services
<i>2021 Okanogan County Comprehensive Plan</i>	<u>Shoreline Master Program, Water Resource Inventory Area 48, Critical Areas Chapter 36.70A RCW,</u> Okanogan County Comprehensive Land Use Map, land management agencies	<u>Office of Financial Management,</u> Federal Emergency Management Agency Flood Insurance Rate Maps	<u>2040 Regional Transportation Plan, Transportation and Essential Public Facilities Map, Okanogan County Public Works Department, Federal Highways Administration</u>	Capital Facilities Plan
<i>2017 City of Chelan Comprehensive Plan</i>	Washington State Office of Financial Management, <u>City of Chelan Shoreline Master Program,</u> Washington Department of Fish and Wildlife (WDFW), Washington Department of Natural Resources, <u>FEMA National Risk Index</u>	Washington State Office of Financial Management, <u>Chelan Community Planning Assistance for Wildfire,</u> <u>Chelan Parks Vision 2030,</u> <u>Lake Chelan Watershed Plan</u>	<u>Chelan County Multimodal Pathways Plan,</u> Washington State Department of Transportation, North Central Washington Regional Transportation Planning Organization, SCJ Alliance	<u>City of Chelan General Sewer Plan,</u> Chelan County PUD, <u>Chelan Capital Facilities Plan</u>

<p>2017 Vashon-Maury Island Sub-Area Plan</p>	<p><u>King County Zoning Code (Title 21A)</u>, King County Farmland Preservation Program, <u>Vashon-Maury Island Water Resources Study</u>, <u>Vashon-Maury Island Ground Water Management Plan</u>, <u>Vashon-Maury Island Watershed Plan</u>, <u>Vashon-Maury Island Hydrologic Modeling</u>, WA Department of Ecology</p>	<p><u>US Census Bureau, 2021 Urban Growth Capacity Report</u>, <u>Vision 2040</u>, King County Flood Control District, Federal Emergency Management Agency, <u>King County Hazard Mitigation Plan</u></p>	<p><u>King County Strategic Plan for Public Transportation</u>, <u>King County Long Range Plan for Public Transportation</u>, <u>King County Ferry District Strategic Plan</u>, <u>King County Strategic Plan for Road Services</u>, <u>King County Transportation Needs Report</u></p>	<p>Environmental Health Services Division of Seattle-King County Public Health, King County Department of Natural Resources and Parks Solid Waste Division, Vashon-Maury Island Sewer District, <u>On-Site Sewage System Management Program</u></p>
<p>2022 Skyway-West Hill Subarea Plan</p>	<p><u>King County Zoning Code (Title 21A)</u>, <u>King County Open Space Plan</u>, <u>30-Year Forest Plan</u>, <u>Skyway-West Hill Land Use Strategy</u></p>	<p><u>US Census Bureau 2020 American Community Survey Five-Year Estimates</u>, <u>2021 Urban Growth Capacity Report</u></p>	<p><u>King County Strategic Plan for Road Services</u>, <u>King County Strategic Plan for Public Transportation</u>, <u>King County Long Range Plan for Public Transportation</u>, <u>King County Transportation Needs Report 2020</u>, <u>King County ADA Transition Plan and Accessibility Services</u></p>	<p><u>Skyway Water and Sewer District</u>, <u>Seattle Public Utilities</u>, <u>King County Capital Facilities and Utilities</u></p>

3.2 Interviews

We prioritized interviews with stakeholders informed on wildfire, water management, and climate change. Based on input at the Mazama Advisory Committee’s initial public meeting and the increase in wildfire events and drought due to climate change we expected these elements would require the most updates. There is very limited discussion of wildfire, for instance, in the 2014 report. We also selected stakeholders who could supplement our research and through consultation with Tammi Laninga and Joshua Porter. A copy of the questions for each interview is included in Appendix A.

Dr. Susan Prichard, wildfire ecologist, School of Environmental and Forest Sciences, University of Washington

Susan Prichard is a local wildfire and forest ecologist and research scientist at the University of Washington’s School of Environmental and Forest Sciences for the last 20 years. As a long-time resident of the Methow Valley, Susan has valuable knowledge about the history of local large-scale fire events and their impacts on the landscape and community health and resilience. She studies the effects of wildfire on forest dynamics, how climate change impacts forests and fires, and options for mitigating wildfire impacts through fuel treatments, including prescribed burns and thinning. Some of her most recent published research includes “Evidence for widespread changes in the structure, composition, and fire regimes of western North American forests” (2021) and “The REBURN model: simulating system-level forest succession and wildfire dynamics” (2023). She has a PhD in Ecosystem Science from the University of Washington’s College of Forest Resources.

We interviewed Susan to identify high-risk areas within the Sub-Unit boundaries, gather key data and anecdotes about current wildfire impacts compared to ten years ago and ten years in the future, and understand strategies to enhance community resilience and manage wildfire impacts. The areas she identified as high risk included Edelweiss (lack of safe egress, need for thinning and fuel reduction), the Lost River Corridor (prone to drought stress, need for thinning and fuel reduction), and Fawn Meadow Lane/Kumm Road (prone to post-fire debris flows and flooding).

Susan recommended the Sub-Unit A Plan emphasize hotter, drier summers and more severe wildfire seasons. She stressed the deep mental and physical impacts of fire and smoke events on local communities. Prescribed fires are still essential to preventing large-scale wildfire and smoke events.

Dr. Amy Snover, Former Director of the University of Washington Climate Impacts Group

Amy Snover advised on climate impacts for the Methow Valley Climate Action Plan. She worked for the UW Climate Impacts Group for 20 years and served as the director for 10. The Climate Impacts Group “builds climate resilience by advancing understanding of climate risks and enabling science-based action to manage those risks.” In our interview, Amy emphasized the importance of *relevant* climate research, which to her means building mutually beneficial relationships between scientists and decision-makers where research enables the actions that matter to a specific community and are within their power. She is the author of *Preparing for Climate Change: A Guidebook for Local, Regional, and State Governments* (2007) and “Pacific Northwest Regional Assessment: The impacts of climate variability and climate change on the water resources of the Columbia River Basin” (1999). She holds a PhD in Analytical/Environmental Chemistry from the University of Washington.

We interviewed Amy to understand how each Sub-Unit element intersects with climate change and with each other, key data and anecdotes about current climate impacts compared to ten years ago and ten years in the future, and resiliency strategies she has observed in other communities and comprehensive plans. The research areas the MAC identified, including water and wildfire, led us to investigate adaptation strategies. We also discussed mitigation actions like electrification and efficiency to be incorporated into utilities and architectural elements.

Amy recommended we incorporate climate mitigation and adaptation into both a discrete section and into other elements: “mainstreaming” acknowledgement of climate change. Amy offered the [King County Comprehensive Plan](#) as a model of successful climate change incorporation. She recommended we model water policies after the actions of other desert communities.

3.3 Survey

A community survey was developed and distributed by planning fellow Sophia White to receive input from residents and stakeholders that would inform the MAC’s recommendations. The responses most relevant to our assigned elements were sent to us and integrated into the policies in our recommendations section. A copy of the survey questions is included in Appendix A.

Some major areas of concern identified by Sub-Unit residents included:

- **Affordable Housing:** Many residents voiced concerns about rising housing costs and the need for affordable housing for locals. Some suggested that new developments should include workforce housing solutions.
- **Conservation & Preservation:** Many residents conveyed their appreciation of the rural character and natural beauty of the Sub-Unit area and a desire to preserve it. Some recommended strategies included limiting commercial development, protecting dark skies, enforcing zoning laws, and preserving wildlife corridors.

- **Growing Population & Tourism:** Many residents expressed concerns about increasing population density and overcrowding from tourism that place pressure on local resources. They stressed a need for better management of recreational tourism impacts and for infrastructure to better accommodate visitors and residents.
- **Infrastructure Improvements:** Residents indicated a need for better transportation and parking infrastructure within the Sub-Unit area. Suggestions included expanded public transportation, better parking facilities, and safer bike trails.
- **Climate Change Impacts:** Residents expressed worries about the impacts of climate change, including increased prevalence of wildfires and decreased water availability. They emphasized the importance of strategies to manage these issues effectively.



Source: Annika Weber

4.0 Results

Results will include a summary of research for each data point requested by the MAC:

4.# Topic (e.g. wildfires, water availability, utilities)

Relevant section:

Data requested:

2014 data: (if applicable)

Data found:

Sources:

More information: (if applicable)

4.1 Climate



Relevant section: 4.2 Sensitive Environmental Features: Climatic Condition

Data requested: Current precipitation averages.

2014 data: Mazama receives an “annual average amount of about 24 inches while Winthrop receives only about 15 inches per year... Eighty percent of the precipitation falls between October and March” (14).

Data found: Between 2006 and 2020, Mazama received on average 23 inches per year and Winthrop received on average 15.5 inches per year.

Sources: [NOAA U.S. Climate Normals](#)

More information: [NOAA/National Weather Service Methow Valley Time Series Viewer](#)

Table 2. Temperature and precipitation averages for Mazama, WA (NOAA)

Season	● MAX TEMP (°F)	● MIN TEMP (°F)	● AVG TEMP (°F)	● PRECIP (IN)
Annual	56.6	34.2	45.4	23.31
Winter	30.8	16.1	23.4	10.01
Spring	56.8	33.2	45.0	4.31
Summer	82.3	53.1	67.7	1.82
Autumn	56.5	34.5	45.5	7.17

4.2 Wildfire & Air Quality



Relevant section: 4.2 Sensitive Environmental Features: Wildfire



Data requested: New “Firewise” management practices (e.g. prescribed burns on public land, private thinning)

Data found:

- As per the Firewise website, seven communities/associations within the Sub-Unit area are listed as Firewise participants: Chechaquo Ranch, Edelweiss, Foster Guest Ranch PD, Kumm Road, Liberty Woodlands Homeowners Association, Lost River Airport Association, and Wilson Ranch Association.
- Structural Fireproofing Practices:
 - Removing combustible materials stored beneath decks and enclosing space with metal skirting or 1/8-inch metal mesh.
 - Routinely removing leaves/needles/debris from roofs, gutters, vents, and decks.
 - Moving flammable materials away from exterior walls.
 - Repairing/replacing damaged window screens, windows, and roof tiles/shingles.
 - Installing 1/8-inch mesh screenings on eaves/attic vents.
 - Creating 6 inches of vertical non-combustible plane at base of exterior walls (metal sheeting, stucco, stone, etc.).
 - Creating defensible space around structures
 - Zone one (0-5 feet from structure): Keeping area well-irrigated and free of flammable vegetation and combustible landscaping materials.
 - Zone two (5-30 feet from structure): Reduce vegetation density and increase tree and shrub spacing through thinning. Regularly remove dead plants, leaves, and pine needles.
 - Zone three (30-100 feet from structure): Reduce vegetation density and remove lower branches to reduce ladder fuels. Perform regular maintenance of fuel breaks (driveways, pathways, lawns, etc.).
- Land management practices:
 - Regularly spraying and mowing roadsides
 - Laying gravel in parking areas
 - Placing land into cultivation (use of fire-resistant crops and irrigation)
 - Land thinning/clearing of ladder fuels and downed wood
 - Prescribed burns
- Okanogan Conservation District Protection Plan Actions Draft includes a high priority action to restore Forest Service lands in the Upper Methow Valley (60,000 acres around Mazama including Goat Creek, Cub Creek, and Fawn Creek) through "commercial

thinning, small tree thinning, shaded fuel break construction, piling of slash, pile burning, and broadcast burning" (pg. 14) to reduce wildfire severity and reinforce POD boundaries.

Sources: [Firewise USA](#), [Liberty Woodlands Association Management Practices](#), [Lost River Airport Firewise Committee](#), [Okanogan Conservation District Community Wildfire Protection Plan Actions Draft](#)

More information: [Okanogan County Multi-Hazard Mitigation Plan](#)



Data requested: Information on post-wildfire landslides

Data found:

- High-intensity wildfires can damage vegetation and create hydrophobic soils, which leads to loss of ground stability and increased soil erosion. In the years immediately following a wildfire, heavy rain events in these areas can disrupt the soil and rocks, ultimately causing fast-moving debris flows and landslides. These events often occur with little warning and pose threats to downstream vegetation, drainages, structures, and human life.
- A [DNR 2021 geological survey](#) performed using soil burn severity data from the Cedar Creek and Cub Creek 2 fires identified relative debris flow hazards for drainage throughout the burned area ranging from low to high hazard severity. Recommendations were made for landowners and managers to “take action to prevent excessive soil erosion, reduce flooding, and promote revegetation” in areas where moderate and high debris flow severity put infrastructure and residents at risk.

Sources: [DNR Wildfires & Debris Flows](#), [DNR Cedar Creek and Cub Creek 2 Fires Geological Survey Report](#)



Relevant section: 4.2 Sensitive Environmental Features: Air Quality



Data requested: New air quality regulations (especially laws on burning)

Data found:


- Burn bans set by the Department of Natural Resources and the Okanogan County Commissioners/Fire Chief Association restrict outdoor burning (often) during the summer season based on determined wildfire conditions. Most of the Methow Valley’s unincorporated areas are under the jurisdiction of the DNR and Fire Districts #6 and #15, so both sets of restrictions apply.

- On lands regulated by DNR, recreational and debris burning are allowed without a permit if specified conditions are met (when burn bans are not in place). For burns that do not meet conditions, DNR permits are required.
- EPA National Ambient Air Quality Standards are required under the Clean Air Act for major air pollutants. Standards for PM_{2.5} particle pollution, Okanogan county's major air pollutant, are 9.0 µg/m³ per year for primary (public health protection) and 15 µg/m³ per year for secondary (public welfare protection).
- Purple Air air quality monitors exist throughout the Sub-Unit area, which are primarily hosted and maintained by Clean Air Methow [Clean Air Ambassadors](#) and other residents. Real-time air quality readings from these monitors are available on the Purple Air map, accessible through the Purple Air and Clean Air Methow websites.
- The Methow Review District does not impose restrictions on burning or use of wood stoves; however, an incentive feature grants maximum residential density for planned developments if wood-burning devices are prohibited (17A.200.030).
- Wood stoves and wood burning devices are required to meet both Washington and EPA standards for PM_{2.5} limits (Table 3).



Source: Annika Weber

Table 3. Washington Department of Ecology and EPA PM_{2.5} limits for various wood burning devices.

Type of Device	Washington PM _{2.5} Limit	EPA PM _{2.5} Limit
Wood stoves	use EPA limit	<ul style="list-style-type: none"> • 2.0 grams per hour (tested with crib wood)¹ • 2.5 grams per hour (tested with cord wood)
Pellet stoves	use EPA limit	<ul style="list-style-type: none"> • 2.0 grams per hour (tested with crib wood)¹ • 2.5 grams per hour (tested with cord wood)
Manufactured/factory-built fireplaces ²	7.5 grams per hour	voluntary limit 
Masonry fireplaces ³ (i.e., site-built)	no requirement	voluntary limit 
Masonry heaters ⁴	7.5 grams per hour	voluntary limit
Wood-fired hydronic heaters ⁵	<ul style="list-style-type: none"> • 2.5 grams per hour (catalytic)⁶ • 4.5 grams per hour (non-catalytic)⁷ 	0.15 pounds per MMBtu heat output for each individual burn rate
Wood-fired furnaces ⁵	<ul style="list-style-type: none"> • 2.5 grams per hour (catalytic)⁶ • 4.5 grams per hour (non-catalytic)⁷ 	0.15 pounds per MMBtu heat output for each individual burn rate

Sources: [Methow Conservancy Burn Ban Info](#), [Department of Ecology Wood Stoves & Home Heating](#), [DNR Rules for Burning Without a Permit](#), [EPA NAAQS Table](#), [Clean Air Methow](#), [Purple Air Map](#), [Methow Review District 17A.200](#)

More information: [EPA Air Quality Index Reports](#)



Data requested: Alternatives to disposal of yard waste besides burning

Data found: There are little to no community yard waste disposal options within the Sub-Unit area. Options outside the Sub-Unit area include:

- No-cost annual Spring and Fall chipping and vegetation drives sponsored by Clean Air Methow, the Okanogan Conservation District, and their local partners. They are held annually at the Twisp Transfer Station (free yard waste disposal, chipping, etc.).
- Okanogan County Central Landfill accepts yard waste from residential customers at no cost.

However, options still exist for those who invest the time and effort into privately managing their yard waste:

- Composting – Use of compost systems to convert dead leaves, grass clippings, and other yard wastes into nutrient-rich soil for use in gardens and yards.
- Chipping – A chipper or shredder can turn wood and yard debris into mulch or a useful addition to your compost pile.

Sources: [Clean Air Methow Spring Yard Clean-Up Events](#), [Okanogan County Central Landfill Yard Waste](#), [Puget Sound Clean Air Agency Outdoor Burning Alternatives](#)

More information: [Seattle Yard Waste Composting Resources](#)



Relevant section: 4.3 Human Environment: Area Architecture



Data requested: Data on buildings resistant to wildfire

Data found:

- Fire-resistant construction materials are essential for protecting structures in wildfire-prone areas. Key zones vulnerable to wildfires include:
 - Roof Material: Use Class A fire-resistant materials and avoid wood shingles or chemically treated options.
 - Eaves, Soffits, Fascias, and Attic Vents: Enclose these areas with non-combustible materials and use non-combustible screening.
 - Chimney: Install a spark arrestor and keep the flue closed when not in use.
 - Exterior Walls: Use fire-resistant materials like cement, plaster, stucco, stone, or brick. Avoid vinyl siding.
 - Exterior Glass: Opt for double-paned or tempered glass to prevent fractures and fire entry.
 - Basement and Crawlspace Vents: Use fireproof screening like that on roof vents to prevent firebrands from entering.
- Have the Home Ignition Zone around the house to protect it from fire. The Home Ignition Zone is a concept used in wildfire management to describe the area surrounding a home that is critical for reducing the risk of wildfire damage (Figure 3).

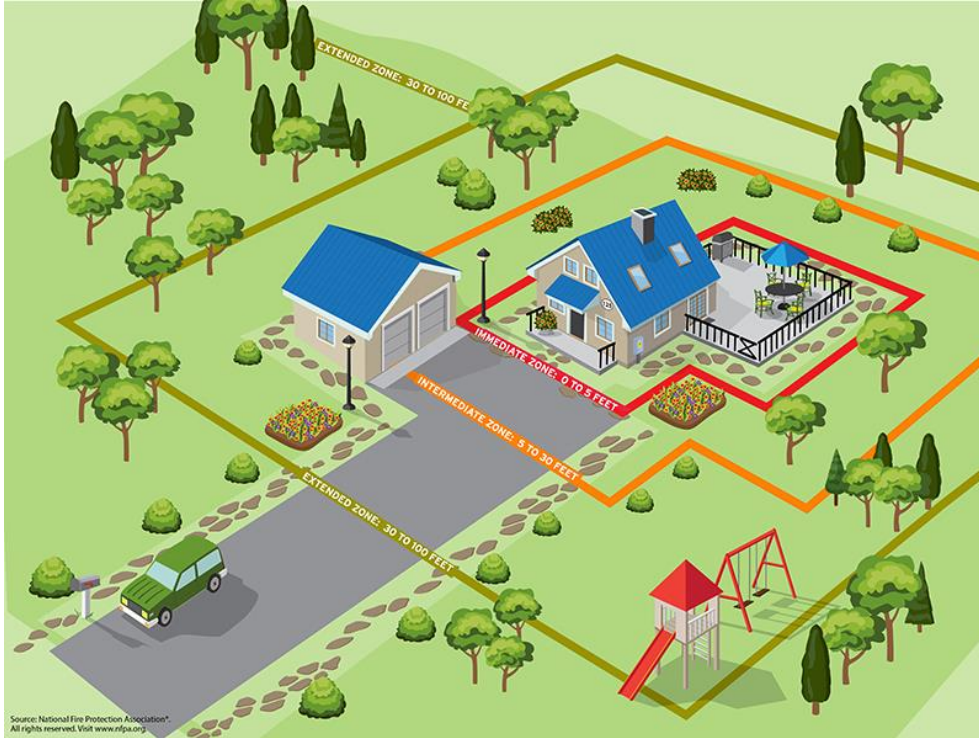


Figure 3. Home Ignition Zone. Source: The National Fire Protection Association.

Sources: [Firewise Preparing Homes for Wildfire](#), [FEMA Fire-resistant Construction Materials](#)

4.3 Water



Relevant Section: 4.2 Sensitive Environmental Features: Ground Water



Data requested: Add discussion of legal availability

Data found: Legal limits on availability

The Methow Instream flow rule, WAC 173-548, reserves 2.0 cubic feet per second for “Single Domestic and Stock Use.” Wells that pump water within these limits are permit exempt. Instream flow rules theoretically require a minimum flow for protecting fish, wildlife, and recreation and most Methow water rights have been issued, but exempt wells are not required to stop pumping when flows drop below minimum. Irrigation rights and wells that do not qualify for the reserve may be suspended. Besides permit-exempt wells, many water rights grant legal availability regardless of current physical availability.

The 2016 Washington State Supreme Court Hirst decision ruled that counties cannot issue building permits until people prove new water use will not impair a “senior water right” according to instream flows and the United States legal doctrine of prior appropriation, or “first in time, first in right.”

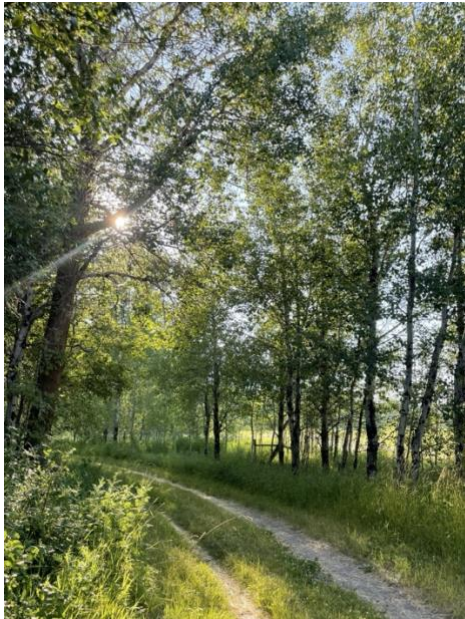
Wolf Creek has been a closed basin since 2018, which means neither surface nor groundwater can be pumped without offsetting use. The Washington State Department of Ecology found that further use might impair senior water rights, including the needs of fish and wildlife.

Other water rights considerations:

- Buildout: Water availability is limited by parcel sizes.
- Relinquishment, rescission, and abandonment
- Possibility of connecting to existing water system
- Possibility of transferring water rights from other locations

Sources: [Department of Ecology: Methow Watershed Water Availability, WAC 173-548: The Instream Flow Rule for WRIA 48](#), [Washington State Department of Ecology: Hirst decision](#), [Methow Valley Citizen's Council: Legal Framework: Exempt Wells and Water Allocation in the Methow watershed](#), [Department of Ecology Water Rights Map](#), [WA Department of Ecology Instream Flow and Water Management Rules](#), [Department of Ecology: The Relinquishment, Rescission, and Abandonment of Water Rights, WAC 173-518-030: Definitions](#)

More information: [Methow Watershed Council: Library](#), [RCW 90.03: Washington Water Code](#), [RCW 90.44: Regulation of Public Groundwaters](#), [RCW 90.54: Water Resources Act of 1971](#)



Source: Annika Weber

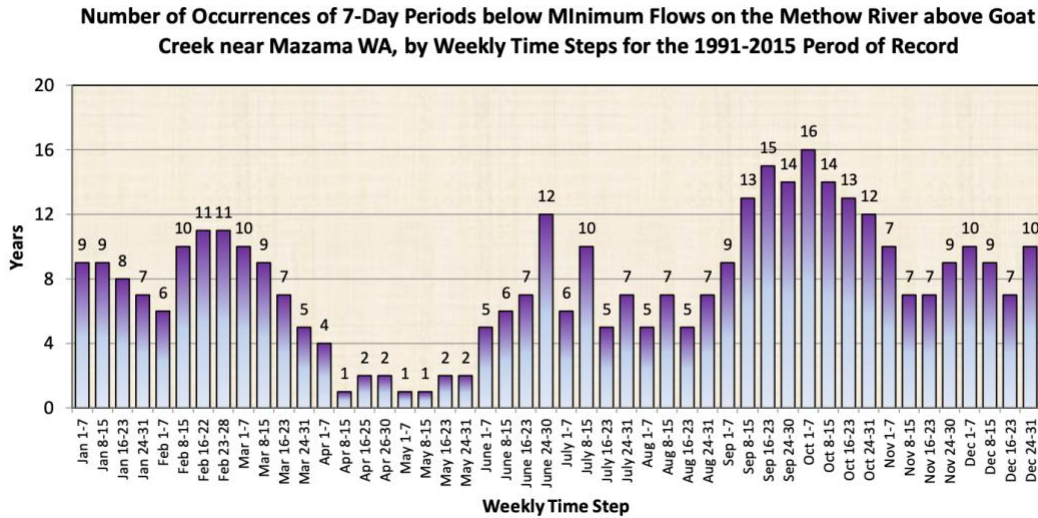


Figure 4. WRIA 48 Gage by Reach Investigation, June 2018 (Methow Watershed Council).



Data requested: Water table depth

2014 data: “The approximate depth to the water table is commonly considered to be 20 to 25 feet below valley floor elevations” in the Upper Valley (15).

Data found: Groundwater levels fluctuate between summer highs and lows in the winter and early spring. **On average, water levels decreased –0.4 feet from autumn to spring, with a range of –17 to –31 feet, and increased 1.0 foot from spring to summer, with a range of –23 to –27 feet.** Lee Whittaker, a Mazama resident and owner of the McKinney Ridge development, has recorded valley floor water table depths at McKinney Ridge from 5 feet to 30 feet. Water levels fluctuations are highest in the Upper Valley. Physical availability is lowest from late summer to winter after snow has melted. Continued appropriation for agriculture and domestic use reduces instream flows just when endangered upper Columbia River Basin Spring chinook travel back upstream to spawn. Low streamflow combined with high air temperatures elevates water temperatures and reduces salmon habitat. In addition to snowmelt, in the late spring and summer aquifers are recharged by seepage from unlined irrigation canals.

Relationship between aquifer and surface water flow: Goat Creek (RM 65) to downstream of Weeman Bridge is considered a “gaining reach,” where groundwater contributes discharge to surface flows. The aquifer is deepest between Goat Creek and Lost River (see groundwater permeability) and river segments here often go dry in the summer as the infiltration capacity of the aquifer exceeds surface water flow. Seasonal dewatering has been reported between Robinson Creek (RM 76.5) and Weeman Bridge.

Note: The latest comprehensive study of well water levels was conducted in 2001. It would be helpful to conduct an updated study to Konrad et al. 2005, “Hydrogeology of the Unconsolidated Sediments, Water Quality, and Ground-Water/Surface-Water Exchanges in the Methow River Basin, Okanogan County, Washington.”

Sources: [Konrad et al. 2005. Hydrogeology of the Unconsolidated Sediments, Water Quality, and Ground-Water/Surface-Water Exchanges in the Methow River Basin, Okanogan County, Washington, 2015 Upper Methow Reach Assessment, Methow Salmon Recovery Foundation: Methow State of the Salmon](#), Lee Whittaker (Mazama resident).

More information: [USGS National Water Information System: Methow River Above Goat Creek Near Mazama, WA](#), [USGS Groundwater Levels for Washington](#) (last data 2003-10-03), [Department of Ecology: Groundwater Map](#), [Department of Ecology: Methow River Publications](#)



Data requested: Groundwater permeability

2014 data: “Storage capacity of the glacial debris is on the order of 40-acre feet per acre of the surface. The permeability is estimated at 8,000 gallons per day per square foot” (15).

Data found: Unconsolidated sediments that line the bottom and lower slopes of the Valley are mostly composed of highly permeable sand, gravel, cobble, and boulder and varies from 500 to 1000 feet between Lost River (RM 75) and Goat Creek (RM 65) to a shallower aquifer upstream at Robinson Creek (RM 76.5). Wells pump groundwater from these materials at **100 gallons per minute**. In some locations, silt, clay, and glacial clay also regulate the movement of water in and out of the aquifer. **Canals recharge the aquifer at a rate of 1.8-3.2 thousand acre-feet per year.**

Sources: [Konrad et al. 2005. Hydrogeology of the Unconsolidated Sediments, Water Quality, and Ground-Water/Surface-Water Exchanges in the Methow River Basin, Okanogan County, Washington, 2015 Upper Methow Reach Assessment](#)

More information: [USGS National Water Information System: Methow River Above Goat Creek Near Mazama, WA](#), [USGS Groundwater Levels for Washington](#) (last data 2003-10-03), [Department of Ecology: Groundwater Map \(Twisp wells\)](#), [Department of Ecology: Methow River Publications](#)



Relevant Section: 4.2 Sensitive Environmental Features: Water Quality



Data requested: Department of Ecology Methow River water quality rating

2014 data: “The Department of Ecology has designated the Methow River, in the planning area, Class AA, the highest classification of the State” (16).

Data found: Unable to find a current Ecology rating for the Upper Valley in the 2014 format but found other relevant information about water quality in the Upper Methow. **Department of Ecology water quality records at Twisp Station met department goals in all years from 1997 through 2018** (full study period). Konrad et al. 2005 found that both surface and groundwater quality are “**high quality,**” and **constituent concentrations did not exceed any Federal drinking water standards or health advisories.**

Climate change is resulting in earlier peak flows and lower summer flows, which combine with higher summer temperatures to warm the water. In addition to limiting access to water for Valley residents, this trend is a water quality concern for salmon and steelhead, which rely on cold water.

Water temperatures have been recorded above 16 degrees Celsius, the Aquatic Life Use “core summer salmonid habitat” standard represented by seven-day moving average of the daily maximum temperature. Water temperatures have also exceeded the 13-degree Celsius spawning and incubation standard and the 10-to-13-degree Celsius temperature range for rearing steelhead. **There is the highest potential for surface water to reach life threatening temperatures of 23 degrees and above between Goat Creek and Lost River, where reduced late summer flows create shallow pools and dry riverbeds. This reach is seasonally designated “water quality limited” (Category 4C) by the Washington State Department of Ecology.** The Department of Ecology designated the Methow River and Early Winters Creek “impaired waters” due to “inadequate stream flow” and the Methow River and Lost River due to “temperature exceedance.”

Reaches 1-6 downstream of the confluence with Lost River from RM 61.15 at Weeman Bridge to RM 75 at the Lost River confluence received the highest number of Unacceptable ratings according to the 2015 Upper Methow Valley Reach Assessment. Reaches 8 and 9 from the Robinson Creek confluence (RM 76.5) to the Trout Creek confluence (RM 80.0) received the most Adequate ratings. All reaches currently allow fish passage.

Other potential threats to water quality include residential development along banks, especially residential lawns, roads, livestock grazing, dispersed camping, and gravel mining.

Sources: [2015 Upper Methow Reach Assessment](#), [Methow Conservancy: State of the Methow Report](#), [Konrad et al. 2005. Hydrogeology of the Unconsolidated Sediments, Water Quality, and Ground-Water/Surface-Water Exchanges in the Methow River Basin, Okanogan County, Washington](#), [The Methow Valley Climate Action Plan](#)

More information: [Department of Ecology: Methow River Publications](#)

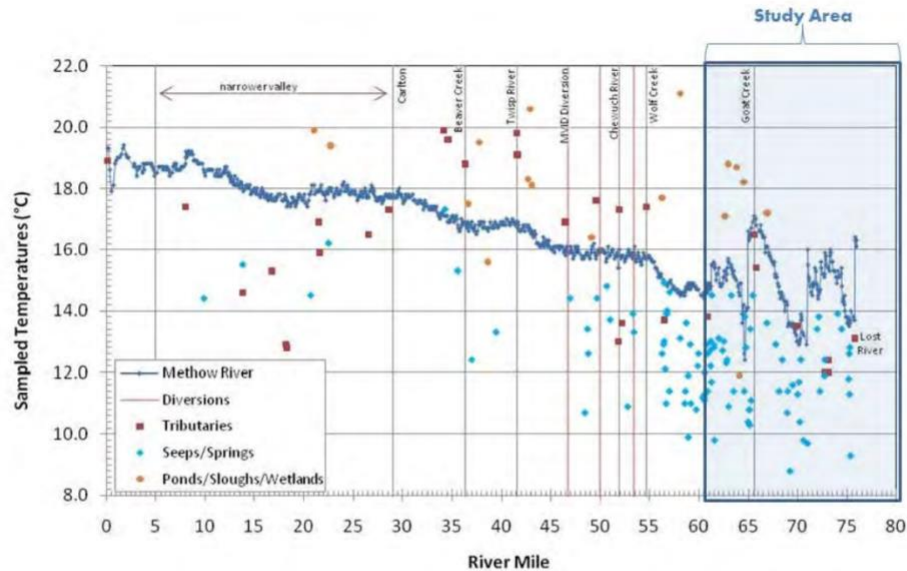


Figure 19. Surface water temperatures of the Methow River from slightly upstream of the Lost River confluence at RM 75 to its confluence with the Columbia River. Study area surface water temperatures highlighted in blue (RM61-80) indicate a high level of variability. (Derived from Figure 11 in Watershed Sciences 2009).

Figure 5. Methow River surface water temperatures from Lost River to the Columbia River, 2015 Upper Methow Valley Reach Assessment.



Relevant section: 4.3 Human Environment: Area Architecture



Data requested: Buildings to protect local water resources

Data found:

- Protect local waterways and wetlands by identifying the 100-year-flood plain and building 150-200 feet or more from the shoreline.

More information:

- Truss Energy Heels – Increased “height” of rafters allows additional insulation in ceiling. Suggested: 24” tall at low end of a shed roof or 18” tall for a gable roof.
- Ceiling Insulation – R-60 (blown in) – Code for trusses is 49, however, a higher insulated ceiling will save money (heating costs) and reduce the likelihood of snow melting on the roof and forming ice dams that can result in a leaky roof.

Sources: [Methow Conservancy Handy Reference Guide](#), [Methow Housing Trust Affordable Buiding Guide](#)

4.4 Light & Glare



Relevant Section: 4.2 Sensitive Environmental Features: Light & Glare



Data requested: Acknowledge light and glare restrictions that apply to all areas of the Sub-Unit

Data found: The Methow Review District includes a special light and glare provision for inns, lodges, guest ranches, campgrounds, RV parks which apply to all areas of the Sub-Unit:

“Outdoor lighting, including street and parking lot lighting, shall be directed downward and shielded to minimize potential glare to motorists and off-site residents. No exterior light with a direct source visible from a neighboring property shall be installed. Indirect sources and horizontal cut-off fixtures are recommended to reduce glare and provide general ambient light. Holiday lighting is exempt from these requirements.”

Sources: [Methow Review District Chapter 17 A](#), [Rural Residential Chapter 17A](#)



Data requested: Acknowledge Dark Sky movement/s

Data found: Community priorities include:

- Individual or household behavior changes to supplement the ordinance for lodges, etc.
- Concerns: Losing night sky visibility, disturbing wildlife’s light/dark cycle, wasting energy and money, sleep disorders. Emphasize that more lighting does not deter crime.
- Acknowledge multiple types of light and glare: Glare, skyglow, light trespass, clutter.
- Proposals: Shield lights or shine downwards, use lighting only when needed, use warm colors, light controllers, low light, and blinds.

Sources: [Methow Dark Sky Coalition General Brochure](#)

4.5 Population & Commerce



Relevant Sections: 4.3 Human Environment: Population and 4.3 Human Environment: Commerce



Data requested: Changes since the pandemic

Data found: COVID-19 had a significant impact on home prices, with more remote workers moving the Valley. From 2019 to 2020, real estate sales increased by 54%. The price of a home rose by 14.7% from 2020 to 2021, and nearly 50% from 2016. In 2021, 19% of the Methow Valley’s population were remote workers and 11% were supported by a partner working remotely. Their median wage is \$202,000 per year compared to a medium household income of \$57,779 per year for those who work in the Methow. Local wages are increasing at less than a quarter of the rate of real estate prices.

In Mazama, 49.81% of private parcels are developed (392 parcels). Twenty-six-point six percent are protected through conservation easements or purchased by non-profit organizations. 27.2% of agricultural land was protected as of 2020.



Source: Annika Weber

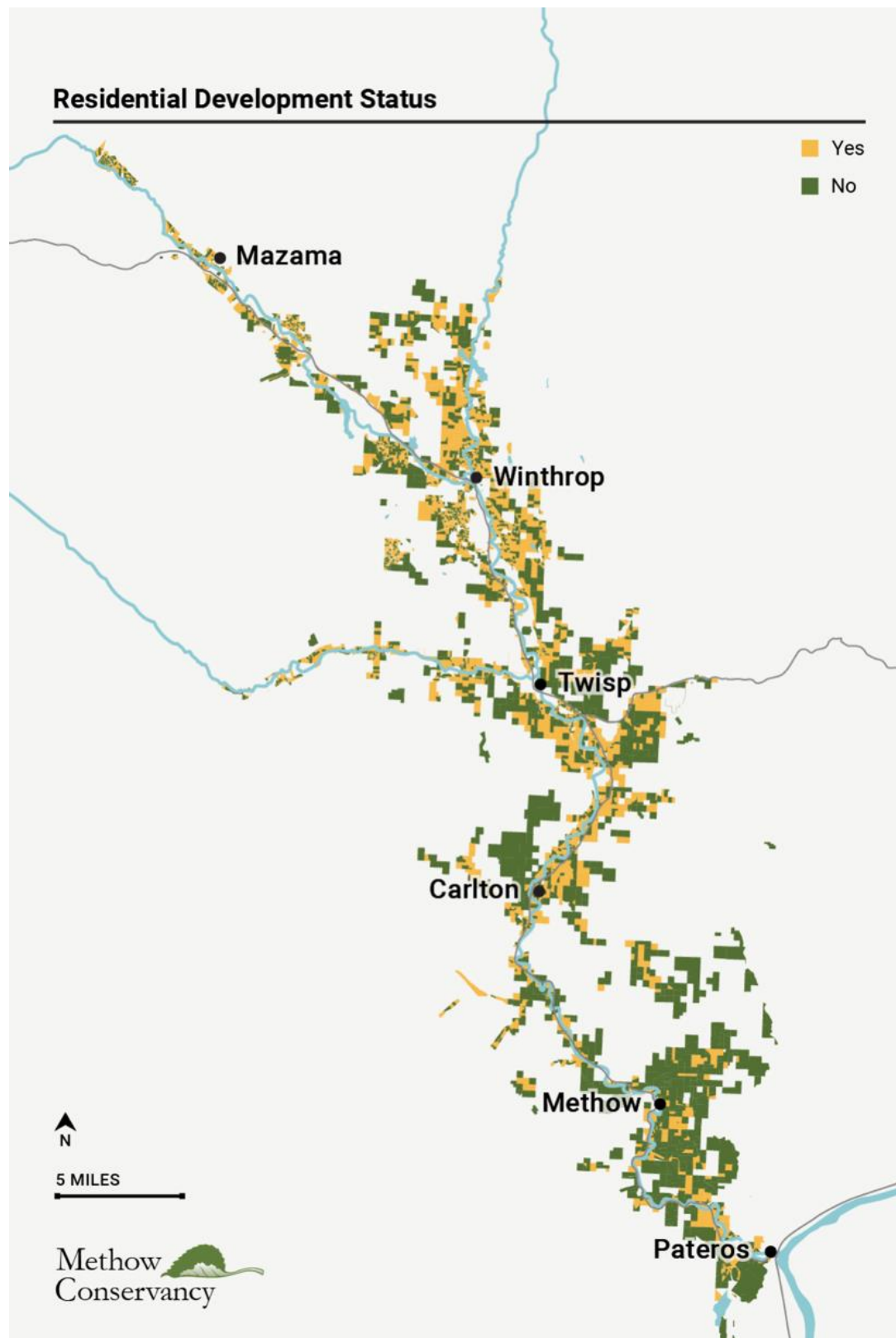


Figure 6. In 2020, 52% of the watershed's private parcels were developed (Methow Conservancy).

Seasonal tourism is a challenge for business owners, and remote workers provide more consistent business, contributing to 9% of the economy. However, amenity migration by remote workers since the pandemic supports the growth of businesses that appeal to their socio-economic status and may be too expensive for those surviving on Methow wages. Employees reported feeling less integrated into the community.

New construction contributes to 46% of the economy. However, almost half of respondents to a TwispWorks survey identified gentrification as their biggest concern, including unsustainable residential construction rates. Community members worried that the Upper Valley might become a “playground for the rich” and change the “character of the [whole] Valley.”

Small business owners reported challenges with wildfires, childcare, internet access, affordable housing, and difficulty retaining employees due to all these factors.

Sources: [TwispWorks Comprehensive Economic Study](#), [Methow Conservancy: State of the Methow Report](#), [About Methow Housing Trust](#)



Relevant section: 5.1 Population



Data requested: New data on population

2014 data: “Population growth rates for the Methow Valley have been estimated to range from 0.72% (Office of Financial Management) to 1.70 (Ferris/Social Impact Research for Early Winters) with an average of growth rate of 1.13% without the development of Arrowleaf.”

Data found: Mazama’s population was 83 in 1990 and 158 in 2017, representing approximately 90% growth over 27 years. Figure 7 shows population estimates based on 2.2 persons/household from the number of developed parcels in the Methow Valley watershed.

Figure 3.3

Population Estimates by Area, 2005 vs 2020

	2005		2020		Percent increase		
	Full-time	Part-time	Full-time	Part-time	Full-time	Part-time	Total
Mazama	134	359	191	651	43%	81%	71%
Winthrop	1674	1606	2431	2224	45%	38%	42%
Twisp	2125	658	2605	759	23%	15%	21%
Carlton	427	235	488	279	14%	19%	16%
Methow	196	130	240	132	22%	2%	14%
Pateros	436	275	444	334	2%	21%	9%
TOTAL	4992	3263	6399	4379	28%	34%	31%

Figure 7. Population Estimates by Area, 2005 vs 2020 (Methow Conservancy).

Sources: [TwispWorks Comprehensive Economic Study of the Methow Valley](#)

More information: Figure 8 shows the increase in total residential parcels from 2005-2020 in each location, from Mazama to Pateros. It shows that the largest growth occurred in the Winthrop area, followed by Mazama and Twisp.

Figure 3.2

Improved Residential Parcels 2005 vs 2020

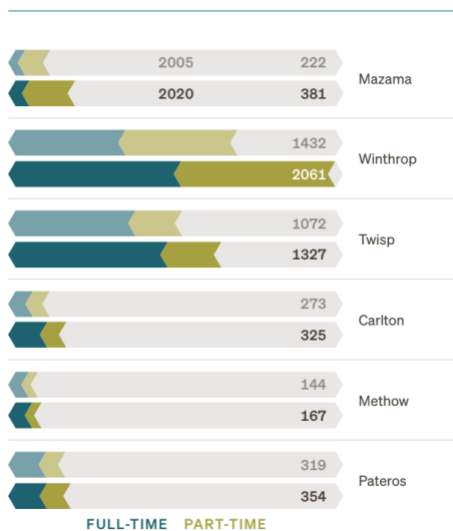


Figure 8. “Numbers of residential parcels with at least \$11,000 (2005) or \$12,000 (2020) in improvements” (Methow Conservancy).

4.6 Facilities, Utilities, & Services



Relevant Section: 4.3 Human Environment: Public Services & Facilities



Data requested: Update public services table

Table 4. Public Services

Service	Responsible Agency	Location of Service
Utilities:		
Electrical	Okanogan County Electric Coop	Service area Methow Valley north of Twisp. Office in Winthrop.
Telephone	Century Tel for landline. Incomplete cell coverage by Verizon, T-Mobile, and AT&T.	Methow Valley. Century Tel office in Twisp.
Solid Waste	Okanogan County/Methow Sanitation, WasteWise Methow, Methow Recycles	Service area entire valley. Transfer Station and Moderate Risk Waste Facility in Twisp.
Internet Access	Methownet.com , satellite providers include Viasat, Hughesnet, Starlink, Century Link, and limited Okanogan PUD	Mazama to Carlton
Cable television		
Facilities:		
Schools	Methow Valley School District #350	Central campus with K to 12 located between Winthrop and Twisp, Independent Learning Center (ILC) in Twisp, private Montessori school in Winthrop.
Medical	Private Practice	Winthrop and Twisp, nearest hospitals Mid Valley Hospital, Omak (57 miles from Mazama core) and Three Rivers Hospital, Brewster (63 miles from Mazama core).
Public Safety:		
Fire Protection	Fire District #6, Methow Valley Ranger District	Local fire hall on SR-20 at Mazama Junction. Additional fire halls in Winthrop and Twisp.
Emergency Medical	Aero Methow Rescue Service	Mazama to Omak, also partners with Okanogan County Sherriff's Office Volunteer Search and Rescue Team to provide backcountry services. Quarters in Mazama, Winthrop, and Twisp.
Law Enforcement	Okanogan County Sheriff, Washington State Patrol, Winthrop Marshal	Okanogan, Winthrop

Transportation:	Transit for Greater Okanogan (TranGO)	North and South routes between Mazama, Winthrop, and Twisp
Air	Washington State Department of Transportation, U.S. Forest Service, Private	Methow Valley State Airport (NCSB) in Winthrop and Lost River Airport
Highways	Washington State Department of Transportation and Okanogan County	Twisp and Winthrop
Electric Vehicle Charging Stations	Sun Country Highway Network	The Inn at Mazama (public access, no cost)



Relevant section: 4.2 Sensitive Environmental Features: Geologic Hazards and Flood Plain



Data requested: Post-emergency declaration mitigation/removal

Data found:

- Okanogan County Alerts provide time-sensitive notifications on hazards affecting the areas near and around home and work addresses.
- Hazard mitigation under the Okanogan County Mitigation Plan. The goal for developing this plan was to “include an in-depth risk assessment for natural hazards in Okanogan County and the development of a list of mitigation projects aimed at protecting county residents, property, natural resources, infrastructure, and the local economy from the impacts of the following hazards: Flood (and Dam Failure), Earthquake, Landslides, Severe Weather, Wildland Fire, Volcano, Hazardous Materials, Pandemic, and Terrorism & Civil Unrest.”
 - Town of Winthrop acknowledges floods, landslides, earthquakes, and wildfires as primary hazards.
- The 2018 Methow Valley Emergency Plan also provides information on hazard risk, communications resources, evacuation routes, evacuation protocols, shelters

Sources: [Okanogan County Alerts](#), [Okanogan County Multi-Hazard Mitigation Plan](#), [Methow Valley Emergency Plan](#)



Relevant section: 4.2 Sensitive Environmental Features: Soils



Data requested: Okanogan County Department of Health septic system requirements (pressurized system)

Data found:

- All septic systems (except gravity-flow septic systems) are required to be installed by an Okanogan County licensed on-site sewage installer. To receive a permit for septic system installation, a site design plan must be submitted to and approved by the Okanogan County Public Health District (OCPHD).
- Size requirements:
 - The smallest allowable size for a septic system is equivalent to that of a two-bedroom residential structure.
 - Septic systems with design capacity flows of over 3,500 gallons per day must comply with standards articulated in “WAC 246-272B Large On-Site Sewage Systems Regulations” and “Design Standard for Large On-Site Sewage Systems” (1993, WA Department of Health).
- The discharging of pit or vault privies is only allowed for temporary (less than 60 days a year) use “in agricultural, recreation, and construction sites.”
- Grey water from discharging pit privy or non-discharging disposal system must be treated, disposed of, or utilized in accordance with state law.

Sources: [Okanogan County Department of Health Septic System Regulations](#), [Okanogan County Public Health District Construction Standards for Septic Systems](#)



Relevant section: 4.3 Human Environment: Transportation



Data requested: New public transportation through the Sub-Unit, acknowledging low frequency

Data found: Transit for Greater Okanogan (TranGO) public transportation runs Monday-Saturday with north and south routes through Twisp, Winthrop, and Mazama. Currently, there is only one TranGO stop within the Sub-Unit area, located at the Mazama store, with service at 8:00 am, 10:00 am, 12:00 pm, 3:00 pm, 5:00 pm, and 6:50 pm. No other public transportation currently operates within the Sub-Unit.

Sources: [Methow Valley TranGo Schedule](#)

4.7 Land Use



Relevant section: 4.2 Sensitive Environmental Features: Wildlife/Fish/Endangered Species/etc.



Data requested: New Department of Fish and Wildlife development regulations

Data found:

- The Methow Wildlife Area comprises approximately 35,300 acres of land managed by the Washington Department of Fish and Wildlife. It contains several wildlife area units that are off-limits to private or commercial development (but provide public access for many recreational activities). Wildlife area units in the Sub-Unit area include:
 - The Early Winters Wildlife Area Unit, "acquired for mule deer winter range and the biodiversity of its large riparian areas on the Methow River" in 2003.
 - The Big Valley Wildlife Unit, "purchased primarily for biodiversity & endangered fisheries riparian habitat protection along the Methow River" between 1991 and 2022.
 - Section of the Rendezvous Wildlife Area Unit, "purchased for mule deer winter range and migratory corridors" between 1991 and 2022.
- Hydraulic Project Approval (HPA) must be obtained from WDFW for any hydraulic projects planned near state waters (RCW 77.55).
- The State Environmental Policy Act (SEPA) mandates that state and local governments perform an environmental review for all agency actions, such as providing funding or issuing permits, for proposed projects from both private and public sector applicants (RCW 43.21C). The Washington Department of Fish and Wildlife (WDFW) carries out this environmental review to assess potential ecosystem impacts.

Sources: [WDFW Methow Wildlife Area](#), [WDFW Hydraulic Project Approval \(HPA\)](#), [RCW 77.55](#), [WDFW State Environmental Policy Act \(SEPA\)](#), [RCW 43.21C](#)



Relevant section: 4.2 Sensitive Environmental Features: Geologic Hazards and Flood Plain



Data requested: Verify floodplain development regulations

2014 data: "Current zoning restricts placement of dwellings to areas outside the designated 100-year flood plain (16)."

Data found: According to the Methow Review District 17A.130.110 C. "No structures for human habitation shall be constructed or placed in the 100-year floodplain."

Sources: [Methow Review District 17A.130](#)



Relevant section: 4.3 Human Environment: Land Use



Data requested: Update with land use data

Data found: Approximately 47% of the private land area in the valley is classified as agricultural land use, indicating the continued importance of agriculture as a land base. Every year, some land is converted to residential construction; but, compared to subsequent 5-year periods, the land conversion from 2005 to 2010 was more. Though the actual number of converted parcels has been higher in the Winthrop area, the Mazama area has witnessed more conversions from agricultural or undeveloped areas to residential parcels as a proportion of total properties.

Sources: [Methow Population and Land \(PAL\) Project: Human Population, Land Use, and Residential Development Report](#)



Source: Annika Weber

5.0 Recommendations

First, we present policy proposals for the Sub-Unit A Plan update. These are not meant to be comprehensive. Rather, they represent the biggest takeaways we developed in the process of researching data points requested by the MAC. Second, we make a series of recommendations for including students in the planning process.

GMA comprehensive plan elements represent many facets of sustainability because long-term development planning must account for social, environmental, human, and economic factors. The Growth Management Act also supports local governments and citizens to take responsibility for global challenges. One resource for addressing these challenges is the UN Sustainable Development Goals. They were adopted in 2015 as an update to the Millennium Development Goals and recognize the interconnectedness of global issues and their relevance to all countries, integrate environmental sustainability, and prioritize partnerships and adaptability.

For example, the water element recognizes that cold water and minimum stream flows are vital for fish, that people need access to water for a variety of uses, including agriculture, drinking water, and waste treatment, the importance of water to the long-term economic vitality of the region, and that meeting these needs depends on negotiating power dynamics and competing interests among community members. Among the UN Sustainability Goals particularly represented by the water element are Water and Sanitation, Climate Action, Life Below Water, Life on Land, Decent Work and Economic Growth, Reduced Inequalities, and Partnerships for the Goals.

Wildfires threaten human and non-human homes and scorch the soil, increasing the risk of mudflows, overland flooding, and short-term fish die outs. Evacuations and months of poor air quality from wildfire smoke generate regional trauma that poses social and political barriers to prescribed burning and challenges for the Valley's tourist economy. Among the UN Sustainability Goals particularly represented by the wildfire element are Climate Action, Good Health and Wellbeing, Life Below Water, Life on Land, Decent Work and Economic Growth, Reduced Inequalities, and Partnerships for the Goals.

Our research and policy recommendations acknowledge that climate change and amenity migration are widening inequality and imposing new pressures on the Valley's land, livelihoods, and values. The Valley's climate burden far exceeds its contribution. On a global scale, climate change increasingly forces people to leave their homes and migrate to some of the very communities that consume the most labor and resources, whether from countries in the Global South to Western ones or from rural areas to urban ones while wealthier migrants with priority access to food, water, shelter, heating, cooling, education, etc. have greater mobility and can live where they choose.

5.1 Climate

After talking with Amy Snover, former director of the UW Climate Impacts Group, we recommend that the MAC incorporate climate mitigation and adaptation into both a discrete section and into other elements: “mainstreaming” acknowledgement of climate change.

The MAC should use both of the following approaches to identify the most comprehensive selection of climate-related policies:

Ask, what are the most important climate impacts and mitigation strategies to highlight (e.g. reduced summer stream flows)? Incorporate associated policies into relevant elements (e.g. water).

For each element, ask, what are associated climate impacts and mitigation strategies?

POLICY: Increase the frequency and availability of public transportation options like TranGO within the Sub-Unit area to reduce carbon emissions and air pollution from single-occupancy vehicles.

POLICY: Implement a community rideshare program with designated pickup locations and a user-friendly app to enhance transportation accessibility, reduce carbon emissions, and promote sustainable commuting.

POLICY: Identify and establish heating and cooling centers as refuges during extreme temperature events.

POLICY: Invest in river and floodplain restoration (introducing beaver dam analogs and woody debris, improving shading, increasing number of deep pools, etc.) to slow river flows and maintain cool temperatures for fish habitat as snowpack diminishes.

POLICY: Encourage the integration of passive design principles in new construction to align Washington state standards with international benchmarks, enhancing energy efficiency and resilience to climate change impacts.

POLICY: Promote the integration of solar panels in new construction to harness renewable energy, reduce carbon emissions, and enhance long-term sustainability.

POLICY: Encourage investment in home weatherization and electric HVAC systems that meet current and future efficiency standards to advance energy equity and improve human health.

POLICY: Engage local stakeholders (residents, farmers, ranchers, agencies, etc.) in collaborative water stewardship programs to sustainably manage water resources during summer drought conditions.

POLICY: Partner with local climate organizations to educate residents on local impacts of climate change (decrease snowpack, increased risk of drought, longer wildfire seasons, etc.) and promote actions that can be taken to mitigate these impacts.

5.2 Wildfire & Air Quality

As summer fire seasons continue to grow longer and drier and wildfires increase in intensity and scale, there is a pressing need for policies that take proactive action to ensure community safety and health, as well as the health of local forests and forest ecosystems. Many areas and communities within the Sub-Unit area are especially vulnerable in the face of wildfire events, especially those that lack road infrastructure for safe evacuation and whose geography and natural terrain place them in the path of post-wildfire floods and debris flows.

Our policy proposals for wildfire and air quality were borne from both independent research and insight from local forest and wildfire ecologist, Susan Prichard, on wildfire trends, best practices for forest management, areas of highest concern, and strategies for mitigating wildfire impacts to human health and property near and within the Sub-Unit area.

POLICY: Promote the widespread adoption of Firewise management principles across residential, commercial, and public lands to reduce the risk of personal harm and property damage from wildfires.

POLICY: Accelerate the prescription of forest treatments (prescribed burns, thinning, etc.) on public and WDFW owned lands to reduce surface fuels and restore forest health, limiting the severity of seasonal wildfires.

POLICY: Discourage development in areas identified to be most vulnerable to wildfire, post-fire floods and debris flows.

POLICY: Establish firebreaks in high-risk areas, particularly around communities, to slow the spread of wildfires.

POLICY: Encourage the use of fire-resistant materials for new construction and renovations, such as non-combustible roofing, siding, and windows.

POLICY: Encourage collaboration between federal agencies (US Forest Service, DNR, and WDFW), environmental groups, timber industry, and private landowners to establish goals and develop long-term agreements focused on wildfire mitigation and community resiliency.

POLICY: Identify and establish clean air centers within the Sub-Unit area as refuges for residents during smoke events.

POLICY: Advance home weatherization to reduce energy burdens and enhance indoor air quality.

5.3 Water

Disagreement over how to distribute limited water is nothing new, but climate change is reducing snowfall over shorter snow seasons and increasing rain on snow events, even further decreasing snowpack. Generally, there is more water in the rivers during the winter and less during the summer. There is an increased risk of summertime drought and heat stress for cold-water fish. Along with mitigating climate change, it is now even more crucial to conserve water and direct development towards areas where it is most available.

POLICY: Direct growth, especially residential development, towards areas with legal and physical water available.

POLICY: Encourage efficient use and conservation of water.

POLICY: Direct the Washington State Department of Ecology to continue funding Okanogan Conservation District's water bank for the Methow River. It is encouraged that at least one third of every right purchased with grant money is reserved for instream flows and that rights be sold in-county.

POLICY: Develop water storage, including infrastructure and processes (e.g. supporting beaver populations, groundwater recharge).

POLICY: Further the adoption of restoration strategies in the 2015 Upper Methow Reach Assessment, including existing habitat protection, riparian restoration, habitat reconnection, placement of structural habitat elements such as beaver dam analogs or boulders, and creation of off-channel habitat (specific projects in the Assessment).

POLICY: Plant native trees and shrubs between fields and residential lawns and rivers to manage runoff. Limit nonpermeable surfaces.

POLICY: Preserve and restore wetlands, which are sources of filtration.

POLICY: Continue to implement the Methow Watershed Council's Water 2066 report.

POLICY: Conduct an updated groundwater-surface water exchange study, like Konrad et al. 2005.

5.4 Light & Glare

POLICY: Low intensity lighting is encouraged, including warm colored lighting shielded downwards and used sparingly.

POLICY: Maintain light and glare conditions for inns, lodges, guest ranches, campgrounds, RV parks which apply to all areas of the Sub-Unit.

5.5 Population & Commerce

POLICY: Encourage non-profit organizations guided by the Community Land Trust model that develop permanently affordable housing in residential areas.

POLICY: Establish permit caps on nightly vacation rentals.

POLICY: Encourage public spaces for community gathering, education, and advocacy.

POLICY: Land management agencies and businesses are encouraged to enforce use of recreation passes.

5.6 Facilities, Utilities, & Services

POLICY: Consider climate impacts, such as wildfire, mudflow, and flood risk in utilities siting decisions.

POLICY: Install public-access electric vehicle charging stations, along with educational materials about the benefits of electric vehicles and available subsidy programs.

POLICY: Engage with Okanogan County Electric Coop to expand weatherization, clean energy credit and other energy assistance, and conservation programs.

POLICY: Engage with Okanogan County Electric Coop to establish distributed solar energy and associated education programs.

POLICY: Work with Methow Recycles, Waste Wise, and Okanogan County Sanitation to expand access to recycling and composting programs that incorporate bear-resistant infrastructure recommendations in the 2024 Methow Valley Community Bear Assessment.

5.7 Land Use

POLICY: Implement stricter buffer zones around the Methow Wildlife Area units, particularly the Early Winters, Big Valley, and Rendezvous Wildlife Units.

POLICY: Maintain and enforce the current regulation that prohibits human habitation structures within the 100-year floodplain.

POLICY: Allow and encourage a variety of housing types in the planning area.

POLICY: Identify areas for higher density residential and commercial zoning that are near existing development and in areas with low hazard risks.

POLICY: Identify specific residential areas for higher density development.

POLICY: Consider voluntary, incentive-based programs to keep parcels whole and preserve open space.

POLICY: Discourage residential development in areas of the Sub-Unit with high risk of wildfire, mudflows, and floods like the Edelweiss, Lost River, Fawn Meadow Road and Tumm Lane areas.

POLICY: Direct residential development towards areas with current and forecasted physical water available.

For more policies to preserve open space and rural character while providing affordable housing, consult the [San Juan County Comprehensive Plan](#).

5.8 Collaboration with Youth & Student Groups

“Believe that the future lies with the younger leaders and what they want.... The Valley like all places is going to continue to change, but because of its extraordinary community, it is somewhat unique... All this being said, there seems to be a growing ‘us versus them’ syndrome whether financially, part-timers versus residents, politically, etc. They all need to be heard and offered a chance to be included in the debate and decision making. It is their home too.”
(TwispWorks Comprehensive Economic Study, 107)

Youth engagement in local government helps young people develop the skills, interest, and motivation to sustainably contribute to the places they care about through careers, civic engagement, and community participation. Young people also contribute fresh perspectives that may otherwise be left out of the planning process and highlight challenges faced by their generation, such as climate change, gun violence, the impact of technologies like social media algorithms, and access to mental health support. When youth speak to the issues that affect them, it can be both empowering and politically potent.

The Mazama Advisory Committee is encouraged to consider the following methods for youth engagement in local government. These actions support the UN Sustainable Development Goal

Quality Education, to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.”

Youth Planning Commission: Many counties and cities in Washington have established [councils of local youth](#) to advise policy makers on issues that are important to them, become familiar with local government, and assist with outreach to young people. The [Asotin County Youth Commission](#) represents a largely rural constituency in the southeast Washington Columbia basin. Its objectives include identifying issues of importance to youth through local outreach, supporting youth activities, and improving relationships between youth and adults. Commission members participate in Asotin County Board of County Commissioners meetings. The [Seattle Youth Commission](#) includes youth representatives from a variety of neighborhoods who advise city officials on youth priorities and collaborate on a community project. Across the state, most youth commissioners have advisory roles, but otherwise support a variety of responsibilities.

Since the Upper Valley is unincorporated, the Mazama Advisory Committee could host a youth commission of Upper Valley or Methow Valley young people to further its goals of involving citizens in all stages of the planning process and increasing communication between citizens and County officials. The MAC could help young people connect with the Board of Commissioners and County Planning Commission to advocate for Upper Valley priorities at the County level. Youth commissioners could help the MAC fulfill its goal of “informing and educating citizens regarding [County] land use planning” by creating educational materials and organizing advocacy opportunities for their peers. Early recruitment equips young people with the skills, confidence, and knowledge of long-term career pathways to engage and grow throughout their lives and contribute to community resilience by supporting leadership in others.

Liberty Bell Jr Sr High College in the High School planning class: In recent years, the Methow Valley School District has developed Career and Technical Education (CTE) and Dual Credit programs. [CTE classes aim](#) to prepare students for “high-demand, livable-wage, locally and regionally relevant industries” and offer Construction and Fabrication, Autotechnology, Robotics and Computer Science, Business and Entrepreneurship, Hospitality and Recreation, Industrial Arts, and Natural Resources pathways. The program emphasizes “work-based learning” and opportunities for dual credit. [College in the High School \(CiHS\) classes](#), CTE dual credit and Running Start programs allow students to earn high school and college credit simultaneously. Sustainability Studies and Environmental Science CiHS classes will be offered at Liberty Bell from Fall 2024. A dual credit planning class partnered with the Western Washington University Urban and Environmental Planning and Policy Department could prepare students for careers in local and county government to advocate for community needs, as the Methow Valley faces housing pressures and climate impacts like wildfires and water insecurity. Both Liberty Bell and WWU have expressed interest in this possibility.

Independent Learning Center internship: [The Methow Valley Independent Learning Center \(ILC\)](#) uses Big Picture Learning, which allows students to define learning goals according to their interests and apply their education to work beyond the campus. The ILC program involves a year-long internship in the Valley. For the next Sub-Unit A Plan update, an ILC student could assist the MAC and a WWU Sustainability Pathways planning fellow during the summer and continue supporting the update into the school year. While the ILC student should work closely with the MAC, the WWU fellow could provide support between structured meetings and prepare the ILC student for ongoing research and policy writing in the fall.



Source: Annika Weber

6.0 Monitoring and Evaluation

While updating the Sub-Unit A Plan is an important step toward ensuring a community that is resilient and prepared for a future of changing climate and growing population, care must be taken to monitor progress on the goals and policies it sets. During our research, we became aware of several areas where lack of data made it difficult to identify baselines and interpret how trends have changed or progressed since the development of the 2014 version of the plan. These areas include:

- Updated version of 2005 Konrad et al. comprehensive water study
- Water table depth
- Water quality monitoring for Upper Valley well/s. The only well available on Ecology groundwater map is in Twisp.
- Water rights issued compared to water rights available
- Map of areas with highest physical availability compared to areas with legal availability
- More consistent precipitation data publicly available (rather than averages over many decades)
- Annual air quality data within the Sub-Unit area (# days moderate, unhealthy for sensitive groups, etc.; monthly averages)
- Common architectural styles (e.g. shed roofing)
- Utilities serviced within the Sub-Unit area and common utility providers
- Localized emergency evacuation routes

We recognize that, given the scope of the Sub-Unit A Plan and the area it covers, localized data may be less readily available compared to larger-scale comprehensive plans with more substantial resources for data tracking. However, investing in resources or partnering with local organizations and agencies to monitor data and progress will foster accountability, allowing future committees to track trends, assess the effectiveness of strategies, and make informed decisions for ongoing improvement. The MAC might explore partnering with Liberty Bell High School's sustainability studies and environmental science classes to establish a progress tracking program for selected data points. This collaboration would offer students valuable hands-on experience in planning while enhancing MAC's data tracking efforts.

7.0 Budget

If the Mazama Advisory Committee wishes to hire a consultant to conduct the next Sub-Unit A Plan update, some key considerations include:

The work of updating the Sub-Unit Plan is a “Personal Service.” Under this designation, the MAC may request prices when selecting the consultant. Municipal Research Services Center (MRSC) defines Personal Services as “technical expertise provided by a consultant to accomplish a specific study, project, task, or other work statement.”

Table 5 indicates other factors the MAC may consider when selecting the consultant. A selection of factors may be weighed during the selection process (e.g. experience of key personnel 40%, schedule 20%, cost 40%). The selection process often includes publishing a Request for Qualifications and Request for Proposals, including scope of services, service approach, personnel, schedule, and deliverables. The MAC may request these items from multiple consultants or firms at once. Grant funding may provide additional solicitation guidelines.

Table 5. Qualifications criteria from MRSC [“Contracting for Services: Guidelines for Local Governments in Washington State.”](#)

Qualifications and fees or costs	Financial capacity
Quality of previous performance	Meets applicable licensing requirements
Ability to meet deadlines for contract performance	Safety record
Responsiveness to solicitation requirements	Ability to meet necessary response times for unscheduled work and emergencies
Compliance with statues and rules relating to contracts and services	History of errors and omissions
Ability, experience, and reputation	Staff readily available for the project
References	

Example Requests for Proposals include job description, submittal requirements, minimum qualifications, and evaluation criteria.

- [City of Sequim Comprehensive Plan Periodic Update Request for Proposals](#)
- [Whatcom County Contract 2025 Comprehensive Plan Update](#)
- [Bid: City of Stanwood 2024 Comprehensive Plan Update](#)
- RFPs did not propose prices but requested them.
- RFPs were sent two years ahead of the update.



Source: Annika Weber

8.0 Conclusion

Over the past decade, the Upper Methow Valley has experienced considerable changes, including increased wildfire frequency, shifts in tourism, and the ongoing impact of the global pandemic. These factors have heightened the urgency for strategic planning around housing affordability, climate mitigation and adaptation, and sustainable resource management. Key findings from the research highlight the critical areas of climate change mitigation and adaptation, wildfire management, water conservation, and equitable land use. The insights gained from the stakeholders Dr. Susan Prichard and Dr. Amy Snover emphasize the interconnectedness of these issues and the need for proactive, integrated approaches. Our recommendations underscore the importance of incorporating climate considerations across all elements of the plan, enhancing community resilience to wildfires, ensuring sustainable water use, and fostering inclusive economic and housing strategies. Additionally, the report advocates for greater youth involvement in the planning process, recognizing the value of engaging the next generation in shaping the future of their community. As the MAC, Okanogan County Planning Department, and other stakeholders move forward, this report not only informs the immediate update of the Sub-Unit A Plan but also serves as a model for other communities facing similar challenges. By continuing to build on these foundations, the Upper Valley can navigate the complexities of growth and change while preserving the unique character and ecological integrity that define the region.



Source: Annika Weber



9.0 Acknowledgements

Special thanks to Tammi Laninga, Associate Professor in the WWU Department of Urban and Environmental Planning and Policy, and Joshua Porter, WWU Sustainability Pathways Director. We are grateful for their extensive support throughout the process, including sourcing resources, suggesting community members who could provide deeper context, meeting to answer questions, and providing feedback on our report draft. Additional gratitude is extended to Claire Bunney of the Mazama Advisory Committee and Sustainability Pathways planning fellow Sophia White for identifying data points that needed updates and answering questions throughout the process.



Source: Annika Weber

10.0 References

- About*. (n.d.). Methow Housing Trust. <https://methowhousingtrust.org/about-take-2>
- About CTE*. (n.d.). Methow Valley School District. <https://methow.org/en-US/human-resources-851bba2b>
- About Dual Credit*. (n.d.). Methow Valley School District. <https://methow.org/en-US/human-resources-851bba2b/about-dual-credit-8aae2ef4>
- Agricultural runoff*. (n.d.). Department of Ecology State of Washington. <https://ecology.wa.gov/Water-Shorelines/Water-quality/Runoff-pollution/Agricultural-runoff>
- Aquifer storage, recovery, & recharge*. (n.d.). Department of Ecology State of Washington. <https://ecology.wa.gov/water-shorelines/water-supply/water-recovery-solutions/aquifer-storage-recovery-recharge>
- Asotin County Youth Commission*. (n.d.). Asotin County, Washington. <https://www.asotincountywa.gov/338/Asotin-County-Youth-Commission>
- Brunner, J., Malone, E., & Armstrong, K. (2016). *Methow Valley Housing Availability and Affordability Strategy & Action Plan*. https://static1.squarespace.com/static/59b5f3d5d2b85729bbc4daba/t/59c351430abd0465552a03c3/1505972667606/Methow_Valley_Housing_Needs_10.26.16.pdf
- Burn Bans & More*. (n.d.). Methow Conservancy. <https://methowconservancy.org/discover/burn-bans-more>
- City of Stanwood. (2022). *2024 Comprehensive Plan Update, Community Development—Request for Proposal*. <https://www.stanwoodwa.org/bids.aspx?bidID=12>
- About*. Clean Air Methow. (2020). <https://www.cleanairmethow.org/about>
- Community Engagement*. (n.d.). MRSC. <https://mrsc.org/explore-topics/engagement>
- Community Wildfire Protection Plan Actions Draft*. (2024). Okanogan Conservation District. https://www.okanogancd.org/files/ugd/a75605_5b90b87b53df4813afb9bf3ddbcbca87.pdf
- Construction Standards for On-Site Sewage Systems*. (2023, December 28). Okanogan County Public Health District. https://cms9files.revize.com/okanoganwa/Document_Center/Department/Public%20Health/OSS%20Liquid%20Waste/OSS%20Construction%20Standards%20for%20OnSite%20Sewage%20Systems%20%20Rev12.28.23.pdf
- Contracting for Services: Guidelines for Local Governments in Washington State*. (2024). MRSC. <https://mrsc.org/getmedia/a79caaa4-f96f-4f2b-8a5f-5e0f4afe3bde/Contracting-For-Services.pdf?ext=.pdf>
- Contreras, T., & Mickelson, K. (n.d.). *Wildfire-Associated Landslide Emergency Response Team Report: Cedar Creek and Cub Creek 2 Fires* [WALERT Report]. Washington State Department of Natural Resources Washington Geological Survey. https://www.dnr.wa.gov/publications/ger_hazards_landslide_walert_report_cedar_cub_2021.pdf

Federal Emergency Management Agency. (n.d.). Fire-resistant Construction Materials. <https://emilms.fema.gov/IS320/WM0103020text.htm>

Firewise Committee. (n.d.). Lost River Airport Association. <https://www.lostriverairport.com/member-info/firewise>

Firewise USA. (n.d.). The National Fire Protection Association. <https://www.nfpa.org/education-and-research/wildfire/firewise-usa>

General Brochure. (n.d.). Methow Dark Sky Coalition. https://www.methowdarksky.org/files/ugd/e3800e_3e86d618f50d48408b8d3366f2d0480c.pdf

Growth Management Act Basics. (n.d.). MRSC. <https://mrsc.org/explore-topics/planning/gma/growth-management-act-basics>

Hirst decision. (n.d.). Department of Ecology State of Washington. <https://ecology.wa.gov/water-shorelines/water-supply/water-rights/case-law/hirst-decision>

Hoffman, C., Machowicz, A., & Windell, B. (2024). *Methow Valley Community Bear Assessment*. Home Range Wildlife Research for Defenders of Wildlife. <https://www.homerange.org/research/human-bear-coexistence>

Hydraulic Project Approval (HPA). (n.d.). Washington Department of Fish & Wildlife. <https://wdfw.wa.gov/licenses/environmental/hpa>

Instream flow & water management rules. (n.d.). Department of Ecology State of Washington. <https://ecology.wa.gov/water-shorelines/water-supply/protecting-stream-flows/instream-flow-implementation>

Inter-Fluve, Inc. (2015). *Upper Methow River Reach Assessment: River Miles 61-80*. Yakama Nation Fisheries. <https://www.ucsr.org/reports-plans/assessments/>

King County Comprehensive Plan: Subarea plans. (n.d.). King County. <https://kingcounty.gov/en/dept/executive/governance-leadership/performance-strategy-budget/regional-planning/king-county-comprehensive-plan/subarea-plans>

Konrad, C., Drost, B., & Wagner, R. (2005). *Hydrogeology of the Unconsolidated Sediments, Water Quality, and Ground-Water/Surface-Water Exchanges in the Methow River Basin, Okanogan County, Washington* (Water-Resources Investigations Report 03-4244). U.S. Geological Survey. <https://pubs.usgs.gov/wri/wri034244/>

Legal Framework: Exempt Wells and Water Allocation in the Methow watershed. (n.d.). Methow Valley Citizens Council. <https://mvcitizens.org/subdivisions/legal-framework-exempt-wells-and-water-allocation-in-the-methow-watershed/>

Liberty Woodlands FireWise. (n.d.). Liberty Woodlands. <https://libertywoodlands.com/firewise/>

Mazama Advisory Committee. (2014). *Methow Valley More Completely Planned Area – Sub Unit A Plan*. <https://mazamaadvisorycommittee.wordpress.com/comprehensive-plans/upper-methow-valley-sub-unit-a-plan/>

McCreary, A. (2016, September 8). MV Citizens Council celebrates 40 years of activism. *Methow Valley News*. <https://methowvalleynews.com/2016/09/08/mv-citizens-council-celebrates-40-years-of-activism/>

Methow Review District Chapter 17A.200 Planned Development (PD). (2024).
<https://www.codepublishing.com/WA/OkanoganCounty/html/OkanoganCounty17A/OkanoganCounty17A200.html>

Methow State of the Salmon. (2019). Upper Columbia Salmon Recovery Board.
<https://static1.squarespace.com/static/5cf6c35a35567a0001e9c963/t/5de5dc6ac10a1a142de77393/1575345262682/Methow-State-of-the-Salmon.pdf>

Methow Valley Climate Action Plan. (2021). Resilient Methow.
<https://www.resilientmethow.org/climateactionplan>

Methow Valley Emergency Plan. (2018).
<https://cms5.revize.com/revize/twispwa/services/fire%20department/Methow%20Valley%20Emergency%20Plan.pdf>

Methow Wildlife Area. (n.d.). Washington Department of Fish & Wildlife.
<https://wdfw.wa.gov/places-to-go/wildlife-areas/methow-wildlife-area>

MV Independent Learning Center. (n.d.). MV Independent Learning Center.
<https://ilc.methow.org/en-US>

NAAQS Table. (n.d.). United States Environmental Protection Agency.
<https://www.epa.gov/criteria-air-pollutants/naaqs-table>

Okanogan County Yard Waste. (2024). Okanogan County Central Landfill.
<https://cms9files.revize.com/okanoganwa/Central%20Landfill%20Yard%20Debris.pdf>

Outdoor Burning Alternatives. (n.d.). Puget Sound Clean Air Agency.
<https://pscleanair.gov/353/Outdoor-Burning-Alternatives>

Real-time air quality map. PurpleAir. (n.d.).
<https://map.purpleair.com/1/m/i/mAQI/a10/p604800/cC5#9.03/48.5675/-120.3391>

Request for Proposals—Personal Services, 2025 Comprehensive Plan Periodic Update. (2023). City of Sequim. <https://mrsc.org/getmedia/919ce682-0f04-4bd6-9f14-677fa0951dc1/s46compupdate.pdf>

Rules for Burning Without a Permit. (n.d.). Washington State Department of Natural Resources.
https://www.dnr.wa.gov/publications/rp_burn_need_burn_permit.pdf

San Juan County Comprehensive Plan. (2022). San Juan County Community Development.
<https://www.sanjuancountywa.gov/510/Comprehensive-Plan>

Seattle Youth Commission. (n.d.). City of Seattle. <https://www.seattle.gov/neighborhoods/public-participation/boards-and-commissions/seattle-youth-commission>

Spring Yard Clean-Up Events—April 2022. (n.d.). *Clean Air Methow News & Events*.
<https://www.cleanairmethow.org/news-events/springcleanup2022>

Stamper, M. (2023, September 7). <https://methowvalleynews.com/2023/09/07/okanogan-county-water-bank-gearing-up-for-initial-deposits/>. *Methow Valley News*. *State Environmental Policy Act (SEPA)*. (n.d.). Washington Department of Fish & Wildlife.
<https://wdfw.wa.gov/licenses/environmental/sepa>

State of the Methow. (2023). Methow Conservancy. <https://methowconservancy.org/state-of-the-methow>

Subarea plans. (n.d.). King County. <https://kingcounty.gov/en/dept/local-services/buildings-property/development-planning-regulations/subarea-plans>

Tate-Libby, J. (2021). *A Comprehensive Economic Study of the Methow Valley*. TwispWorks Board of Directors. https://drive.google.com/file/d/1wpf1_fUfBjPbUL4xBWL8j5lYmZvoklQ1/view

The Growth Management Act status of Washington counties and cities. (2017, April). Department of Commerce State of Washington. <https://deptofcommerce.app.box.com/s/z8ygn0ifeimybnlh4j6v8cl1wxkp1jfa>

The Relinquishment, Rescission, and Abandonment of Water Rights. (n.d.). Department of Ecology State of Washington Water Resources Program. <https://apps.wr.ecology.wa.gov/docs/WaterRights/wrwebpdf/pol1060.pdf>

U.S. Climate Normals Quick Access. (n.d.). [Dataset]. National Centers for Environmental Information, National Oceanic and Atmospheric Administration.

Water Rights Map Search. (n.d.). [Map]. Department of Ecology State of Washington. <https://apps.wr.ecology.wa.gov/waterrightstrackingsystem/WaterRights/Map/WaterResourcesExplorer.aspx?from=menu>

What should I know about wildfires and debris flows? (n.d.). United States Geological Service. <https://www.usgs.gov/faqs/what-should-i-know-about-wildfires-and-debris-flows#:~:text=Post-fire%20landslide%20hazards%20include,and%20loss%20of%20soil%20strength>

Whatcom County Request for Proposals, 2025 Comprehensive Plan Update. (2023). Whatcom County. <https://www.whatcomcounty.us/DocumentCenter/View/77607/23-60-2025-Comprehensive-Plan-Update?bidId=>

Wood stoves & other home heating. (n.d.). Department of Ecology State of Washington. <https://ecology.wa.gov/air-climate/air-quality/smoke-fire/wood-stove-info>

WRIA 48 Methow Watershed Water Availability. (2023, May). Department of Ecology State of Washington Water Resources Program. <https://apps.ecology.wa.gov/publications/documents/2011048.pdf>

Revised Code of Washington § Chapter 43.21C RCW State Environmental Policy. <https://app.leg.wa.gov/RCW/default.aspx?cite=43.21C>

Revised Code of Washington § Chapter 77.55 RCW Construction Projects in State Waters. <https://apps.leg.wa.gov/rcw/default.aspx?cite=77.55>

Okanogan County Code § Chapter 17A.140 Rural Residential. <https://www.codepublishing.com/WA/OkanoganCounty/html/OkanoganCounty17A/OkanoganCounty17A130.html>

Okanogan County Code § Chapter 17A.130 Methow Review District. <https://www.codepublishing.com/WA/OkanoganCounty/html/OkanoganCounty17A/OkanoganCounty17A130.html>

Washington Administrative Code § WAC 173-518-030 Definitions.

<https://app.leg.wa.gov/wac/default.aspx?cite=173-518-030>

Washington Administrative Code § Chapter 173-548 WAC Water Resources Program in the Methow River Basin, WRIA 48. <https://app.leg.wa.gov/WAC/default.aspx?cite=173-548&full=true>

Revised Code of Washington § RCW 36.70A.080 Comprehensive plans-Optional elements.

<https://app.leg.wa.gov/rcw/default.aspx?cite=36.70A.080>

Revised Code of Washington § RCW 36.70A.020 Planning goals.

<https://app.leg.wa.gov/rcw/default.aspx?cite=36.70a.020>

Revised Code of Washington § Chapter 36.70A RCW Growth Management - Planning by Selected Counties and Cities. <https://app.leg.wa.gov/rcw/default.aspx?cite=36.70A>

11.0 Appendix

11.1 Appendix A

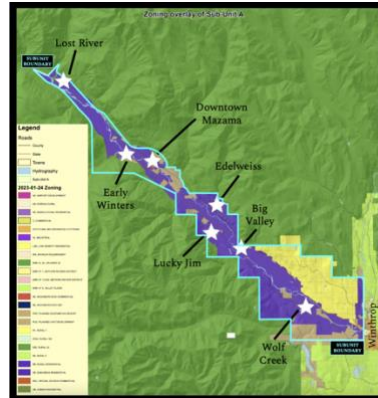
Interview Questions:

- Dr. Amy Snover, former director, Climate Impacts Group, University of Washington
 - What existing conditions and forecasts related to climate change do you think are most important to articulate in the Sub-Unit A Plan?
 - What policies related to climate change do you think are most important to articulate in the Sub-Unit A Plan?
 - What are especially effective resiliency strategies that you've seen other communities weave into their comprehensive plans?
 - How is legal availability of water distributed compared to current and forecasted physical availability?
 - What are some improvements in climate change mitigation and resilience that you've seen since the last Sub-Unit update in 2014?
 - Are you aware of any strategies for mitigating impacts of rain on snow events and other consequences of warmer winter temperatures?
 - How do wildfires and rain on snow events interact?

- Dr. Susan Prichard, fire ecologist, School of Environmental and Forest Sciences, University of Washington
 - How have wildfire patterns in the Methow Valley changed over the past ten years?
 - What areas within Sub-Unit A are most vulnerable to wildfire?
 - What existing conditions and forecasts related to wildfire risk or climate change do you think are most important to articulate in the Sub-Unit A Plan?
 - What policies related to wildfire risk or climate change do you think are most important to articulate in the Sub-Unit A Plan?
 - What areas within the Sub-Unit area are most in need of treatment (thinning, prescribed burning, etc.)?
 - How have fire management practices changed/improved over the past 10 years? (local/state/national levels)
 - How can different stakeholders, including federal, state, and local agencies, collaborate more effectively to create comprehensive fire management policies?
 - What impacts do wildfires near/within watersheds have on water quality, aquatic ecosystem health, potential for severe flooding, etc.?
 - How do you balance the beneficial and detrimental impacts of fire in different circumstances?

11.2 Appendix B

Survey Questions:



- Using the map above, notice the turquoise lines indicating the Sub-Unit boundary. **Do you live in the Sub-Unit area?**
Sub-Unit A encompasses the northwestern edge of Winthrop to the northernmost edge of the Lost River Airport community. It includes Wolf Creek, and the Rendezvous.
- If you answered yes to the previous question, are you a full-time or part-time resident?
- Where do you work?
 - Mazama
 - Winthrop
 - Twisp
 - Somewhere else in Okanogan County
 - Remote — employed somewhere IN Okanogan County
 - Remote — employed somewhere OUTSIDE Okanogan County
 - Retired
 - Other
- What do you love most about the Sub-Unit area? (3–5 examples)
- What do you want to preserve or protect in the Sub-Unit area? (3–5 examples)
- What changes do you want to see in the Sub-Unit area? (3–5 examples)
- What concerns you the most about the Sub-Unit area? (3–5 examples)
- Listed below are focus areas that the MAC have identified as imperative to address and update in the Sub-Unit revision:
 - Climate Change

- Fire-wisdom Principles
 - Fish and Wildlife Habitat (migration corridors, species introduction, and winter range)
 - Housing Solutions
 - Land Use Zoning
 - Public Facilities (National Forest land, parking, trail heads)
 - Recreational Impacts (trail and parking use)
 - Resource Extraction (gravel, grazing, timber, mining, tourism)
 - Rural Character Preservation
 - Scenic Corridor Management
 - Transportation (more vehicle traffic / public transportation)
 - Severe Weather Events & Drought
 - **If not previously mentioned in your answers, do you have any hopes, concerns, or other comments regarding these focus areas?**
- Do you have any comments about this survey itself?
 - *Our future community, and the MAC, thanks you for offering your time and energy to this effort.*
 - Do you own or operate a commercial business in the Sub-Unit A area? If you answer yes, we invite you to click [here](#) to take our survey for business owners.