

Okanogan County

Draft Environmental Impact Statement for Okanogan County Comprehensive Plan

November 3, 2021

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Cover Letter
Environmental Impact Statement (Draft)
Proposed Revision to the Okanogan County Comprehensive Plan
November 3, 2021

To Interested Parties and Agencies

Okanogan County is pleased to transmit this Draft Environmental Impact Statement (DEIS) for the proposed revisions to the Okanogan County Comprehensive Plan. The proposed revisions to the Comprehensive Plan impact all areas of the County with the exception of the areas within incorporated cities and towns, and the areas contained within the boundaries of the Reservation of the Colville Confederated Tribes (CCT). The comprehensive plan only designates the boundaries of the Colville Reservation and the zoning remains the Minimum Requirement District as before.

Okanogan County published a draft of the revised Comprehensive Plan and initiated a State Environmental Policy Act (SEPA) scoping period in November 2018. The County prepared and issued a DEIS in 2019.

The 2019 DEIS considered the impacts of 3 alternatives within the revised Comprehensive Plan. A fourth alternative was proposed during the 2018 scoping period which was also reviewed in the 2019 DEIS. The County accepted comments on the Comprehensive Plan and DEIS, and conducted a public hearing on August 19, 2019.

After considering comments on the 2018 Draft Comprehensive Plan and the 2019 DEIS, the County is issuing a revised Draft Comprehensive Plan and is issuing a revised DEIS on November 3, 2021. Among other environmental considerations addressed in this DEIS, the key environmental considerations addressed in this DEIS are impacts to water supply, transportation, and wildfire management. Okanogan County has ordered a 30-day comment period on the revised Comprehensive Plan and the revised DEIS. The comment period will begin on November 10, 2021, and end on December 10, 2021. A public hearing has been scheduled before the Okanogan County Regional Planning Commission on November 29, 2021. A Final EIS (FEIS) will be issued following the end of the comment period and subsequent review of the DEIS and the Comprehensive Plan by the Planning Commission. The FEIS will focus the review of environmental impacts on the preferred alternative with additional review as necessary to evaluate proposed amendments to the Comprehensive Plan draft.

Issuance of the FEIS and the review of the revised Comprehensive Plan by the Okanogan Board of County Commissioners are anticipated in December 2021.

Questions regarding the revised Comprehensive Plan or the DEIS may be directed to Stephanie Palmer at spalmer@co.okanogan.wa.us or the above listed address.

Sincerely,

Stephanie Palmer

EIS Fact Sheet

Project Title and Description: include a brief description of the proposal and its location, include description and location of the alternatives if different.

Okanogan County adopted an updated Comprehensive Plan in 2014. The County has elected to draft proposed revisions to the 2014 Comprehensive Plan, which are the subject of analysis for this draft environmental impact statement (DEIS).

Name and Address of Proponent (with proposed date for implementation):

Proponent: Okanogan County Planning Department
123 5th Avenue North, Suite 130
Okanogan, Washington 98840

Proposed date of implementation: December 31, 2021

Name and Address of Lead Agency Responsible Officials:

Lead Agency: Okanogan County Planning Department
Responsible Official: Stephanie Palmer
Position/Title: Director of Planning
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Contact Persons for Lead Agencies:

Same

List of Permits and Approvals: should be as complete as possible, note any which may be tentative or potential, include federal, state and local jurisdiction permits.

The adoption of a revised Comprehensive Plan and land use designation map is a County-wide non-project legislative action presented for approval to the Okanogan County Board of County Commissioners.

Once the DEIS is issued, the Planning Commission will conduct public hearings on the proposed comprehensive plan and consider any comments on the adequacy or needed additions/changes to the DEIS. After the Planning Commission makes its recommendations, a final EIS will be issued and the Board of County Commissioners will conduct their final review and adoption. The process is governed by Chapter 36.70 RCW, concerning the adoption of a comprehensive plan or other official control, and chapter 43.21C RCW and chapter 197-11 WAC, concerning the SEPA/EIS process and requirements.

Authors and Principal Contributors:

The following are Agency individuals who were either reviewers or principal contributors to the preparation of the EIS:

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- Angela Hubbard, Planner II
- Gene Wyllson, GIS Coordinator
- David Gecas, Chief Civil Deputy Prosecuting Attorney

The following are Contract individuals who were either reviewers or principal contributors to the preparation of the EIS:

Tess Brandon, Land Use Planner, Van Ness Feldman LLP

Date of Issue of the Draft EIS:

The date for the release of the Draft EIS is November 10, 2021

Date DEIS Comments are due:

December 10, 2021: Written comments will be due

Oral public comment will be closed at the end of the Planning Commission hearing on November 29, 2021, unless continued. The written record will be held open until December 10, 2021 to permit additional written comments including issues identified during the public hearing.

Public Meetings:

The Planning Commission received the 2021 draft Comprehensive Plan. The Planning Commission discussed the 2021 draft Comprehensive Plan at the Planning Commission Workshop on October 25, 2021. The Planning Commission will conduct a public hearing on the proposal and DEIS on November 29, 2021, and will take up final review after the close of the comment period on December 10, 2021. Planning Commission meetings are open to the public and are listed on the County website at <https://www.okanogancity.com/planning>.

Projected Date of Issue of Final EIS:

The final EIS is scheduled to be issued after the recommendation of the Planning Commission is made and no later than one week prior to the Board of County Commissioners' meeting where the matter is to be considered. It is anticipated that the Board of County Commissioners will take the matter up in December 2021.

Subsequent Environmental Review

Subsequent environmental review would be included for all permits processed under the terms of the new zoning ordinance as required by Chapter 197-11 WAC for all non-exempt activities. Subsequent environmental review will also be required for supplementing ordinances including zone code, building code, subdivision code, and critical areas ordinance.

EIS Availability: identify how copies of the EIS can be acquired and their cost, if applicable.

The EIS is online for no cost at the Okanogan County Planning Department website:

<http://www.okanogancounty.org/planning/>

Printed copies of the draft and final EISs may be picked up at

123 5th Avenue North, Suite 130 Okanogan, Washington 98840

At no cost .

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1 Overview

1.1 Purpose and Need

Okanogan County's proposed action is to complete an update of the County's existing (2014) Comprehensive Plan pursuant to the Planning Enabling Act (Chapter 36.70 RCW). Although the County does not Plan under the Growth Management Act (Chapter 36.70A RCW) (GMA), as appropriate, this Plan includes elements under the GMA, including the designation, conservation, and protection of resource lands and critical areas.

The primary objective of the 2021 Comprehensive Plan is to plan for the next 20 years of projected population growth in the County. In addition to its primary objective, the 2021 Comprehensive Plan includes the following general objectives:

- G-1. The County will develop and implement a public involvement strategy to ensure the opportunity for early and continuous citizen participation throughout the Comprehensive Plan update process and future updates to development regulations. This strategy will be open to all individuals and groups including those who have not traditionally participated in the planning process.
- G-2. The County will seek the participation of the Colville Confederated Tribes as a recognized tribe with reservation land within the boundaries of the County when updating the Comprehensive Plan. The County will establish a protocol for integrating the updated Comprehensive Plan with the comprehensive plan prepared by the Tribes for the Colville Reservation and Trust Lands as is necessary and appropriate.
- G-3. The County will seek the participation of the Yakama Nation as a recognized tribe with special interests in Okanogan County as their Usual and Accustomed areas.
- G-4. Okanogan County shall periodically review the Critical Areas Ordinance, Shorelines Master Program, Flood Management Programs, and Hazard Mitigation Plan as required by state law and/or at the discretion of the Board of County Commissioners to ensure compliance with the land use policies contained in this Comprehensive Plan.
- G-5. The County will, at the discretion of the Board of County Commissioners, revise and update the More Completely Planned Area (MCPA) plans, including the Methow Valley MCPA Plan and Methow Valley MCPA Mazama Community Master Plan Sub Unit A, for consistency with the Comprehensive Plan.
- G-6. In partnership with the incorporated cities and towns, the County will establish City Expansion Areas that will provide adequate land to meet projected needs of the city or town.
- G-7. It is the intent of Okanogan County to adopt a Comprehensive Plan that contains the required elements in accordance with RCW 36.70, the Planning Enabling Act, and any required elements of the GMA. The Comprehensive Plan will be used as a tool to protect the customs, cultures, and economic stability of Okanogan County and as a guide to promote consistency amongst other adopted regulations whether mandated or elective.
- G-8. It is the expectation of Okanogan County that when State, Federal, or Regional agencies prepare, implement, and update plans and regulations, that they are consistent with the County's Comprehensive Plan and adopted regulations.

1.2 Study Area

The primary study area includes all unincorporated lands of Okanogan County. The comprehensive plans of individual cities and towns serve as the plans for the incorporated areas in the County.

1.3 Summary of Findings

Chapter 3 of the DEIS contains the full text of the effects analysis, including a discussion of potential mitigation measures. A summary overview of the comparison of Alternatives is presented in chart format below.

	Alternative 1 (no action)	Alternative 2	Alternative 3	Alternative 4
Growth	Growth will occur. Accommodates medium population growth scenario.	Growth will occur. Accommodates medium population growth scenario.	Growth will occur. Accommodates medium population growth scenario.	Growth will occur. Accommodates medium population growth scenario.
Surface Water	All alternatives will result in increased water use, but the sources of such water may vary.	<p>All alternatives will result in increased water use, but the sources of such water may vary.</p> <p>Increases land designated as agricultural resources compared to Alternative 1, which may increase water use to serve agricultural purposes.</p> <p>Encourages clustering of density adjacent to the transportation grid, which may reduce the creation of impervious surfaces as well as the need for vegetation removal.</p>	<p>All alternatives will result in increased water use, but the sources of such water may vary.</p> <p>Allows more development to be served by existing water systems and the sources of water that those systems rely upon.</p> <p>Increases lands designated as agricultural resources compared to Alternative 1, which may increase water use to serve agricultural purposes.</p> <p>Encourages clustering of density adjacent to the transportation grid, which may reduce the creation of impervious surfaces as well as the need for vegetation removal.</p>	<p>All alternatives will result in increased water use, but the sources of such water may vary.</p> <p>Allows more development to be served by existing water systems and the sources of water that those systems rely upon.</p> <p>Encourages clustering of density adjacent to the transportation grid, which may reduce the creation of impervious surfaces as well as the need for vegetation removal.</p>
Ground Water	Accommodates more development in rural areas, which increases reliance on groundwater.	<p>Recognizes the importance of adopting development regulations that are responsive to the varying quantity of groundwater for potable water supplies.</p> <p>Accommodates less development in rural areas and</p>	<p>Recognizes the importance of adopting development regulations that are responsive to the varying quantity of groundwater for potable water supplies.</p> <p>Increases lands designated as agricultural resources</p>	Restricts development that does not comply with the adopted instream flow rules for each watershed.

	Alternative 1 (no action)	Alternative 2	Alternative 3	Alternative 4
		<p>associated groundwater use than Alternative 1, but more than Alternatives 3 and 4.</p> <p>Increases lands designated as agricultural resources compared to Alternative 1, which may result in increased water use to serve agricultural purposes.</p>	<p>compared to Alternative 1, which may result in increased water use to serve agricultural purposes</p>	
Wetlands	<p>Relies on site-specific review and enforcement of the CAO and SMP to protect wetlands on a site-specific basis.</p> <p>Includes in rural designation area mapped as potentially containing wetlands</p>	<p>Relies on site-specific review and enforcement of the CAO and SMP to protect wetlands on a site-specific basis.</p> <p>Includes in rural designation area mapped as potentially containing wetlands.</p>	<p>Relies on site-specific review and enforcement of the CAO and SMP to protect wetlands on a site-specific basis.</p> <p>Reduces impacts to critical areas by reducing the area of influence and directing growth where impacts have already occurred.</p>	<p>Relies on site-specific review and enforcement of the CAO and SMP to protect wetlands on a site-specific basis.</p> <p>Reduces impacts to critical areas by reducing the area of influence and directing growth where impacts have already occurred.</p>
Aquifer Recharge Areas	<p>Higher level of growth accommodated in rural areas may increase the likelihood of impacts to aquifer recharge areas due to the use of OSS systems.</p>	<p>Higher level of growth accommodated in rural areas may increase the likelihood of impacts to aquifer recharge areas due to the use of OSS systems</p>	<p>Reduces growth that would rely on groundwater wells and OSS systems, and thus may result in a decreased impact on aquifer recharge areas compared to Alternatives 1 and 2.</p>	<p>Reduces growth that would rely on groundwater wells and OSS systems, and thus may result in a decreased impact on aquifer recharge areas compared to Alternatives 1 and 2.</p>
Air	<p>Same level of growth accommodated by all alternatives; overall impact to air quality from growth will be similar. Location of air quality impacts may differ.</p> <p>Does not include objectives specific to air quality.</p>	<p>Same level of growth accommodated by all alternatives; overall impact to air quality from growth will be similar. Location of air quality impacts may differ.</p> <p>Does not include objectives specific to air quality.</p>	<p>Same level of growth accommodated by all alternatives; overall impact to air quality from growth will be similar. Location of air quality impacts may differ.</p> <p>Does not include objectives specific to air quality.</p>	<p>Same level of growth accommodated by all alternatives; overall impact to air quality from growth will be similar. Location of air quality impacts may differ.</p> <p>Includes objectives specific to maintaining air quality, including incentivizing developers to heat new homes with devices other than</p>

	Alternative 1 (no action)	Alternative 2	Alternative 3	Alternative 4
				wood stoves, assisting with conversion of uncertified stoves or fireplaces to pellet stoves, propane, certified stoves, or other affordable heat sources, and discouraging open burning.
Visual Impacts	Accommodates more growth in rural areas, as compared to Alternatives 3 and 4, which may lead to increased light pollution in those areas.	Accommodates more growth and associated visual impacts in rural areas compared to Alternatives 3 and 4, but encourages growth in CEAs compared to Alternative 1, where visual impacts are already occurring.	Encourages growth in CEAs and away from rural areas, thus concentrating light pollution in areas where it already exists and away from areas where light pollution is limited under existing conditions.	Encourages growth in CEAs and away from rural areas, thus concentrating light pollution in areas where it already exists and away from areas where light pollution is limited under existing conditions. Includes an objective to adopt an ordinance allowing overlays that require new buildings and parking to achieve Dark Sky compliance in appropriate locations
Geologically Hazardous Areas	Development would be subject to restrictions set forth in the County's critical areas regulations.	Development would be subject to restrictions set forth in the County's critical areas regulations. Includes goals and objectives directing the County to reduce risk associated with development in areas of geologic hazard. Compared to Alternative 1, directs growth into areas of existing development, where less new ground disturbance and vegetation removal would be necessary to support new or	Development would be subject to restrictions set forth in the County's critical areas regulations. Includes goals and objectives directing the County to reduce risk associated with development in areas of geologic hazard. Compared to Alternative 1, directs growth into areas of existing development, where less new ground disturbance and vegetation removal would be necessary to support new or	Development would be subject to restrictions set forth in the County's critical areas regulations. Compared to Alternative 1, directs growth into areas of existing development, where less new ground disturbance and vegetation removal would be necessary to support new or redevelopment, thereby reducing landslide and erosion hazard risk.

	Alternative 1 (no action)	Alternative 2	Alternative 3	Alternative 4
		redevelopment, thereby reducing landslide and erosion hazard risk.	redevelopment, thereby reducing landslide and erosion hazard risk.	
Frequently Flooded Areas	Higher potential impact for floodplain impacts than Alternatives 3 and 4 because Alternative 1 includes area mapped by FEMA within the Okanogan River 100-year floodplain.	Higher potential impact for floodplain impacts than Alternatives 3 and 4 because Alternative 2 includes area mapped by FEMA within the Okanogan River 100-year floodplain. Directs County to utilize flood planning to protect human life and riparian ecosystems.	Directs County to utilize flood planning to protect human life and riparian ecosystems.	
Wildfire	Accommodates growth in remote areas outside of the main transportation corridors that are at relatively higher risk of damage from wildfire.	Encourages growth in CEAs compared to Alternative 1, which may be less susceptible to wildfire risk, where access and fire suppression response time may be better.	Encourages growth in CEAs, which may be less susceptible to wildfire risk, where access and fire suppression response time may be better. Larger lot size may minimize risk to residential structures from wildfire.	Encourages growth in CEAs, which may be less susceptible to wildfire risk, where access and fire suppression response time may be better. Larger lot size may minimize risk to residential structures from wildfire.
Plants and Animals	Accommodates growth in rural areas where plants and animals may be more likely to be present and affected.	Decreased likelihood of impacts on plant and animal species and their habitat compared to Alternative 1. Includes objectives specific to protection of fish and wildlife habitat conservation areas.	Decreased likelihood of impacts on plant and animal species and their habitat compared to Alternative 1. Includes objectives specific to protection of fish and wildlife habitat conservation areas.	Decreased likelihood of impacts on plant and animal species and their habitat compared to Alternative 1.
Transportation	Accommodates more growth in areas with primitive roads compared to all other Alternatives.	Accommodates more growth in areas with primitive roads than Alternatives 3 and 4, but encourages growth in CEAs,	Encourages growth in CEAs, which would likely decrease development in areas accessible only by primitive	Encourages growth in CEAs, which would likely decrease development in areas accessible only by primitive roads compared to Alternative 1,

	Alternative 1 (no action)	Alternative 2	Alternative 3	Alternative 4
	Traffic congestion would likely increase in rural high density zones but likely see smaller increases in traffic congestion in rural low density zones.	which would likely decrease development in areas accessible only by primitive roads compared to Alternative 1, but increase traffic congestion in CEAs.	roads compared to Alternative 1, but increase traffic congestion in CEAs.	but increase traffic congestion in CEAs.
Land Use and Housing	Majority of growth and housing would likely continue as single-family homes in rural areas of the County	Relies on market demand coupled with other regulation, such as the CAO & SMP, along with a connection between growth and available water to direct growth.	Relies on market demand coupled with other regulation, such as the CAO & SMP, along with a connection between growth and available water to direct growth. Encourages larger lot sizes in the resource designations to avoid conflict with agriculture operations and to minimize risk to residential structures from wildfire.	Discourages intensive residential, commercial, and industrial development. Larger lot sizes are implemented in the resource designation to avoid conflict with agriculture operations.
Utilities	Growth is more likely to occur in rural areas, where utility services may not be as readily available.	Accommodates growth in rural areas, where utility services may not be as readily available, but also encourages growth in CEAs, where utility services are already concentrated.	Directs growth towards cities, towns and their expansion areas, where utility services are already concentrated.	Directs growth towards cities, towns and their expansion areas, where utility services are already concentrated.
Recreation	Designates greater amount of land as recreational resource, compared to other alternatives.	Decreases the amount of land set aside specifically for recreation as compared to Alternative 1, and allows for comparatively fewer recreation opportunities than under Alternative 1. Adoption of CEAs under Alternative 2 may increase	Decreases the amount of land set aside specifically for recreation as compared to Alternative 1, and allows for comparatively fewer recreation opportunities than under Alternative 1. Adoption of CEAs under Alternative 3 may increase	Rural areas are designated according to their unique attributes to avoid conflicting uses and protect rural assets. This would like support recreation activities at a similar rate as compared to Alternative 1. Adoption of CEAs under Alternative 4 may increase tourism as compared to Alternative 1.

	Alternative 1 (no action)	Alternative 2	Alternative 3	Alternative 4
		tourism as compared to Alternative 1.	tourism as compared to Alternative 1.	

2 Alternatives

Okanogan County is updating its Comprehensive Plan in compliance with the Planning Enabling Act. To facilitate the public review of the revised Comprehensive Plan, the County identified three alternatives; a fourth alternative was suggested by the public. The following summarizes the different assumptions and policies contained within the four alternatives. This DEIS analyzes the impacts of four alternatives. While this DEIS does not review a revised zone map proposal it will by necessity review potential changes in the zone code, primarily the zone map, which would be consistent with the four Comprehensive Plan alternatives.

The primary objective of the revised Comprehensive Plan is to plan for the next 20 years of projected growth in Okanogan County. The Board of County Commissioners adopted the Office of Financial Management (OFM) medium growth target for population in the County in the next 20 years. Accordingly, this DEIS analyzes each of the alternatives based on the medium growth scenario.

2.1 Alternative 1

Alternative 1 is the no action alternative, which leaves the 2014 Comprehensive Plan in place. The 2014 Comprehensive Plan was written with the assumption that many existing parcels would not be developed due to an undesirable location or other problems that make further development undesirable or infeasible. The 2014 Comprehensive Plan uses a rural high-density designation, a rural resource low-density designation, and a recreation resource designation. Alternative 1 relies on site- and project-specific review to enforce existing regulations to avoid and/or minimize environmental impacts. Alternative 1 relies on market demand, the availability of potable water supplies, and the ability of local soils to support on-site septic (OSS) systems to direct growth.

Table 1 (below) lists the approximate 2014 Comprehensive Plan distribution of land use designations by acreage and percentage.

Table 1. Summary of acreage within land use designations: 2014 Comprehensive Plan (Alternative 1)

Designation	Area (acres)	Percent total
Rural	267,286.6	7.2%
Rural Resource	473,271.9	14%
Recreation Resource	1,956,526.4	58%
City	7,747.7	0.2%
Neighborhood Commercial	5,501	0.16%
Reservation	662,220.8	19.6%
Total	3,372,554.4	

Rural Designation

The rural designation in the 2014 Comprehensive Plan follows the transportation grid and captures areas that already display urban characteristics by the existing development pattern. R-1 zoning is predominate in the rural designation except in those areas where local perception led to the conclusion that water supply was limited or the transportation grid would not support more intense levels of development. In those areas, R-5 and R-20 zones were assigned.

The rural designation supports a wide variety of land uses, including residential, commercial, industrial, agricultural, tourist, and recreational activities.

Resource Lands

The 2014 Comprehensive Plan adopted a Recreation Resource designation and a Rural Resource designation. Public lands are designated Recreation Resource because these public lands serve a vital role in the Okanogan County economy, supporting resource activities (mining, grazing, and forestry), and recreation activities (hunting, fishing, skiing, backcountry packing, hiking, camping, motorized and non-motorized access).

The Rural Resource designation applies to more remote private lands that are outside of major transportation, public service, facility, and development corridors, but still accommodate low density residential, recreational, and resource lands, and critical areas. This designation includes subareas such as the Methow More Completely Planned Area. All agricultural and resource uses are permitted in this designation (e.g., mines with conditional use permits) subject to limits set in subareas. The Rural Resource designation also accommodates a wide variety of residential uses, tourist facilities, and recreational services.

City Expansion Areas

The 2014 Comprehensive Plan contains policies regarding CEAs and recognizes CEAs as areas suitable for more intense levels of residential, commercial, and industrial development. However, the 2014 Comprehensive Plan map does not adopt any of the CEAs proposed by cities in the County. The 2016 zone code revision that followed the 2014 Comprehensive Plan did not adopt any CEAs.

Unincorporated Towns and Neighborhood Commercial Centers

The 2014 Comprehensive Plan identifies the unincorporated towns and neighborhood commercial centers. The 2014 Comprehensive Plan includes approximately 5,501 acres as neighborhood commercial. The unincorporated towns designated in the 2014 Comprehensive Plan could be zoned as neighborhood commercial under the 2016 zone code. Policies in the 2014 Comprehensive Plan encourage commercial development in the unincorporated towns to allow them to continue to serve as neighborhood commercial zones. Residential development is allowed although subject to the same limitations imposed by water supply and OSS regulations as elsewhere in the County.

2.2 Alternative 2

Alternative 2 reflects the proposed amendments to the 2021 Comprehensive Plan under review. Alternative 2 relies on market demand, other regulation, such as the CAO and Shoreline Master Program (SMP), and a connection between growth and available water to direct growth. Agriculture and residential development are allowed in all designations with underlying zoning assigned in accordance with the ability of the area to support potable water supply and OSS as well as proximity to the transportation grid.

The following table lists the distribution of land use designations by acreage and percentage in Alternative 2.

Table 2. Summary of acreage within land use designations: Alternative 2

Designation	Area (acres)	Percent total
Rural	135,794.6	4%

Agricultural Resource	734,852.4	21.8%
Forest Resource	1,825,119.8	54.1%
Mining Resource	849.3	0.02%
Neighborhood Commercial	569	0.02%
City	8,938.4	0.3%
Reservation	664,076.7	19.7%
Total	3,370,200.2	

Rural Designation

Alternative 2 reduces the area of rural designation along main transportation routes, decreasing the rural designation to 135,794.57 acres (4% of Okanogan County land mass) as compared to Alternative 1 (267,286.6 acres; 7.2%). The rural designation under Alternative 2 does not capture as much of the areas already showing urban characteristics off the transportation grid as Alternative 1.

Resource Lands

Alternative 2 changes the recreation resource and rural resource designations under Alternative 1 to agricultural resource and forest resource. Agriculture and forest resource lands are designated utilizing primary soil classifications and current land use, consistent with criteria defined in the GMA. The mineral designation is an overlay identifying existing mine sites. Alternative 2 designates 734,852.4 acres of land in the agricultural resource designation (21.8% of the land mass of Okanogan County) and 1,825,119.8 acres in the forest resource designation (54.1% of the land mass of Okanogan County). In total, 75.9% of the land mass of Okanogan County under Alternative 2 is designated as resource land, as compared to 72% designated as resource (recreation resource or rural resource) in Alternative 1.

In designating agricultural lands of long-term commercial significance, Alternative 2 uses primarily soil classification and existing crop and grazing patterns as designation criteria. Private lands with a Department of Revenue (DOR) code have been assigned agriculture resource or forest resource designations, as appropriate. The agricultural resource designation allows residential development and recognizes that large parcels of land tend to avoid the conflict between residential development and farm operations. Residential clustering is allowed on land less suited to agricultural activities if the legal and physical availability of potable water supplies supports development along with proximity to the transportation grid and the ability of local soils to support OSS systems.

Mineral lands are designated by DOR code (85) and also by Department of Natural Resources Active Surface Mine locations. Many of these are old mining claims that have not been open for years. Under Alternative 2, 849.3 acres are designated as mineral lands.

City Expansion Areas

In Alternative 2, the CEAs proposed by the cities are adopted on the land use designation map. Growth is encouraged within the CEAs, but Alternative 2 does not require infill or any other specific approach to growth in CEAs. Alternative 2 assumes that market demand and the ability of the city to serve the CEA, coupled with the historically modest growth levels throughout the County, will constrain growth.

Unincorporated towns and neighborhood commercial centers

Alternative 2 identifies the unincorporated towns and neighborhood commercial centers. The area designated includes the area of the original town plats and tracts of surrounding land under common

ownership and/or reconciled to parcel boundaries. The designation as unincorporated towns in the Comprehensive Plan would make the assignment of the neighborhood commercial zone compatible. Commercial development in the unincorporated towns is encouraged to allow them to continue to serve as neighborhood commercial zones. Residential development is allowed although subject to the same limitations imposed by water supply and OSS regulations as elsewhere in the County.

2.3 Alternative 3

Alternative 3 proposes a more restricted regulatory approach to rural development relative to the other alternatives. Alternative 3 additionally relies on other regulations such as the CAO and SMP, along with a connection between density and available water to direct growth.

The following table lists the distribution of land use designations by acreage and percentage in Alternative 3.

Table 3. Summary of acreage within land use designations: Alternative 3

Designation	Area (acres)	Percent Total
Rural	32,408.5	1.0%
Agricultural Resource	841,290.2	24.9%
Forest Resource	1,827,366.3	54.1%
Mining Resource	848.6	0.03%
Neighborhood Commercial	406	0.01%
City	8,942.6	0.3%
Reservation	664,074.8	19.7%
Total	3,375,337	

Rural Designation

Alternative 3 proposes a rural designation that follows only the major transportation grid and the rural designation does not extend into areas outside of fire districts or into critical areas. As a result, Alternative 3 designates 32,408 acres in the rural designation, which is 1.0% of Okanogan County land mass. This is a reduced area compared to Alternative 1 (7.2% of County land mass) or Alternative 2 (4% of County land mass). Alternative 3 uses regulation requiring where possible the consolidation of non-conforming lots to achieve a higher portion of large lots in the rural designation.

The rural designation in Alternative 3 does not capture areas already showing urban characteristics that are off the major transportation grid. These areas are largely assigned an Agricultural Resource designation in Alternative 3. As with other alternatives, development in the rural areas is tied to the physical and legal availability of potable water supplies.

Resource Lands

Similar to Alternative 2, Alternative 3 changes the rural resource and recreation resource designations used in the 2014 Comprehensive Plan (Alternative 1) to agricultural resource and forest resource. Alternative 3 designates 841,290.2 acres as agricultural resource, which is 24.9% of the land mass of Okanogan County and 1,827,366.3 acres in the forest resource designation, which is 54.1% of the land mass of Okanogan County. In total, 79% of the land mass of Okanogan County under Alternative 3 is designated as resource land, compared to 75.9% under Alternative 2 and 72% under Alternative 1. This increased land area largely comprises lands designated Rural under Alternative 2.

Agriculture and forest resource designations utilize primarily soil classifications and current land use as criteria for designation. The mineral designation is an overlay identifying existing mine sites.

Larger lot sizes are desired in the resource designations to avoid conflict between residential and agricultural uses and to minimize risk to residential structures from wildfire. Alternative 3 uses regulation requiring where possible the consolidation of non-conforming lots to achieve a higher portion of large lots in the resource areas. As with Alternative 2, residential clustering is allowed on land less suited to agricultural activities if the legal and physical availability of potable water supplies supports development along with proximity to the transportation grid and the ability of local soils to support OSS systems.

City Expansion Areas

The CEAs are designated in Alternative 3. Alternative 3 relies on the cities/towns and their CEAs to serve most of the population growth by taking a more restricting approach to growth in the rural areas.

Unincorporated Towns and Neighborhood Commercial Centers

The unincorporated towns and neighborhood commercial centers are designated in Alternative 3, but are smaller than under Alternatives 1 and 2 and restricted primarily to the existing town plats and immediate area. Residential development is discouraged in the unincorporated towns and neighborhood commercial centers except where water and sewer systems exist or where residential activities are already present and supported by legally and physically available potable water supplies. Both residential and commercial growth is encouraged in the cities and towns and their expansion areas commensurate with their ability to provide municipal services.

2.4 Alternative 4

During the scoping period, the Methow Valley Citizens Council (MVCC) suggested a fourth alternative. MVCC did not suggest a land use map for their proposed Alternative. Therefore, this DEIS analyzes the potential impacts from Alternative 4 at a high level, based on the general policies identified by MVCC.

Alternative 4 is more prescriptive in terms of subsequent zone designations than Alternative 3 but there is commonality in terms of the objectives of each.

Rural Designation

Alternative 4 includes up to 4 rural designations (e.g. residential, resource, transitional, remote) to recognize areas within the rural environment with unique attributes, avoid conflicting uses, and protect rural assets. Unlike Alternatives 1-3, which rely heavily on underlying zoning for guidance, Alternative 4 includes policies in the Comprehensive Plan describing each rural land use designation, its intent, and the density and types of uses allowed.

Resource Lands

Alternative 4 designates resource lands to indicate areas where the County will promote long term commercially viable agriculture, forest, and mineral uses and will discourage intensive residential, commercial, and industrial development. Larger lot sizes are implemented in the resource designations to avoid conflict with agriculture operations.

City Expansion Areas

The city expansion areas are designated in Alternative 4.

Unincorporated Towns and Neighborhood Commercial Centers

Alternative 4 directs more of the population growth into the cities and towns and their expansion areas where it can be served by municipal water and sanitary sewer systems, rather than into unincorporated towns and neighborhood commercial centers.

3 Effects Analysis

3.1 Accommodating Growth

3.1.1 Population Projections

Okanogan County has had historically low population growth. Per the 2020 Census, approximately 60.8 percent of the total county population resides in unincorporated areas. This percentage has grown steadily over the past 50 years, with only approximately 47.7 percent in unincorporated areas in 1970.

The Office of Financial Management (OFM) provides a low, medium, and high range of growth projections for the future. Table 4 summarizes each of these projections in terms of persons and number of households relative to the County population from the 2020 Census of 43,084.¹

Table 4. Summary of low, medium, high OFM growth projections.

	Growth Scenario		
	Low	Medium	High
Total 2040 population	38,493	45,621	57,894
Change in population	-4,591	2,537	14,810
Change in households*	-1,929	1,066	6,223

* Based on 2020 Census data showing average of 2.38 people per household in Okanogan County.

3.1.2 Growth Capacity

Land availability does not appear to be a limiting factor on growth in the County as a whole in the next 20 years. To estimate the capacity of land in the County to accommodate projected growth, an analysis of existing developed and undeveloped land was performed. The analysis inventoried existing parcels in the unincorporated areas of each Water Resource Inventory Area (WRIA) in the County, classifying each as developed or undeveloped based on County Assessor land use codes.

Table 5 summarizes the number of existing developed and undeveloped land. Detailed results are provided in appendices to this DEIS.

Table 5. Summary of growth capacity analysis by WRIA.

WRIA	Total Existing Lots	Total Developed Lots	Total Undeveloped Lots
47 – Chelan	0	0	0
48 – Methow	9,324	4,612	4,712
49 – Okanogan			
50 – Foster*			
52 – Sanpoil*	1,936	691	1,245
60 – Kettle	2,353	680	1,673

* Located partially within the Colville reservation.

The number of existing undeveloped lots, without the creation of additional lots, accommodates all OFM growth scenarios because the number of undeveloped lots exceeds the project change in households under all growth scenarios. In addition to existing undeveloped lots, additional lots could be created in the future through subdivision, although the number of future lots varies by Alternative and

¹ Population statistics for the County vary slightly by source. According to the U.S. Census, the 2020 population of the county was 43,130.

may be constrained by the presence of critical areas or restrictions on water availability, which would limit developability.

3.1.3 Historic Rates of Development

The actual rate of development was estimated by reviewing building permit history in Okanogan County from 2010 through 2018. Total building permits issued since 2010 are summarized by WRIA in Table 3.

Table 6. Building permits issued by WRIA, 2010-2018

WRIA	Building Permits
47 – Chelan	0
48 – Methow	534
49 – Okanogan	652
50 – Foster	3
52 – Sanpoil	42
60 – Kettle	24

Since 2010 an average of approximately 122 building permits per year have been issued for single-family residences. Based on the 2020 Census average of 2.38 persons per household, that number correlates with a growth rate of approximately 290 people per year, or 5,517 people and 2,318 households by 2040.

The building permit analysis did not identify whether the homeowner was already a County resident and/or were moving from an incorporated area of the County, nor did it analyze whether the permitted residence was a second or vacation home. As a result this analysis likely overestimates the overall population growth rate the County should anticipate over the next 20 years.

3.1.4 Discussion

The number of existing undeveloped lots could accommodate any of the OFM growth scenarios, regardless of future subdivision of land. Anecdotal evidence suggests that many lots that were previously subdivided remain unsold and/or not developed after many years. Because the number of undeveloped lots that exists today could accommodate any of the OFM growth scenarios, the Alternatives considered would not constrain growth.

If population growth in the County tracked the growth rate predicted from past building permit issuance (290 people per year), the population growth would fall in between the medium and high growth OFM growth scenarios (5,517 people and 2,318 households by 2040). Several factors, however, may reduce the likelihood of a high growth scenario, including: lack of desirable area; subsequent lack of water; lot size does not support OSS; and lack of well-defined or constructed road access.

Therefore, the Board of County Commissioners has adopted the OFM’s medium growth scenario for the next 20 years, and the Alternatives considered offer different policy approaches to accommodate that growth scenario. This DEIS evaluates the impacts of each of the Alternatives assuming the medium growth projection. The Alternatives will influence the distribution of that growth throughout the County. Specifically, the Alternatives differ in the extent to which they direct growth to the urban centers and their expansion areas as compared to the unincorporated areas of the County. The rate and extent of impacts to the settlement patterns depend in part on the ability of cities and towns to secure

sufficient future water supplies to facilitate growth, and in part on the ability of those living outside of municipal water service areas to demonstrate legal water availability.

3.2 Water Resources

3.2.1 Surface Water

Existing conditions

Several major rivers flow in Okanogan County, including the Columbia River, the Methow River, the Chewuch River, the Twisp River, the Similkameen River, and the Okanogan River. Some of these rivers originate in the mountains of British Columbia and flow south across the border into the United States. Okanogan County encompasses 7 different WRIA, of which 5 are located only partially within the County. WRIA 50 (Foster) and WRIA 52 (Sanpoil) are located partially within the boundary of the Colville Reservation. WRIA 51 (Nespelem) is located completely within the boundary of the Colville Reservation. WRIA 60 (Kettle) is located partially within Ferry County. WRIA 47 (Chelan) has a very small portion located within Okanogan County. WRIA 48 (Methow) and 49 (Okanogan) are completely located within Okanogan County.



Figure 1. WRIAs in Okanogan County. Source: Okanogan County website.

Foster Creek Watershed (WRIA 50)

Less than 5% of the Foster Creek Watershed is located within Okanogan County. The Foster Creek Watershed encompasses about 578,182 acres and supports a population of just under 24,000 people. Bridgeport and Mansfield are the primary population centers. The watershed is located within the Columbia Basin and Northern Rockies ecoregion and receives approximately 10 inches of rain per year. Primary land use is agricultural, including range (approximately 69%) and other agriculture (24%).

Kettle River Watershed (WRIA 60)

The Kettle River originates in the Okanogan Highlands and Monashee Mountains of southern British Columbia and drains approximately 4,200 square miles. Approximately 24% of the watershed is within Okanogan County. The major drainage in the watershed is the Kettle River. Average annual precipitation over the basin is about 18 inches a year.

There are approximately 2,804 people living in the Kettle Basin. The majority of people live in unincorporated areas. Approximately 73% of the land in the watershed is forested, with approximately 18% used for range land. Rugged, high mountains are the dominant feature of this region.

Methow River Watershed (WRIA 48)

A tributary of the Columbia River, the Methow is bordered on the west by the Cascade mountains, on the north by Canada, on the east by Buckhorn Mountains and the Okanogan River drainage, and on the south by the Columbia River and the Sawtooth Ridge. The river drains a 1,805 square mile area. Topography within the basin is varied and ranges from mountainous sub-alpine terrain along the Cascade Crest to the gently sloping, wide valley found along the middle reaches of the Methow River. The basin is a closed hydraulic system, with all water originating as precipitation, and no water leaving the Basin other than via evaporation and streamflow.

There are approximately 5,889 people living in the Methow Valley census county division. The primary population centers are Brewster and Twisp.

Okanogan River Watershed (WRIA 49)

The Okanogan River Watershed encompasses about 2,100 square miles in Washington State. This watershed extends north and south from the Canadian border to the Columbia River. The watershed is within the Columbia Basin, Cascades, and Northern Rockies ecoregions. Mean precipitation over the Okanogan River Watershed is 15 inches.

There are approximately 32,855 people living in the Okanogan Basin. The primary population centers are Omak and Okanogan. The majority of people live in unincorporated areas. The largest land uses in the basin are forested lands (51%) and agricultural lands (39%).

Climate Change

Changes in temperature and precipitation will continue to decrease snow pack and will affect stream flow and water quality throughout the Pacific Northwest region. Warmer temperatures will result in more winter precipitation falling as rain rather than snow throughout much of the Pacific Northwest, particularly in mid-elevation basins where average winter temperatures are near freezing. This change will result in:

1. Less winter snow accumulation,
2. Higher winter streamflows,
3. Earlier spring snowmelt,
4. Earlier peak spring streamflow and lower summer streamflows in rivers that depend on snowmelt (most rivers in the Pacific Northwest)

The decline of the region's snowpack is predicted to be greatest at low and middle elevations due to increases in air temperature and less precipitation falling as snow. The average decline in snowpack in the Cascade Mountains, for example, was about 25% over the last 40 to 70 years, with most of the decline due to the 2.5 degrees F increase in cool season air temperatures over that period. As a result, seasonal stream flow timing will likely shift significantly in sensitive watersheds (Littell et-al., 2009).

This DEIS does not evaluate any specific climate change model or discuss measures, either locally or on a global basis, that may or may not alter the path of climate change. Impacts of future water use on surface water resources may be intensified by climate change due to reduced water availability over time.

Analysis of impacts

Both quantity and quality of surface water are the subject of a number of policy objectives in the Comprehensive Plan under all Alternatives.

Growth and development within watersheds can result in impacts to surface water quantity and quality. With respect to water quality, increased impervious surface coverage may lead to higher levels of non-point source pollution through storm water runoff. Vegetation removal to accommodate development can lead to increase in surface water temperatures. Relative to Alternative 1, Alternative 2 requires zoning with greater density and more intensive uses be located adjacent to urban centers and major transportation corridors. Alternatives 3 and 4 contain similar but more restrictive assignment of land use designations. The proposed policies in the Alternatives 2, 3, and 4 encourage clustering of density adjacent to the transportation grid to reduce impacts and minimize the footprint of development. Reducing the overall footprint of development and promoting a more compact transportation grid reduces the potential for creation of impervious surfaces as well as the need for vegetation removal.

The growth accommodated by all of the Alternatives will also result in increased water use, however, the sources of such water may vary based on the development pattern of each Alternative. Alternatives 3 and 4 rely on the cities/towns and their CEAs to serve most of the population growth, which would allow such development to be served by existing water systems and the sources of water that those systems rely upon. Rural development (accommodated to a greater extent by Alternatives 1 and 2, as compared to Alternatives 3 and 4) relies primarily on groundwater for consumptive water use, and impacts are discussed in more detail in section 3.2.2 of this DEIS. As noted in that section, consumptive use of groundwater can impact surface water quantity if there is hydraulic continuity between the groundwater and surface water. Further analysis of impacts to surface water related to groundwater consumption is in section 3.2.2 of this DEIS.

In addition, Alternatives 2 and 3, which increase lands designated as agricultural resource compared to Alternative 1, may result in increased water use to serve agricultural purposes. The extent to which Alternative 4 increases lands designated for agricultural resource is not clear from the proposal. The source of such water could be surface water or groundwater (discussed below).

Impacts of future water use on surface water resources may be intensified by climate change due to reduced water availability over time.

Mitigation measures

In 1998, the Washington State Legislature passed the Watershed Management Act, Chapter 90.82 RCW (WMA), to set a framework for managing water resources and protecting water rights. The Act provides a framework for collaborative watershed planning and requires planning units to address water quantity by undertaking an assessment of water supply and use in the management area and developing strategies for future use. Okanogan County participates in watershed planning activities in the Foster Creek, Kettle, Methow, and Okanogan planning units. Policies included under Alternatives 2 and 3 direct

the County to conduct watershed planning and further assessments of water resources. More detail on the WRIA 48 and 49 watershed plans is provided in section 3.2.2 of this DEIS.

Local regulations that help mitigate development impacts on surface waters include the County's SMP and its CAO. The SMP governs lakes over 20 acres and streams and rivers with more than 20 cfs mean annual flow, as well as associated uplands to 200 feet from the ordinary high water mark. The SMP establishes preferred shoreline uses that are consistent with preventing damage to the natural environment or are unique to or dependent on a shoreline location. All new uses within shoreline jurisdiction must be designed and operated to ensure no net loss of shoreline ecological functions.

Okanogan County updated its SMP in June 2018. The goals and objectives from the most current Okanogan County SMP are incorporated into Alternatives 2 and 3 by reference. An analysis of the functionality of existing shorelines was completed as a part of the review and update process for the SMP. The results of this analysis find that the shorelines in Okanogan County are generally functioning at a high level under the current Comprehensive Plan (Alternative 1) and SMP.

The revised SMP reviewed the required structural setbacks in addition to creating a vegetation management area within which vegetation removal is very restricted. The vegetation management area is based on the SMP designation of the waterway and ranges from a minimum of 25 feet to 175 feet. The creation of the management area is designed to greatly reduce the environmental impact of activities adjacent to shorelines and preserve a no-net-loss standard for shoreline development.

The County is currently conducting an update of its CAO consistent with best available science. The ordinance includes protective standards for water bodies, including riparian buffer requirements and vegetation removal standards.

The County works with the U.S. Environmental Protection Agency and the Colville Tribes Environmental Trust department to ensure that construction that involves discharges to water complies with the National Pollution Discharge Elimination permit process.

3.2.2 Groundwater

Existing conditions

Groundwater is water that collects or flows beneath the earth's surface, percolating through and filling the porous spaces in soil, sediment, and porous rocks, as well as fractures in hard rock. Groundwater originates from rain, melting snow and ice, irrigation, surface water, and infiltrated stormwater. Groundwater fills aquifers so that wells can withdraw water, and emerges at the land surface as springs. (DOE).

Public lands are the source of major water resources, including lakes and streams providing recharge of groundwater and irrigation flows that are essential to the County's economy. As recognized in the 2014 Comprehensive Plan (Alternative 1), the County assumes that the responsible agencies manage the public lands under their control to foster all appropriate uses within their statutory and regulatory authority. The County does not exercise specific zoning control on public lands in conflict with state and federal statutes, but the County does issue subdivision, shoreline, public health, land use, and building permits on activities on public lands not otherwise preempted by state or federal laws.

Groundwater is the primary source of potable water for rural development. Under the State's Groundwater Code (Chapter 90.44 RCW), certain small uses of groundwater are exempt from the need

to obtain a water right permit. These uses include domestic or industrial uses of up to 5,000 gallons per day, irrigation of a lawn or garden of up to one half-acre in size, and stockwater. These permit-exempt withdrawals have historically been a common method for securing water for residential development in rural areas where public water from municipal water systems is not available.

While this section focuses on groundwater, rules adopted by the Washington State Department of Ecology (Ecology) governing instream flows of surface water are relevant to the analysis. To protect surface water quantity, Ecology establishes instream flow rules that require a certain amount of water be left in streams before water may be withdrawn for new uses. Although groundwater permit-exempt uses do not require a water right permit, they are subject to state water law, including that new groundwater uses may not impair previously established minimum instream flows. Ecology has established instream flow rules for only two of the WRIA's in the County—WRIA 47 and WRIA 48. Instream flow rules have not been promulgated for WRIA 47 (Chelan), WRIA 50 (Foster), WRIA 51 (Nespelem), WRIA 52 (Sanpoil), or WRIA 60 (Kettle).

The extent to which these instream flow rules govern groundwater withdrawals has been a source of contention that the legislature attempted to resolve through ESSB 6091 in 2018, such that the extent to which different instream flow rules apply or otherwise restrict permit exempt withdrawals is different depending on the basin. Pursuant to that legislation, the rule established for the Methow Basin (WRIA 48) (WAC 173-548) explicitly regulates permit exempt groundwater withdrawals, such that evidence of an adequate water supply must be consistent with the specific applicable requirements. The rule appropriates 2 cfs of surface water in each of 7 reaches for domestic use and stock watering. This appropriation is senior in priority date to the surface water appropriated for instream flow. In 2011, Aspect Consulting prepared a report which estimated the number of groundwater users, both current and future, and the amount of groundwater each used (see summary in the appendix to this DEIS). The report found that, except for the lower Methow Reach, there was water remaining in the reserve in each of the 7 reaches.

WAC 173-548 when adopted in 1976 closed several streams and lakes to further appropriation of water (WAC 173-548-150). In 1991, the rule was amended to extend the closure to groundwater in hydraulic continuity with the closed surface water bodies. Maps were generated by Ecology which identified those areas where hydraulic continuity was thought to occur. In 2019, Ecology began a process to review and if necessary revise these maps. Late in 2018, Ecology changed their position in terms of their ability to assess hydraulic continuity and the possible impact of permit exempt wells in the restricted areas of the closed basins. As a result of this and due to concerns over water supply for additional lots, the Board of County Commissioners adopted a water availability study area within the restricted areas and adopted regulations preventing the creation of additional lots that will rely on permit exempt wells pending the results of further study of available water supply.

Ecology has also established an instream flow rule for the Okanogan Watershed (WRIA 49) (WAC 173-549). With the adoption of ESSB 6091 in 2018, the State Legislature found that WAC 173-549 does not explicitly regulate permit exempt wells. Because almost every year the instream flow drops below the appropriated amount (see Figure 2 in section 3.2.1 of this DEIS), the Okanogan is identified as a Hirst-affected basin. As a result, the Initiating Governments (Okanogan County, City of Omak, and the Oroville-Tonasket Irrigation District) were required by the Legislature to work in consultation with the WRIA planning unit and affected tribes to prepare an update to the watershed plan. The updated plan

was completed by Aspect Consulting in 2020. The plan projects that 596 new wells will be installed over the next twenty years (through 2038), resulting in 0.28 cfs of new consumptive water use. Ecology adopted the updated plan by order on January 28, 2021.

Instream flow rules have not been promulgated for WRIA 47 (Chelan), WRIA 50 (Foster), WRIA 51 (Nespelem), WRIA 52 (Sanpoil), or WRIA 60 (Kettle). In those WRIA's permit-exempt withdrawals are not subject to, or limited by, instream flows.

Analysis of impacts

Methods

This chapter of the DEIS discusses the potential impact that future development will have on groundwater. The discussion will focus primarily on the use of permit exempt wells in the unincorporated areas of the County because it is the most common source of water supply for rural development.

To calculate the amount of water needed for future development, this DEIS calculates projected consumptive water use through 2040 using three sources:

1. The results of the 2011 Aspect Consulting report for WRIA 48;
2. Guidance published by Ecology; and
3. The results of the 2020 Aspect Consulting report for WRIA 49.

All three methods provide figures for the water consumptively used for in-house domestic purposes and outdoor watering.

Aspect Consulting conducted a study in WRIA 48 that examined, among other data aerial photos and available records from Class A water systems to calculate the amount of water used by a typical household. The calculations include both indoor and outdoor use. The Aspect report includes stock watering for livestock on a non-commercial basis. The study also calculates the amount of water that is consumptively used.

The source documents listed above are provided in appendices to this DEIS.

Results

The medium range of the population projections estimates 1,066 new households countywide. For each of the three sources described above, Table 7 summarizes the total average water consumptively used on a per-day, per-household basis, and as a total quantity estimated using the OFM medium projection. The numbers presented include both indoor and outdoor consumptive use. It is not anticipated that all of the water use identified would come from groundwater; instead, Table 7 represents the total increase in projected consumptive use from the medium population growth scenario through 2040.

Table 7. Total projected consumptive water use using Aspect Consulting and Ecology guidance.

	Aspect 2011 (WRIA 48)	Ecology	Aspect 2020 (WRIA 49)
Average water consumptively used per household	205 GPD	364 GPD	319 GPD
Total water consumptively used through 2040	244.9 AF	434.8 AF	381.0 AF

Associated impacts to surface water

The relationship (hydraulic continuity) between groundwater and surface water varies with location.² USGS Scientific Investigations Report 2009-5143. . Well depths in this region vary greatly, which changes the timing and extent of the impact of withdrawals on surface water. The USGS report found that many areas in these basins had insufficient water to support more than minimum development. This finding led the Board of County Commissioners to adopt a water availability study area which includes the Upper Tunk, Lower Tunk, and Tamarack Spring hydrologic cataloging units. This action prevents the creation of new lots that rely on exempt wells to provide potable water.

As explained above, in WRIAs 48 and 49, the use of permit-exempt wells are generally subject to minimum instream flows. These rules limit the ability of new development to rely on permit-exempt wells. Ecology has not established instream flow rules in the remaining WRIAs in the County. Thus, permit-exempt well use in those WRIAs are not subject to minimum instream flows.

Climate Change

Climate change is discussed in Section 3.2.1 above. Although this DEIS does not evaluate any specific climate change model, impacts of future water use on groundwater may be intensified by climate change due to reduced water availability over time.

Comparison of alternatives

Both quantity and quality of groundwater are the subjects of a number of policy areas covered by the Comprehensive Plan. Under Alternative 1, there would be no change to the existing Comprehensive Plan policies with respect to groundwater. The current Comprehensive Plan (Alternative 1) requires that the County ensure an adequate, safe water supply through the protection of both the quantity and quality of ground and surface water for a variety of beneficial uses such as public consumption, agriculture, industry, and habitat protection. Under Alternatives 2 and 3, the revised Comprehensive Plan contains policies that recognize the importance of adopting development regulations that are responsive to the varying quantity of groundwater for potable water supplies, and that consider the intensity and location of development and associated impacts to available groundwater supplies. Revisions to the Comprehensive Plan, which would be adopted under Alternatives 2 and 3, are explicit in requiring that development be planned for and allowed only in close consideration of water availability, including municipal water needs. Alternative 4 explicitly restricts development that does not comply with the adopted instream flow rules for each watershed

² See USGS Scientific Investigations Report 2009-5143.

The Alternatives under review in this DEIS will also impact the amount of groundwater used through influence on the settlement pattern. While all Alternatives plan for the same number of households anticipated in the medium growth scenario, the impact of future water use may vary on the location of development. Alternative 3 and Alternative 4 would direct a higher proportion of growth to the cities and towns and their respective expansion areas. Thus, under Alternatives 3 and 4 a higher percentage of households would be located in areas where they would be served by municipal water systems. This would result in a commensurate reduction of the new households in rural areas using permit exempt wells, and thus could decrease reliance on groundwater and impacts thereto.

Mitigation measures

Okanogan County has secured funding to conduct an analysis throughout the County that will calculate the average water used per household and to create a well tracking/accounting system. The analysis will be similar to the approach used by Aspect in 2011, and would monitor consumptive water usage against the 2 cfs set-aside in WRIA 48, among other usages.

Anecdotal information from well drillers reveals that in some areas of the County replacement wells have been drilled to replace wells that have gone dry. No coordinated research has been conducted on this issue. A future study or reporting system from the well drillers and/or public health would provide valuable information that would inform other land use regulation and future comprehensive plan reviews.

In WRIA 48, current interim zoning regulations restrict reliance on permit-exempt withdrawals and the extension of those regulations would further limit impacts on groundwater resources, and surface water resources in hydraulic continuity with such groundwater. WRIA 48 has a watershed plan adopted in 2005. The watershed council is now working on the implementation phase of the plan. WRIA 48 has an instream flow rule that regulates water withdrawals. Areas that are in hydraulic continuity with closed surface waters are closed to further appropriation. Seven reaches have a two cubic foot per second (cfs) set aside for single domestic and stock use, that has priority over the instream flows. Currently the county is working on a well tracking system to monitor consumptive water usage against the 2 cfs set-aside.

The 2020 watershed plan for the Okanogan River Basin (WRIA 49) includes 21 projects and actions that, together, will offset approximately 3.85 cfs of stream flow impacts, or approximately 13 times the 0.28 cfs potential consumptive use impacts to instream flows projected to occur in the basin over the next 20 years.³

Chapter 173-200 WAC establishes groundwater quality standards to protect existing and future beneficial uses of groundwater by reducing or eliminating pollution.

3.2.3 Wetlands

Existing conditions

Wetlands are areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of

³ Department of Ecology's Order Adopting the Updated Watershed Plan for Water Resources Inventory Area 49 (Okanogan River Basin), January 28, 2021.

vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

The U.S. Fish and Wildlife Service produces the National Wetlands Inventory (NWI), a national map of potential wetland types and extents using a biological definition of wetlands. The NWI maps potential wetland areas within the floodplains of major drainages in the County, including the Okanogan River floodplain between Ellisforde and Oroville; the Similkameen River floodplain north of Palmer Lake; and the Methow River between Mazama and Winthrop. Actual presence, extent, and type of wetlands must be established through field survey.

Analysis of impacts

Although the Comprehensive Plan does not directly permit development, development accommodated by the Comprehensive Plan may result in future impacts to wetlands, including drainage for agriculture and filling for industrial, commercial, or residential development. These impacts can lead to irreversible damage to and loss of wetland functions.

The Alternatives under review in this DEIS will influence the impact of new development on wetlands mostly through influence of the settlement pattern, and specifically by the shifting of population growth from the unincorporated areas to the urban centers and their expansion areas. All Alternatives rely on site-specific review and enforcement of the CAO and SMP to protect wetlands on a site-specific basis.

Alternative 2 revises the existing resource and rural land designations to reduce the intensity of development away from urban centers. Both Alternative 1 and Alternative 2 propose significant Rural-designated areas along major transportation corridors, including along the Okanogan River between Ellisforde and Oroville. As described above, this area is mapped by the U.S. Fish and Wildlife Service as having the potential to contain wetlands. Development within these areas would be constrained by the presence of wetlands and associated critical areas provisions (see below), but overall this pattern of development could lead to increased wetland impacts compared to Alternatives 3 or 4.

Alternative 3 would direct a higher proportion of growth to the cities and towns and their respective expansion areas, where such growth would be 1) served by municipal water and sewer systems and 2) be in areas where habitat impacts have already occurred. This would result in a commensurate reduction of the new households in rural areas using permit exempt wells and OSS systems. The footprint of human impact would be reduced by Alternative 3, which may reduce impacts to critical areas by reducing the area of influence and directing growth where impacts have already occurred.

Alternative 4, much like Alternative 3, directs more of the population growth into the cities and towns and their expansion areas where it can be served by municipal water and sanitary sewer systems. Alternative 4 is more prescriptive in terms of subsequent zone designations than Alternative 3 but there is commonality in terms of the objectives of each.

Mitigation measures

Wetlands are protected in the Okanogan CAO. Within the CAO, development standards apply to land division and new construction. Standards include a prohibition on most land uses within wetlands, and a requirement for vegetated buffers in varying widths determined by wetland category and adjacent land use intensity. These standards are intended to prevent adverse impacts to wetlands resulting from

development and to require compensatory mitigation where adverse impacts are unavoidable. The County is currently conducting an update of its CAO consistent with best available science.

All Alternatives require that Okanogan County follow the Washington State Rating System for Eastern Washington to classify wetlands based on their sensitivity to disturbance, their significance, their rarity, and our ability to replace them and the functions that they provide.

As discussed above, the NWI maps potential wetlands in proximity to major rivers in the County. These rivers are also regulated as shorelines of the state under the SMP, which contains provisions specific to shoreline-associated wetlands. These provisions work in concert with the CAO to ensure that development does not result in a net loss to wetland functions.

3.2.4 Aquifer Recharge Areas

Existing conditions

Aquifer recharge areas are areas that, due to the presence of certain soils, geology, and surface water, act to recharge ground water by percolation. A critical aquifer recharge area is an area with a critical recharging effect on aquifers used for potable water.

Aquifers not only provide water for domestic use but influence water availability for fish, wildlife, recreation, and agriculture in wetlands, lakes, rivers and streams. Groundwater contributes to these water bodies while they return the favor when groundwater supplies become depressed. This, in turn, lowers surface water levels, thus, risking the viability of those dependent on these water sources.

Currently, no specific aquifer recharge studies have been performed in the County. But it is generally acknowledged that the following areas have the potential to be aquifer recharge areas: rivers and creeks especially at their headwaters, forests, wetlands, lakes and ponds, alluvial fans, and areas within the 100-year floodplain. These areas are only considered aquifer recharge areas if certain porous soil types are found to be present as identified by the Soil Conservation Service (1980 Soil Survey of Okanogan County Area, Washington).

In most areas, it is presumed that compliance with the requirements for OSS systems adequately protects critical areas, including aquifer recharge areas. In some cases, however, contaminants may be introduced through OSS systems. Studies have shown that contaminants from OSS systems have contaminated shallow ground water supplies but the impact is not universal. In a study in La Pine Oregon several factors were found to contribute to the vulnerability:

1. The ground-water table is shallow, typically less than 20 feet below land surface and seasonally rising to within 2 feet in low-lying areas.
2. The sandy soils allow rapid infiltration of septic system effluent to the water table.
3. The amount of rain and snowmelt that enters the aquifer is small, which limits dilution of septic system effluent.
4. Most existing drinking-water wells draw water from shallow sand and gravel deposits within 50 feet of land surface. These deposits form the primary aquifer in the area.
5. Fifty-eight percent of lots are less than 1 acre and 82 percent are less than 2 acres, making residential densities relatively high for an area where homes are dependent on individual septic systems and wells.

Studies conducted in the Methow Basin in the early 1990s showed little concentration of contaminants in waters tested, but a study prepared by Northwest Land and Water, Inc. points out that some level of contamination in the Methow has been found. A resident in the Deer Run Planned Development states their annual water quality test has failed to detect contaminants. The Champerty Shores development located in the north end of the county was required to extend water service from the City of Oroville due to contamination in their water supply well and their inability to construct a new well that could pass water quality tests. Their test results would fluctuate with the operation of the surrounding irrigation systems. When the neighboring orchards were being irrigated, which corresponds with a higher level of percolation through the soils, the level of contaminants was usually higher. Champerty Shores is a subdivision with lots mostly less than ½ acres in size.

Analysis of impacts

All Alternatives rely on site and project specific review to enforce the CAO and SMP to avoid and/or minimize environmental impacts, including those to aquifer recharge areas. Additionally, the CAO imposes regulations on minimum lot size requirements and hazard waste disposal to eliminate aquifer recharge contaminants.

The Alternatives vary in the likelihood of development near aquifer recharge areas and the degree that development may negatively impact aquifer recharge areas.

Both Alternatives 1 and 2 allow development subject to the ability to support potable water supply and proximity to the transportation grid. Although there are existing regulations which restrict development in aquifer recharge areas, Alternatives 1 and 2 allow for higher levels of growth in rural areas. Corresponding use may increase the likelihood of impacts to aquifer recharge areas due to the use of OSS systems. Impacts may include potential for contamination from OSS systems. In addition, increases in impervious surfaces in otherwise undeveloped, rural areas could affect water flows and reduce groundwater recharge. Additionally, under Alternative 2 portions of the rural designation fall within the Okanogan River floodplain. However, development in these areas would be restricted through project specific review if the proposed development was within the floodplain or in an area that is designated as an aquifer recharge area.

Both Alternatives 3 and 4 direct population growth and development to cities, towns, and CEAs where development can be served by municipal water and sewer systems. Accordingly, the number of homes and other development that rely on groundwater wells and OSS systems would decrease. This may decrease the impact on aquifer recharge areas compared to Alternatives 1 and 2, which support growth in rural portions of the county.

Mitigation measures

This section describes existing regulations or new measures that could be employed to mitigate potential impacts on aquifer recharge areas associated with the Alternatives.

The Comprehensive Plan works in concert with the SMP, CAO, Okanogan County Zone Code, and Okanogan County Subdivision regulation. The policies contained in the proposed Comprehensive Plan do not direct the reduction of review processes or protections contained in these bodies of regulation. To mitigate the impacts of the Alternatives on aquifer recharge areas, the County can continue to enforce the regulations of the SMP, CAO, County Zoning Code, and Subdivision regulations and update the regulations as needed.

Although aquifer recharge areas in the County have not been mapped, to reduce the impacts associated with development of OSS systems, the County could also map the aquifer recharge areas and impose appropriate conditions on developments in those areas.

3.3 Air

Existing Conditions

Air quality in Okanogan County is affected by a variety of different sources, including existing transportation, construction, commercial and industrial sources, wildfires as well as wood stoves and open burning of waste. Okanogan County, however, currently meets air quality standards under the National Ambient Air Quality Standards (DOE) for carbon monoxide, lead, nitrogen dioxide, Ozone, Particulate matter, and sulfur dioxide.

Analysis of impacts

Although the Comprehensive Plan does not directly permit development, growth and development accommodated by the Comprehensive Plan may result in impacts to air quality from construction, increased vehicular traffic, increased use of wood stoves, and potential higher risk of human induced wildfire. Air quality impacts from development, including proposed roadway expansions, will be evaluated on a project specific basis. Air quality impacts associated with growth in the County under the medium growth scenario are not anticipated to result in the exceedance of National Ambient Air Quality Standards.

Alternatives 1, 2, and 3 do not include objectives specific to air quality. Alternative 4 includes objectives specific to maintaining air quality, including incentivizing developers to heat new homes with devices other than wood stoves, assisting with conversion of uncertified stoves or fireplaces to pellet stoves, propane, certified stoves, or other affordable heat sources, and discouraging open burning. These objectives may reduce potential air quality impacts associated with future growth accommodate under Alternative 4, in comparison with Alternatives 1, 2, and 3.

Growth and development is directed to different locations in the County under each Alternative. Localized air quality impacts from the Comprehensive Plan may vary by Alternative based on where development is directed. Air quality impacts from growth may be felt more acutely in areas of increased density.

Mitigation

Okanogan County's emergency management system puts out public announcement pertaining to air quality and personal safety during wildfire situations pertaining to air quality and safety measures individuals should take if or when working or going outside.

Conditions are placed on permits to address air quality surrounding dust control, marijuana growers, and other issues.

3.4 Land

Okanogan County is the largest County in the State of Washington in terms of land mass. Within its boundaries are large expanses of publicly owned land with the federal government being the largest landowner. The Reservation of the Colville Confederated Tribes is in Okanogan County as well. The mix of ownership and regulatory authority creates a variety of land use regulations which must be considered in any land use planning effort.

3.4.1 Visual Impacts

Existing conditions

Light pollution is a side effect of industrial growth based on building exterior and interior lighting, advertising, commercial properties, offices, factories, streetlights, and illuminated sporting venues, and is concentrated in cities and urban areas of the County.

Rural areas of Okanogan County have limited light pollution. However, homes and their outdoor lighting may impact natural aesthetics even in rural areas, particularly if they are built on ridgetops.

Analysis of impacts

Although the Comprehensive Plan does not directly permit or induce development, increased growth and development accommodated under the Comprehensive Plan will lead to increases in light pollution. Because none of the Alternatives constrains growth, light pollution will increase under each Alternative. However, the location and concentration of light pollution varies in location under each Alternative.

Under Alternative 1, commercial development is encouraged in unincorporated towns and residential development subject to water supply and OSS regulations, which would likely lead to increased degree of light pollution compared to existing rates in those areas. The rural high density designation captures areas that already display urban characteristics with existing development patterns and follows the transportation grid. Light pollution in rural areas is likely to increase with growth.

Compared to Alternative 1, growth is encouraged in CEAs under Alternative 2. Encouraged growth in CEAs would likely increase the amount of light pollution in these areas compared to Alternative 1. Under Alternative 2, commercial development is encouraged to allow continued service as neighborhood commercial zones, which would likely increase the degree of light pollution in these areas, which are already experiencing light pollution.

Both Alternatives 1 and 2 accommodate more growth in rural areas, as compared to Alternatives 3 and 4. Increased growth in rural areas may result in light pollution in areas that previously have had limited to no light pollution.

Under Alternative 3, the resource land designation is increased to 79% as compared to 72.2% under Alternative 1. Light pollution in resource lands may increase if resource land development occurs that would require the use of night lighting. Additionally, Alternative 3 encourages consolidation of non-conforming uses to achieve greater lot sizes. If the number of structures on each lot size stays the same while the lot sizes increase, light pollution would likely increase at a lesser degree compared to Alternative 1. Residential clustering is allowed if legally and physically available on land less suited to agricultural uses under Alternative 3. Residential clustering may produce a higher degree of light pollution in concentrated areas. Alternative 3 encourages growth in CEAs and away from rural areas, thus concentrating light pollution in areas where it already exists and away from areas where light pollution is limited under existing conditions.

Alternative 4 directs more population growth into cities and towns, rather than unincorporated towns and neighborhood commercial centers. Therefore, light pollution would most likely increase in areas with already existing light pollution compared to Alternative 1. Also under Alternative 4, larger lot sizes are designated in resource designations to avoid conflict with agricultural operations and resource lands are designated to discourage intensive residential, commercial, and industrial development. Alternative

4 includes an objective to adopt an ordinance allowing overlays that require new buildings and parking to achieve Dark Sky compliance in appropriate locations.

Mitigation measures

Light pollution is unavoidable with development, but mitigation and regulations to promote dark skies can reduce the impacts. To mitigate the impacts of light pollution and protect the ability to view the night sky, the County could update its land use code and work with other jurisdictions to reduce the impacts of light pollution. For example, the County could adopt regulations in appropriate zones governing lighting for commercial and other development that could mitigate impacts. Additionally, the County could utilize subarea planning as a tool to further focus its efforts in appropriate locations.

The County could adopt the Dark Skies initiative to increase awareness of and reduce light pollution issues.

3.4.2 Geologically Hazardous Areas

Existing conditions

Geologically Hazardous areas are areas that, because of their susceptibility to erosion, sliding, earthquake, or other geological events, are not suited to siting commercial, residential, or industrial development consistent with public health or safety concerns. The County's CAO classifies five different geologically hazardous areas: erosion hazard areas; landslide hazard areas; mine hazard areas; seismic hazard areas; and volcanic hazard areas. Existing mine hazard areas in the County are mapped largely along the major transportation corridors. Currently, there are no known active faults in Okanogan County. The CAO also stated that no mapping is necessary to address volcanic hazard areas.

Okanogan County is identified as one of the jurisdictions that have the greatest vulnerability for landslides in the State of Washington Hazard Mitigation Plan, specifically along the west side of the County in the Cascade Mountains.⁴

Analysis of impacts

The Comprehensive Plan does not itself generate impacts on earth resources themselves, but development that occurs over the planning horizon could cause grading, erosion and sedimentation, other site disturbance, and expanded impervious areas.

As compared with Alternative 1, Alternatives 2 and 3 introduce goals and objectives directing the County to reduce risk associated with development in areas of geologic hazard. These will be implemented through updates to the County's critical areas regulations in accordance with best available science.

Mine hazard areas in the County are mapped largely along the major transportation corridors. All proposed Alternatives concentrate development along these corridors to varying degrees. As such, potential impacts to mine hazard areas between Alternatives are anticipated to be similar.

Landslide and erosion hazard areas are designated largely by topography and soil characteristics. Countywide mapping of these areas was not performed as part of the development of the Comprehensive Plan or associated environmental review. Landslide and erosion risks may be exacerbated climate change, due to increased fire activity and flooding associated with climate. Generally, Alternatives 2, 3 and 4 direct growth into areas of existing development, where less new

⁴ 2014 Okanogan County, Washington Multi-Hazard Mitigation Plan.

ground disturbance and vegetation removal would be necessary to support new or redevelopment, thereby reducing landslide and erosion hazard risk. Development under all alternatives would be subject to restrictions set forth in the County's critical areas regulations. Therefore, impacts are not anticipated to be significant.

Mitigation measures

This section describes existing regulations or new measures that could be employed to mitigate potential impacts associated with the Alternatives. Article V of the County's CAO imposes development regulations on each type of geologically hazardous area. To mitigate impacts, the County can continue to restrict development by using the CAO regulations and update the regulations as needed. Okanogan County also references Washington State Department of Natural Resources mapping regarding landslides, earthquakes, and volcanoes when reviewing development proposals. Okanogan County maintains a map of known mine hazards.

To ensure the County is referencing accurate information, Okanogan County will reference the most current Multi-Hazard Mitigation Plan as amended.

3.4.3 Frequently Flooded Areas

Existing conditions

Frequently Flooded areas are lands in the flood plain subject to at least a one percent or greater chance of flooding in any given year, or within areas subject to flooding due to high groundwater. These areas include, but are not limited to, streams, rivers, lakes, coastal areas, wetlands, and areas where high groundwater forms ponds on the ground surface. These areas are consistent with all designations of the FEMA and National Flood Insurance Program and are designated on the FEMA Flood Insurance Rate maps (FIRM) set by the Federal Insurance Administration. 14.12.340(G).

FEMA revised the County's Flood Insurance Study in 2003 but has not yet published an updated Digital Flood Insurance Rate Map (DFIRM). The effective FEMA FIRM shows a significant floodplain mapped around the meanders of the Okanogan River between Oroville and Tonasket and on the Similkameen River from Lake Palmer north to the Canadian border.

Analysis of impacts

Both Alternative 1 and Alternative 2 propose significant rural-designated areas along major transportation corridors, including along the Okanogan River between Ellisforde and Oroville. This area is mapped by FEMA as within the Okanogan River 100-year floodplain. Flooding may increase over the planning horizon as a result of climate change. Development within these areas would be constrained by critical areas and floodplain regulations in County code, but overall this pattern of development could lead to increased floodplain impacts and to increased flooding risk compared to Alternatives 3 and 4. However, in comparison to Alternative 1, Alternative 2 revises the existing resource and rural land designation to reduce the intensity of development that occurs outside of major urban centers.

As compared with Alternative 1, Alternatives 2 and 3 introduce goals and objectives directing the County to utilize flood planning to protect human life and riparian ecosystems. These will be implemented through updates to the County's critical areas regulations in accordance with best available science and mapping by FEMA.

Mitigation measures

This section describes existing regulations or new measures that could be employed to mitigate potential impacts to frequently flood areas and impacts from flooding on development.

Okanogan County will utilize historical knowledge of areas outside FIRM that have flooded in the past when designating frequently flooded areas.

Okanogan County will reference the most current Multi-Hazard Mitigation Plan as amended.

Okanogan County administers the FEMA flood management program and references FEMA's FIRM for the 100 year floodplain. Okanogan County also utilizes historical knowledge of areas outside FIRM that have flooded in the past when designating frequently flooded areas. Okanogan County references the most current Multi-Hazard Mitigation Plan as amended. Consistent with the policies in the Comprehensive Plan the results of a channel migration study conducted by Golder are used both by the SMP and CAO in identifying areas that are at high risk for frequent flooding. In addition the zone code prohibits residential structures in the 100 year flood plain in the Methow Review District.

Additionally, state and local regulations require flood plain mitigation. The County's CAO requires development permits within areas designated as special flood hazard. Additionally, pursuant to Chapter 86.16 RCW, which requires counties to adopt Flood Plain Management Ordinances, the County has adopted Chapter 15.08 of the Okanogan County Code to identify floodplains and impose provisions for reducing flood losses. To mitigate future impacts, the County can revise the CAO and Flood Plain Management Ordinances as needed.

3.4.4 Wildfire

Existing conditions

Okanogan County has a history of wildfire activity with two record setting fires occurring in 2014 and 2015. From 1984 through 2017 212 wildfire events occurred in Okanogan County. See appendix to this DEIS. During the 2014 Carlton Complex and 2015 Okanogan Complex fires hundreds of structures were destroyed. See 2014 loss spreadsheet in appendix.

Okanogan County shares much of the risk factors for wildfire as other Eastern Washington counties and those risk factors inform much of the potential mitigations for wildfire risk. Wildfire in Eastern Washington is often caused by lightning storm events or human activities. This being the case, any discussion of wildfire must consider both the increased risk that wildfire poses to human safety when development is allowed in areas with a higher risk of wildfire, but also the increased possibility that wildfires will occur because of human activity in the developed areas.

Analysis of impacts

Although each of the alternatives would result in different patterns of development, risk of wildfire occurs in all potential areas of development, including remote areas as well as higher density areas such as Bridgeport, Pateros, Alta Lake, Omak, Okanogan, and Riverside can be threatened by wildfires. Although increased human presence increases risk of human induced wildfires, all Alternatives accommodate the medium growth scenario, and thus the risk of human induced wildfires increases under all Alternatives.

Alternative 1 encourages growth in remote areas outside of the main transportation corridors. Remote areas are at relatively higher risk of damage from wildfire due to limited access and associated increased fire suppression response time. Compared to other Alternatives, Alternative 1 could lead to greater wildfire risk to residential and commercial structures due to limited access for firefighting services and longer response time.

Chapter 3.5 of this DEIS reviews the impacts of allowing higher density development on primitive roads. While there is no quantified formula for calculating increase in response time or the risk to responding personnel, there has been some analysis in terms of emergency medical response times in the North End of Okanogan County. (see appendix to this DEIS). There is general agreement that access by roadways that are not maintained renders fire suppression activity less effective and more dangerous.

Under Alternative 2, growth is encouraged in CEAs, which were not adopted under Alternative 1. Developments in CEAs may be less susceptible to wildfire risk, where access and fire suppression response time may be better.

Both Alternatives 3 and 4 specifically address risk of wildfires by designating larger lot sizes to minimize risk to residential structures from wildfire. Additionally, Alternatives 3 and 4 direct more population growth into cities, towns, and CEAs, rather than into unincorporated towns and neighborhood commercial centers. Compared to Alternative 1, which allows growth in more remote areas, Alternatives 3 and 4 would provide a lesser degree of risk of wildfire damage to residential and commercial structures.

Wildfire and Climate Change

Virtually all future climate scenarios predict increases in wildfire in western North America, especially east of the Cascades, due to higher summer temperatures and earlier spring snowmelt. Fire frequency and intensity have already increased in the past 50 years, and most notably the past 15 years in the shrub steppe and forested regions of the West. The area burned by fire regionally is projected to double by the 2040s and triple by the 2080s. The probability that more than two million acres will burn in a given year is projected to increase from 5% (observed) to 33% by the 2080s. USFS and CIG researchers have linked these trends to climate changes. Drought and hotter temperatures have also led to an increase in outbreaks of insects, such as the mountain pine beetle, increasing the risk of fire. (Littell et al., 2009)

Mitigation measures

The County may mitigate the impacts of wildfires through measures such as community planning and education on wildfire dangers.

As noted in the Recommendations for Chelan County (2018) (see appendix to this (DEIS) there are many planning tools available to communities to help address challenges associated with the wildland-urban interface. These include plans and policies such as comprehensive plans and community wildfire protection plans along with codes such as the zone code, subdivision regulation, and building codes.

There is an Okanogan County Community Wildfire Protection Plan (see appendix to this DEIS).

The Community Wildfire Protection Plan was prepared with other County planning documents and ordinances including the Okanogan County Multi-Hazard Mitigation Plan (2013), the Okanogan County Comprehensive Plan (2013), Okanogan County Hazard Identification and Vulnerability Assessment

(2004), the Okanogan County Comprehensive Emergency Management Plan (2011), Okanogan County Zoning Ordinance, CAO, SMP, and community wildfire protection plans.

The Community Wildfire Protection plan should be revised so as to blend a variety of public educational processes and regulatory requirements which both reduces the possibility of wildfire ignition, at least by human causes, and the resistance of structures to wildfire through fire resistant materials and defensible space. The objective is to provide existing and future homeowners a guide on how to protect themselves and their structures from fires which have and will continue to occur. But given that fires have been equally destructive to both remote rural and higher density urban and suburban areas, it is reliance on building codes, fire wise construction, landscaping, and on-site discipline, rather than zoning which will more effectively address the fire related issues in the county.

A blend of educational programs for rural residents in how to construct and maintain a fire resistant home site along with specific construction and land development requirements to create more fire resistant communities are the most effective approach to wildfire mitigation.

Forest management practices have also been reviewed because lack of effective management is often identified as a major contributor to forest health and a subsequent increase in fire resilience. The revised comprehensive plan has policies that promote forest management as an effective mitigation to wildfire risk.

Site specific mitigations

Site specific mitigation measures that can help to mitigate impacts of wildfires include increase of defensible space, fire resistant construction, and fire suppression activities specific to sites and structures.

Defensible Space

The type of landscaping, both design and vegetation, can have a significant effect on the risk of losing structures during a wildfire event. Fire resistant landscaping, such as irrigated greenery and/or vegetation free areas will keep the perimeter of an advancing wildfire farther from the structure reducing the possibility of ignition. Standards exist for defensible spaces which generally recommend that an area without combustible material immediately surround the structure followed by a second circle of fire resistant material, such as irrigated lawn or non-combustible landscaping. Trees and large shrubs should be well away from the structure.

Fire Resistant Construction

Fire resistant roofing and siding materials will minimize the risk of ignition from glowing embers blowing beyond the fires line of advance.

Site/structure Specific Fire Suppression Activities

On-site water storage or other water source for suppression activities will allow on-site structure protection activities to occur without fire fighting vehicles and equipment on scene. Locating structures on the brow of a hillside or tightly against steep slopes increases the difficulty of fire suppression by making it difficult or impossible to move equipment around the structure in a safe and efficient manner.

Implementation

Implementation of the above mitigation measures can be accomplished through a mix of education and regulation. Land division proposals can be required to record covenants, conditions, and restrictions which require certain types of landscaping features and practices and fire resistant building materials be used. Road standards should require ingress and egress routes that are capable of supporting firefighting equipment safely and efficiently as well as to facilitate evacuation of residents when required. Zoning should be reviewed to avoid high density development in areas that cannot be served by roads that meet the requirements of the International Fire Code.

3.5 Plants and Animals

Existing conditions

Okanogan County contains the largest mule deer herd in Washington State migrating between winter and summer ranges. The County also contains a population of Sharp-tailed grouse within the shrub-steppe lands of the Tunk Valley and surrounding areas of central Okanogan Valley. Other species such as wolves, lynx (listed as “Threatened” under the Endangered Species Act (ESA)), grizzly bear (listed as “Threatened” under the ESA), big-horn sheep, elk, and white-tailed deer consider the Okanogan County home. Other species listed as “Threatened” under the ESA include the Yellow-billed Cuckoo, Northern Spotted Owl, Chinook salmon, Coho salmon, Steelhead, and Sockeye salmon. The Washington Department of Fish and Wildlife (WDFW) identifies priority species and their habitats and shows broad wildlife diversity throughout the County. This wildlife diversity occurs in unification with the rural agricultural character of Okanogan County.

Vegetation in Okanogan County is a mix of forestland and agricultural ecosystems. According to the 2013 Community Wildfire Protection Plan, Douglas fir is the largest single type of vegetative cover in the County, accounting for 18 percent of all vegetated land area.

Analysis of impacts

The Comprehensive Plan does not directly generate impacts on plant and animal species, however, growth accommodated under the Comprehensive Plan could result in such impacts. Anticipated impacts to plant and animal species include those typically associated with population growth and development, including removal of vegetation, installation of impervious surfaces, and potential introduction of invasive species. Development could lead to overall reduction in wildlife habitat as well as impacts to fish habitat from an increase in pollution-generating surfaces and a decrease in overhanging vegetation.

The impact of development on salmon is directly tied to water quality and quantity. The growth accommodated by the Comprehensive Plan may result in increased water use, and thus may result in the diminishment of water available for fish habitat. These effects are likely to be compounded by rising stream temperatures driven by climate change. Chapter 3.2 of this DEIS provides an analysis of impacts on water resources.

All of the proposed alternatives accommodate the same amount of projected growth and development but differ in the distribution of that growth and development. Relative to Alternative 1, Alternative 2 requires zoning with greater density and more intensive uses be located adjacent to urban centers and major transportation corridors. Alternatives 3 and 4 contain similar but more restrictive assignment of land use designations, reduce rural growth, and promote growth in already developed areas where plant and animal species are less likely to occur. The proposed policies in these three alternatives encourage clustering of density adjacent to the transportation grid to reduce impacts and minimize the footprint of development. Reducing the overall footprint of development and promoting a more compact transportation grid reduces the potential for the creation of impervious surfaces and promotes more open space. The net result of the proposed policies common to Alternatives 2, 3, and 4 should decrease the likelihood of impact on plant and animal species and their habitat.

Alternatives 2 and 3 include objectives specific to protection of fish and wildlife habitat conservation areas, including designation of critical areas that reference the WDFW Priority Habitat and Species data

and maps, and conservation measures necessary to preserve or enhance anadromous fisheries. Under these alternatives, subsequent review of the zone code should consider the available science/information regarding those areas of the county that provide habitat and that have been identified as critical to the sustainability of threatened and endangered species.

Mitigation measures

Some fish and wildlife habitat areas are protected in the Okanogan critical areas ordinance (CAO). Fish and wildlife habitat conservation areas are defined under Okanogan County Code (OCC) 14.12.080 as areas that serve a critical role in sustaining needed habitats and species for the functional integrity of the ecosystem, and which, if altered, may reduce the likelihood that the species will persist over the long term. These areas may include, but are not limited to, rare or vulnerable ecological systems, communities, and habitat or habitat elements including seasonal ranges, breeding habitat, winter range, and movement corridors, and areas with high relative population density or species richness.

Within the CAO, development standards apply to land division and new construction. These standards are intended to prevent adverse impacts to fish and wildlife habitat conservation areas resulting from development, and to require compensatory mitigation where adverse impacts are unavoidable.

In addition to the CAO, the County's SMP was updated in 2018 and recognizes "that the shorelines of the state are among the most valuable and fragile of its natural resources." The SMP contains regulations that apply to substantial development within and along shorelines of the state and that require that all such development result in no net loss of shoreline ecological functions.

Besides the SMP and CAO, the zone regulations, which regulate the type and location of land use activities, play a role in preserving critical habitat. SEPA review is also required for most land use permitting activities, with the exception of residential building permits.

3.6 Transportation

This chapter of the DEIS will discuss potential impacts of growth on the transportation system administered by Okanogan County Public Works.

The Circulation Element of the Comprehensive Plan is crafted to provide coordination between future land use plans and the transportation facilities and services needed to support current growth.

Existing conditions

With large expanses of sparsely populated land, most travel in Okanogan County tends to be by private vehicle. The current county road system has 1,335 total centerline miles of county roads. Of the 1,335 total miles, 679 miles are paved and 656 miles are unpaved. Of those 656 unpaved miles, 583 miles are designated as primitive per Resolution 080-2008 in accordance with RCW 36.75.300.

A list of the County Road miles by classification and a glossary of terms appears in the appendix of this DEIS. A map of the County Road system by classification in conjunction with the Assessor's overlay is found in the appendix to this DEIS.

The Okanogan County Transit Authority also operates TranGo, which provides public transit services to areas within the County including Winthrop, Twisp, Methow, Marlott, Carlton, Pateros, Brewster, Okanogan, Omak, Riverside, the community of Crumbacher, Tonaskeet, and Oroville.

Analysis of impacts

Concerns expressed during scoping focus on current zoning, which allows higher densities of residential development in areas accessed by primitive roads.

As the map of the building permits issued by year (see appendix) shows, for the most part single family residential structures are spread throughout the County. Although the precise locations of future lot development are not dictated by the Comprehensive Plan, Alternatives 1 and 2 generally accommodate more growth in areas with primitive roads. In general, Alternative 1 accommodates growth and development in areas accessed outside the transportation grid and in areas accessed by primitive roads. The 2016 Code did not adopt CEAs but encouraged commercial development in unincorporated towns to serve as neighborhood commercial zones. As a result, development would likely occur in areas accessed by primitive roads. Additionally, the rural resource low density designation directs growth to areas outside major transportation, public service, facilities, and existing development patterns. Alternative 1 encourages growth in the rural high density designation that follows the transportation grid and captures areas that already display urban characteristics. Under Alternative 1, traffic congestion would likely increase in rural high density zones but likely see smaller increases in traffic congestion in rural low density zones.

Similar to Alternative 1, Alternative 2 generally accommodates growth in areas with primitive roads by allowing residential development in all designations. This may result in the use of primitive roads in the County and lead to small increases in traffic congestion on such roads. Thus, under Alternatives 1 and 2, upgrades to primitive roads may be needed in the future to accommodate expanded growth and road use.

Alternative 2 also encourages growth in city expansion areas, which would likely decrease development in areas accessible only by primitive roads, increase traffic congestion in CEAs, and increase road usage in areas with existing traffic infrastructure, as compared to Alternative 1.

Alternatives 3 and 4 generally drive development into incorporated areas and their associated expansion areas. Thus, under Alternatives 3 and 4, more congestion is anticipated in cities; however, less development that would rely on primitive roads is expected, and thus fewer upgrades to primitive roads may be needed under these Alternatives.

Mitigation measures

The County's resources are limited; therefore, the County must achieve a balance among the needs across the County, accommodate both rural and urban areas, and plan for various modes of transportation to maximize person carrying capacity instead of vehicle-moving capacity.

The County can update the Okanogan County Code provisions which regulate transportation, such as Title 10 (Vehicles and Traffic) and Title 12 (Roads and Bridges).

To mitigate the impacts to primitive roads, areas served by existing primitive roads that would be challenging to upgrade should be considered for zone designations that allow less intense uses or be identified as areas where the cost of improvements is born more directly by the developer, such as through a clustering requirement with development standards.

The Okanogan Council of Governments (OCOG), serving as the Regional Transportation Planning Organization (RTPO) has obtained funding to commission a backcountry road analysis. The scope of work for the analysis should include an assessment of the potential buildout of areas served by primitive roads and an analysis of the comparative costs to upgrade the different roads.

The study being conducted by OCOG will perform an analysis of the system of backcountry (primitive) roads and the potential for development each might serve. Under each Alternative, future decisions regarding densities and intensity of land use will be informed by the results of the study. In the interim a review of the road system map combined with the basin specific buildable land calculation done in each WRIA under county jurisdiction in conjunction with the building permit history should be reviewed for roads that seem more likely to exceed the threshold of 100 ADTs.

Due to the broad range of topography and the inconsistency in the current conditions of primitive roads, the cost of upgrading a primitive road may vary widely. Simple, straight stretches could conceivably be improved with a BST surface for \$350,000 per mile. This would be an infrequent scenario. A more normal section would be \$1,000,000 per mile. There are many mountainous areas that could easily range from 5 times that cost to being impossible to feasibly upgrade due to terrain, poor alignment, and environmental concerns. At the low figure of \$350,000.00 per mile for upgrade, the 583 miles of primitive roads would cost \$204 million dollars. This figure assumes that 1) all primitive roads could be upgraded to support additional growth; and 2) that all parcels served by public roads will develop to the level that 100 ADTs is exceeded.

In addition to the study discussed above, a review of the County road standards has been contemplated for some time. A review of the road standards to determine if the road construction required for development is adequate to provide for public safety and convenience should be completed. Other policies, such as large lot subdivisions and exempt segregations not being required to provide any

particular standard of road or even recorded easements for internal roads should be re-examined as well.

The issues regarding development utilizing primitive roads for access impacting wildfire and other emergency response is discussed in section 3.3.4 of this DEIS.

3.7 Land Use and Housing

Existing conditions

Land in Okanogan County varies in topography and climate and exhibits differences in their ability to support residential densities and other land uses. Approximately 18% of the land mass in Okanogan County supports residential, industrial, commercial, agricultural, and natural-resource based activities. The current land use code directs development into rural portions of the County and supports agricultural, resource, residential, tourist, and recreational uses in areas zoned as rural high density and rural low density. Additionally, subareas such as the Methow More Completely Planned Area are zoned for use in rural resource areas. The current land use code did not adopt city expansion areas, rather it encouraged commercial development in unincorporated towns and allows residential development subject to water supply and OSS regulations.

In October 2020, Points Consulting published a Housing Needs Study to help community leaders plan for and facilitate the development of housing for the region's residents. The Study found the majority of new housing units since 2010 are single-family homes in the Methow Valley Region (29% of new units) and the North Region (21% of new units). The second most common form of occupancy is mobile and manufactured homes, which have been mainly added in the North region (10%) and the Central region (7%). Renting is fairly uncommon in Okanogan County because two-thirds of households own their own home.

Analysis of impacts

None of the Alternatives is anticipated to prevent development of housing sufficient to meet the needs of projected population growth in the County over the next 20 years. However, the location of housing availability differs under each Alternative.

Under Alternative 1, the majority of growth and housing would likely continue as single-family homes in rural areas of the County.

Alternatives 2 and 3 rely on market demand coupled with other regulation, such as the CAO & SMP, along with a connection between growth and available water to direct growth. Alternative 2 also allows development in rural areas, subject to the ability to support potable water supply and proximity to the transportation grid. Alternative 2 also encourages growth in commercial development in neighborhood commercial zones and residential development in unincorporated towns and neighborhood commercial zones. Under Alternative 2, residential development is still compatible in rural portions of the County, but would also allow residential uses and housing to move toward CEAs, neighborhood commercial zones, and unincorporated towns as compared to Alternative 1.

Alternative 3 discourages residential development in unincorporated towns and neighborhood commercial centers by decreasing the size of these designations and restricting development to existing plats. Alternative 3 also encourages residential and commercial growth in cities and towns. Additionally, Alternative 3 discourages growth in rural areas by increasing lot sizes to avoid conflict between

residential and agricultural uses and encourages residential clustering on land less suited for agricultural activities. Larger lot sizes also may reduce the risk to residential structures from wildfire. Overall, Alternative 3 would lead to increased development and housing in cities and towns compared to Alternative 1.

Alternative 4 also encourages population and housing growth into cities, towns, and CEAs rather than into rural areas as compared to Alternative 1. Alternative 4 discourages intensive residential, commercial, and industrial development. Larger lot sizes are implemented in the resource designation to avoid conflict with agriculture operations, and may reduce the risk to residential structures from wildfire.

3.8 Utilities

Existing conditions

Public Utility District No. 1 (“PUD”) serves portions of Okanogan County, whose customers are composed mainly of residential, commercial, and irrigation accounts. Okanogan County’s major power resources are hydroelectric and wind. PUD also provides broadband service to retailers, who then serve residents and businesses, and operates wireless networks.

The eastern/southeastern portion of Okanogan County are served by the Nespelem Valley Electric Coop and portions of the Methow Valley are served by the Okanogan County Electric Coop. Customers are composed of mainly residential, commercial, and irrigation customers. **Analysis of impacts**

The 2021 Comprehensive Plan and this DEIS are based on the medium growth scenario, which predicts an increase of approximately 2,500 people from 2020 to 2040 in Okanogan County. As a result, the difference in Alternative impacts will vary based on development patterns.

Under Alternative 1, growth is more likely to occur in rural areas of the County, where utility services may not be as readily available.

Alternative 2 adopts CEAs. Alternative 2 encourages residential growth within CEAs and unincorporated towns; commercial development is also encouraged in neighborhood commercial zones. Utility services are more concentrated in CEAs, neighborhood commercial zones and unincorporated towns, compared to rural areas. However, Alternative 2 accommodates rural development in areas where utility services may not be as readily available.

Under Alternatives 3 and 4, growth is directed toward cities, towns and their expansion areas, where utility services are already concentrated.

Mitigation measures

To mitigate impacts, Okanogan County can work with the PUD and other state and federal utility providers to maintain adequate utility operations including maintenance, support, and equipment.

3.9 Recreation

Existing conditions

Okanogan County has a wide range of public and private recreation opportunities including hiking trails, snowmobile trails, rivers, lakes, hunting areas, and park and recreation facilities. In 2020, Okanogan County and the Paths and Trails Committee prepared the “Okanogan County Outdoor Recreation Plan” (attached in the Appendix of this document).

Additionally, Okanogan County hosts a wide variety of tourism opportunities including cultural events, historical tours, special events, and visitor centers. The Okanogan County Tourism Council prepares marketing materials and strategies to promote all areas in Okanogan County, and publishes and distributes a county-wide tourism guide.

Analysis of impacts

This DEIS compares the existing conditions for recreation and tourism and analyzes how they may change in response to each alternative.

Under Alternative 1, 58.1% of land is designated as recreation resource, which directly supports recreation activities. Additionally, the rural high density designation follows the transportation grid and

captures areas that already display urban characteristics, which would lead to increased tourism opportunities in areas where tourism already exists. The rural resource low density provides and accommodates recreational areas and accommodates tourism facilities.. Finally, Alternative 1 also encourages community development in unincorporated towns to allow them to continue to serve as neighborhood commercial zones, which would likely lead to increased growth in both recreation and tourism.

Under Alternative 2, the rural resource and recreation resource designations are changed to agricultural resource and forest resource designations. This would likely lead to a decrease in the amount of land set aside specifically for recreation as compared to Alternative 1 and would allow for comparatively fewer recreation opportunities than under Alternative 1. Adoption of CEAs under Alternative 2 may increase tourism as compared to Alternative 1.

Similar to Alternative 2, the rural resource and recreation resource designations are changed to agricultural resource and forest resource designations under Alternative 3. This would likely lead to a decrease in the amount of land set aside specifically for recreation as compared to Alternative 1, and would allow for fewer recreation opportunities than under Alternative 1. Also under Alternative 3, unincorporated towns and neighborhood commercial centers are significantly smaller and restricted primarily to existing town plats and the immediate area. Similar to Alternative 2, residential and commercial growth is encouraged in cities, towns, and expansion areas (depending on their ability to provide municipal services). Because there are no CEAs under Alternative 1, recreation and tourism are likely to increase at a higher rate under Alternative 3 as compared to Alternative 1.

Under Alternative 4, rural areas are designated according to their unique attributes to avoid conflicting uses and protect rural assets. This would likely support recreation activities at a similar rate as compared to Alternative 1. Also under Alternative 4, resource lands are designated to discourage intensive residential, commercial, and industrial development. As compared to Alternative 1, this would most likely have the same impact on increases in recreation, but lead to a lesser degree of increases in tourism. Finally, Alternative 4 directs more population growth into cities and towns and expansion areas where it can be served by municipal water and sewer rather than into unincorporated towns and neighborhood commercial centers. Similar to both Alternatives 2 and 3, this would likely lead to a greater increase in recreation and tourism opportunities compared to Alternative 1 because the 2016 zoning code did not adopt city expansion areas.

Mitigation measures

Increased development and growth are likely to lead to a greater degree of recreation and tourism. To mitigate impacts, the County can update its Recreation Plan as needed to promote recreational opportunities while ensuring resources and habitats are protected from adverse impacts. Additionally, the County can work with the Tourism Council to continue to market tourism opportunities and promote environmental stewardship and conservation efforts.