

# VALLEY COUNTY WATERWAYS MANAGEMENT PLAN

*A Sustainable and Adaptable Plan —  
Preserving What We Love*

FINAL DRAFT  
OCTOBER 21, 2022

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# acknowledgements



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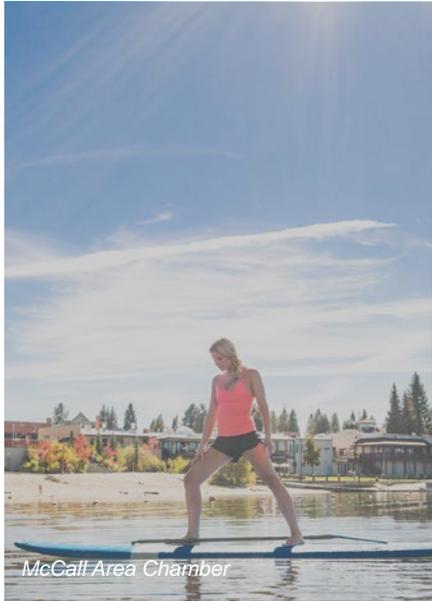
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Idaho Department of Parks and Recreation - Ponderosa State Park  
Idaho Department of Lands  
Idaho Department of Fish and Game  
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City of McCall

VALLEY COUNTY

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McCall Area Chamber



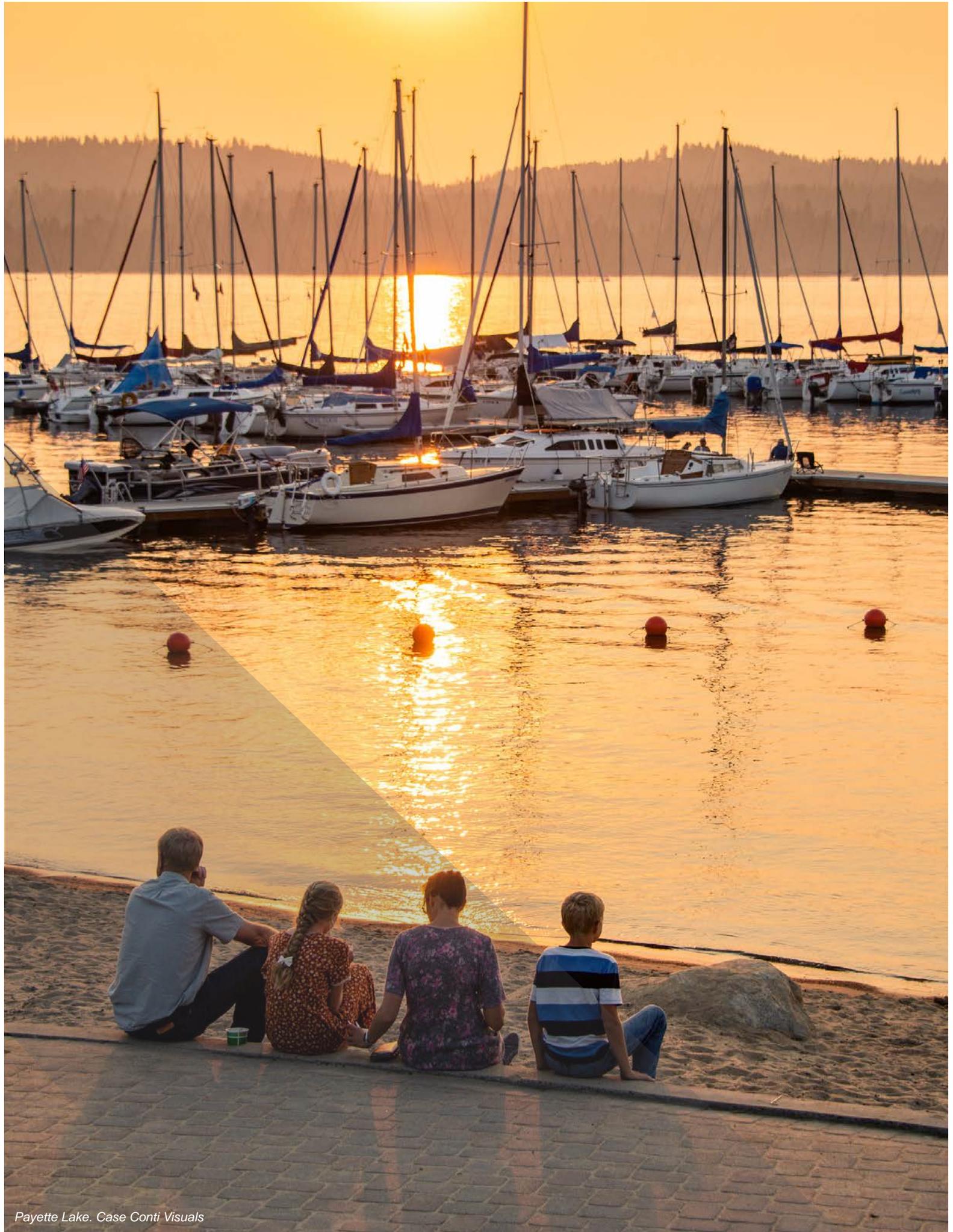
John Webster for Tamarack Resort

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## The purpose of the Waterways Management Plan...

**is to provide a coordinated framework for decision-making to guide management and improvements of all waterways in Valley County. Implementation of specific projects, policies, and initiatives shall require approval by the Board of County Commissioners, City Councils of local municipalities, and/or the governing bodies of other partner respective jurisdictions.**

BEA	Bureau of Economic Analysis
BMP	Best Management Practice
CDH	Central District Health
CWA	Clean Water Act
IDEQ	Idaho Department of Environmental Quality
IDFG	Idaho Department of Fish and Game
IDL	Idaho Department of Lands
IDPR	Idaho Parks and Recreation
IDWR	Idaho Department of Water Resources
KWP	Kelly's Whitewater Park
mg/L	Milligrams per liter
NRCS	National Resource Conservation Service
Reclamation	U.S. Bureau of Reclamation
TAG	Technical Advisory Group
TMDL	Total maximum daily loads
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
VSWCD	Valley Soil & Water Conservation District
WMA	Wildlife Management Areas



# CHAPTER 1: SUMMARY

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## INTRODUCTION

Valley County is a mountainous paradise located in the west central mountains of Idaho, that offers numerous types of outdoor recreation activities. Maintaining ecosystem health and recreational opportunity on Valley County's lakes and rivers - collectively referred to in this Plan as waterways - is a high priority and value of Valley County. The waterways provide a source of clean drinking water, irrigation, aquatic habitat, and attractive recreation spaces. The community's resolve has been strengthened to create a cohesive decision-making structure for the future management of the County's waterways to represent strong Idaho values. This Valley County Waterways Management Plan (the Plan) addresses the desired future condition and management for all waterways across the County with additional strategic direction for Lake Cascade, Big Payette Lake, Warm Lake, alpine lakes, and North Fork of the Payette River. While important to the County, unique management direction was not warranted at this time for other waterways, such as Upper Payette Lake, Little Payette Lake, and Herrick Reservoir.

*Comprehensive plans for the County and local municipal jurisdictions recognize the waterways as “special areas” as drinking water sources, wildlife habitat, quality public access, protection of shoreline, and local economic development.*

## NEED FOR THE PLAN

Valley County has a diverse array of waterway resources ranging from high-activity, motorized use reservoirs to small, backcountry destinations and esteemed river systems. Water plays a very important role in the quality of life and economic development opportunities for residents, second homeowners, recreation users, irrigation districts, and businesses. Valley County's waterways offer fishing, swimming, sailing, kayaking, power boating, wakeboarding, jet-skiing, canoeing, hiking, camping, and other recreational opportunities that contribute to the resiliency and lifestyle associated with living in a mountain community.

With its stunning mountain setting and vast recreation opportunities, Valley County has increasingly attracted residents and visitors alike. The County is transitioning from its traditional agrarian, timber harvesting, and mining roots to include a recreation destination-based economy. With this shift comes increased use of public lands, as well as land-use challenges and impacts of population and visitation growth. Uncertainty about the future of some public lands, concerns from residents, new lake developments (e.g., marinas), fluctuating water quality, soil erosion, recreation leases, changing recreational trends and technology, and recent regulations have prompted the need for management guidance of Valley County's waterways. This Plan reinforces the valuable partnerships between Valley County, the City of McCall, and other local, state, and federal jurisdictions for the sustainable management of their most important resource.

## WHO USES THIS PLAN

Valley County and the respective jurisdictions will use this Plan to help guide future recreation management while considering environmental stewardship of the lakes, reservoirs, and rivers. The Plan provides guiding direction for future waterway management, land use standards, and best management practices (BMPs). Various agencies and partners can adopt and help implement portions of the Plan as relevant to their jurisdiction. The Plan incorporates high level best practices from land management agencies as well as other major recreation waterbodies across the nation within Idaho's legal framework.



# PLAN OVERVIEW

- *Outlines recommendations in partnership with other agencies for future management and policy considerations.*
- *Provides guidelines oriented towards the health and safety of recreational users.*
- *Provides recommendations for operations including enforcement.*
- *Identifies science-based keystone indicators for future monitoring and adaptive management.*
- *Provides general improvements needed to enhance the recreational experience on the waterways.*
- *Identifies data gaps for future research.*



Donnelly Chamber of Commerce

## GOALS OF THE WATERWAYS MANAGEMENT PLAN ARE TO:

- Provide a framework for future decision making by defining a county-wide and city-wide vision for waterways management and identify waterway-specific desired future conditions and strategies for all uses of water.
- Provide diverse opportunities for recreational users of the County's lakes, reservoirs, and rivers.
- Balance ecosystem health with recreational experience by developing keystone indicators based on best available scientific data and existing research.
- Consider trends in recreation, visitation, population growth, and land use and management.
- Create an adaptable management structure to address continued visitation and changing water quality with monitoring and indicators for the implementation of data-driven best management practices and regulations to maintain the desired future conditions of each waterway.
- Identify priorities for short-term action and long-term adaptable implementation.
- Create a grassroots-based plan centered on our community, partners, committees, agencies, and leadership.



Chad Case

## FRAMEWORK

Maintaining Valley County’s high-quality waterways is a high priority and value of Valley County residents and visitors. The emerging tourism economy of Valley County and its cities depends on its waterways. These waterways also serve a growing population both recreationally and by providing drinking water. A framework will allow the community to adjust and preserve what locals and visitors cherish.

Three frameworks have been established to organize the Plan – recreation, land use, and environmental resources. However, none of these topics exist as a standalone component. They are interrelated with impacts and benefits to each other. Quality of life is intricately tied to natural landscapes and recreation, and the long-term future depends on the stewardship of water, energy, sensitive lands, and air quality. A critical outcome of this plan will be the ability to balance the protection of water resources with economic development objectives.

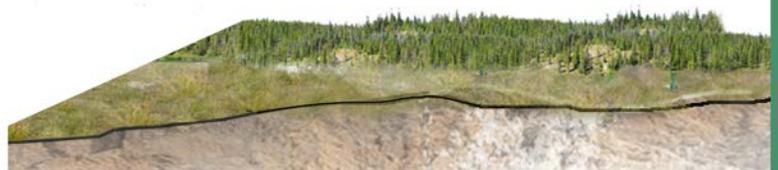
## VALLEY COUNTY WATERWAYS MANAGEMENT PLAN



### RECREATION



### LAND USE



### ENVIRONMENTAL RESOURCES

## WHAT THE PLAN IS NOT:

*The scope of the Waterways Management Plan does not result in any immediate restrictions or new regulations to waterways management. Agency partners were critical to the plan development, but any potential policy or rule changes would need to be adopted through separate processes. The planning effort relied on the best available data at the time and did not include collection of original environmental data collection or scientific efforts. Further, many of these efforts are underway by other agencies as funding and staffing allows.*

# A LIVING DOCUMENT

This Waterways Management Plan is designed to be an interactive, adaptable plan to be used by not only the County but any agency with management and/or resource oversight of the waterways. The planning process took place over four tasks. However, an ongoing Task 5 will be needed to implement the adaptive management program and to continually evaluate the keystone indicators. Based on any changes to the keystone indicators, priority strategies could be adjusted to meet the desired future condition of the waterways.



# BUILDING OFF PAST STRONG WATERWAY EFFORTS

*The Waterways Management Plan acknowledges the work of previous and existing waterway efforts, some of which include:*

- *The Valley Soil and Water Conservation District regularly responds to various challenges facing water quality in the North Fork Payette River watershed. Tackling efforts to address land management; waves, erosion, and sedimentation; wetlands, aquatic vegetation, and fish habitat; wastewater: sewer, septic, and urban runoff; and lake storage.*
- *The Valley County Waterways Advisory Committee is an appointed committee advising on maintenance and improvements of waterways.*
- *Plans created with the assistance of previous working groups helped informed this Plan:*
  - *The Watershed Advisory Groups - Idaho Department of Environmental Quality (IDEQ) convened groups during the development of water quality improvement plans and total maximum daily loads (TMDLs) for the Cascade Reservoir/North Fork Payette.*
  - *The Big Payette Lake Water Quality Council, a State legislature established group that disbanded seven years after the passage of the Lake Management Plan.*

## OUTREACH HIGHLIGHTS

The planning process for the Waterways Management Plan was co-managed by Valley County and City of McCall with collaborative input from many non-profit, federal, state, and local agencies.

### PROJECT OUTREACH OVERVIEW



4

TAG Meetings

11



Stakeholder interviews

2



County and municipality joint  
worksessions

16



Agencies and Divisions  
represented on the TAG

150+



Intercept and boat count questionnaire  
hours by 22 volunteers over 2 years

5



Valley Soil and Water  
Conservation District Updates

300



Comments Public Draft Plan

30+



Steering Committee meetings

## TECHNICAL ADVISORY GROUP MEETINGS

A Technical Advisory Group (TAG) was convened for this planning process and was made up of the many agency partners that are involved in the day-to-day management of the waterways or have an oversight role of the properties. They provided technical input to the development of the Plan, bringing together agency best management practices and a holistic view of the waterways management. The TAG included representation from the U.S. Forest Service (USFS), Idaho Department of Fish and Game (IDFG), Idaho Department of Lands (IDL), Friends of Lake Cascade, Idaho Department of Environmental Quality (IDEQ), U.S. Bureau of Reclamation (Reclamation), Valley Soil & Water Conservation District (VSWCD), Idaho Parks and Recreation (IDPR) - Ponderosa State Park and Lake Cascade State Park, Payette River Watermaster, and irrigation districts, among others. The group met four times to provide their input on the desired future condition, recommendations, and plan implementation.

## PARTNER AND BUSINESS INTERVIEWS

Discussions with rental companies, parks, and recreation businesses took place during the summer of 2021. Key input included:

- *Recreation conflicts associated with key activities*
- *Education is key: Mapping and rules/ethics*
- *Rental business was already growing, then grew even more with COVID*
- *Payette and Cascade are big enough for users; just need to consider how the areas are used*
- *Payette Lake: Concentration of users at Legacy Park Area*
- *Warm Lake: Erosion is multiple factors (higher water levels, shoreline trails, boats, wind, etc.)*
- *Lake Cascade: Harmful Algae Bloom occurring earlier; hurts tourism*

## VISIONING QUESTIONNAIRE

The Waterways Management Plan planning process sought to understand visitor perceptions and satisfaction with their experiences on the water. During the summer of 2021, the public and visiting recreationalists were able to share their experiences and desired visions for the waterways. Two online questionnaires were available: An extensive visioning questionnaire was developed to begin to understand visitor-use patterns/activities, general challenges/concerns, and to gather input on the long-term vision for each waterway. It asked about all the major waterways in Valley County. There were 214 completed responses.





Donnelly Chamber of Commerce

## BOAT COUNTS & VISITOR USE INTERCEPT QUESTIONNAIRE

A shorter intercept questionnaire asked about visitors’ direct experiences during their visit. The intercept questionnaire was available online via QR code on signs at various boat ramps, on postcards at area businesses, and facilitated by volunteers on select days (as described below). There were 234 completed responses of which 164 response were collected during boat counts during the summer of 2021. A second intercept was conducted in the summer of 2022.

In an effort to specifically correlate visitor perceptions and satisfaction with the number of boats on the water, specific times and dates were identified to count the number of boats and simultaneously ask people about their perceptions that day. This was a large volunteer effort that involved over 22 volunteers and 150+ volunteer hours were attributed to the effort. The effort attempted to collect data on weekday and weekend time periods once during peak season (end of July) and once during non-peak season (mid-September). Weather and seasonal restrictions constrained some of the data collection, which included: stormy weather on the weekday time period in July, lower than normal water levels on Payette Lake in September, lower water levels and a Harmful Algae Bloom health advisory on Lake Cascade on August 13, 2021.

### QUESTIONNAIRE RESULTS

#### Visitation (in the past 12 months)?

	0 days	1-5 days	6-15 days	16-25 days	25+ days	# of Responses
Big Payette Lake	17.2%	18.9%	13.0%	12.4%	38.5%	169
Lake Cascade	40.4%	27.8%	12.6%	5.3%	13.9%	151
Warm Lake	57.2%	21.1%	5.3%	3.9%	12.5%	152
Upper Payette Lake/Little Payette Lake	47.3%	32.2%	15.8%	4.1%	0.7%	146
Horsethief, Herrick, Boulder Meadows, and Deadwood Reservoirs	69.9%	23.8%	6.3%	0%	0%	143
Alpine Lakes	47.2%	26.4%	18.1%	4.2%	4.2%	144
River above Lake Cascade	58.7%	23.9%	13.0%	2.9%	1.4%	138
River below Lake Cascade	60.6%	25.8%	9.8%	1.5%	2.3%	132

## TOP ACTIVITIES BY WATERWAY

	Just myself	One other person	A group of friends	A group of family including kids	Canine friends	Total checks
Big Payette Lake	13.7%	21.8%	22.7%	25.5%	16.2%	357
Lake Cascade	9.9%	25.7%	24.6%	23.6%	16.2%	191
Warm Lake	12.8%	22.2%	21.1%	26.1%	17.8%	180
Upper Payette Lake/Little Payette Lake	14.3%	29.8%	21.1%	16.1%	18.6%	161
Horsethief, Herrick, Boulder Meadows, and Deadwood Reservoirs	18%	28.8%	15.3%	19.8%	18%	111
Alpine Lakes	15.9%	33%	19.2%	13.7%	18.1%	182
River above Lake Cascade	14.8%	28.9%	23.4%	14.8%	18%	128
River below Lake Cascade	15.3%	28.8%	24.6%	18.6%	12.7%	118

### Typical Visitation Groups

Waterway	Poor	Neutral	Excellent
Big Payette Lake	1.9%	14.6%	83.5%
Lake Cascade	3.0%	22.4%	74.6%
Warm Lake	0.0%	0.0%	100.0%

### Feeling of Crowdedness

Waterway	Not at all crowded	Slightly crowded	Moderately crowded	Extremely crowded	No opinion
Big Payette Lake	33.3%	32.1%	20.8%	13.2%	0.6%
Lake Cascade	41.8%	32.8%	14.9%	9.0%	1.5%
Warm Lake	25.0%	50.0%	25.0%	0.0%	0.0%



# CHAPTER 2: FOCUS AREA CURRENT TRENDS

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## INTRODUCTION

Based on the best available data, an overview of baseline data for the area was completed. The following chapter describes the qualitative understanding of the unique issues and challenges that affect the waterways. An assessment of keystone is also integrated. The full Current Trends Report is provided under separate cover.

*The combination of two marinas, boat launch, public beach, fuel station, swimmers and non-motorized boat users concentrates activity in the Legacy Park Area.*

*- Mile High Marina*



## RECREATION

### WHY DOES IT MATTER

It would be difficult to overstate the opportunities for outdoor recreation in and around Valley County's waterways included in this Plan. These waterways are a key source of pride for locals and serve a population from the region and beyond. They provide immense aesthetic and mental health benefits and recreational opportunities, such as swimming and boating, which help support the local tourism economy and keep local taxes lower. As the tourism economy of Valley County and its cities grows, the importance of the waterways is highlighted. As Valley County's waterways are seeing an increase in visitation, recreation trends are also shifting. New technology and types of watercraft are changing how the waterways are used. Paddleboarding has emerged as a popular activity, wakesurfing has changed how power boats use the waterways, and boat rentals - of all types - are increasing.

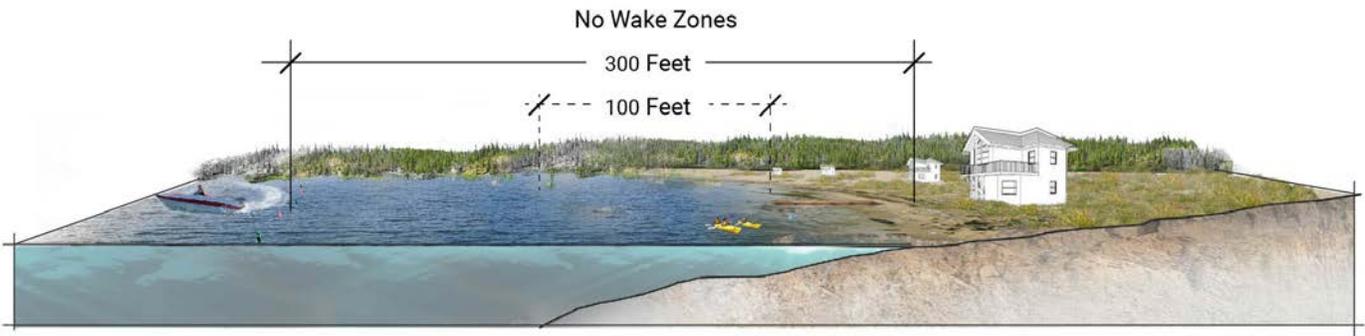
In addition to water-based forms of recreation, nearly every waterway location offers camping, hiking, wildlife viewing, birding, and biking along the shores. The waterways and surrounding areas also provide habitat for a diversity of wildlife and fish species. Although recreation activities and access to waterways should be maintained, increased use of the waterways in Valley County require heightened awareness and development of a long-term plan that seeks to balance the demands of recreational use with the needs of maintaining a healthy environment.

## MANAGEMENT GUIDANCE

The waterways and their various functions are managed by different entities, including the County, Reclamation, IDPR, IDL, IDFG, and the USFS. The IDEQ sporadically monitors water quality. Lake Cascade State Park and Ponderosa State Park are located at Lake Cascade and Big Payette Lake, respectively. The Idaho Parks and Recreation Department manages most of the waterways' campgrounds and trails. The IDFG manages fishery resources and implements fishing regulations, including stocking some fish species in certain waterbodies.

The 2020 Valley County Waterways Ordinance (Ordinance #20-11) stipulates operational rules, regulations, and behavioral standards, including no wake zones for public waterways in Valley County. The ordinance establishes a 300-foot no wake zone for Big Payette Lake, Upper Payette Lake, and Lake Cascade with certain exclusion areas. Idaho State Code 67-7077 no wake rules apply within 100 feet of a dock, person, or structure, including within the Valley County Waterways Ordinance 300-foot no wake zone.

## CURRENT WATERWAYS MANAGEMENT

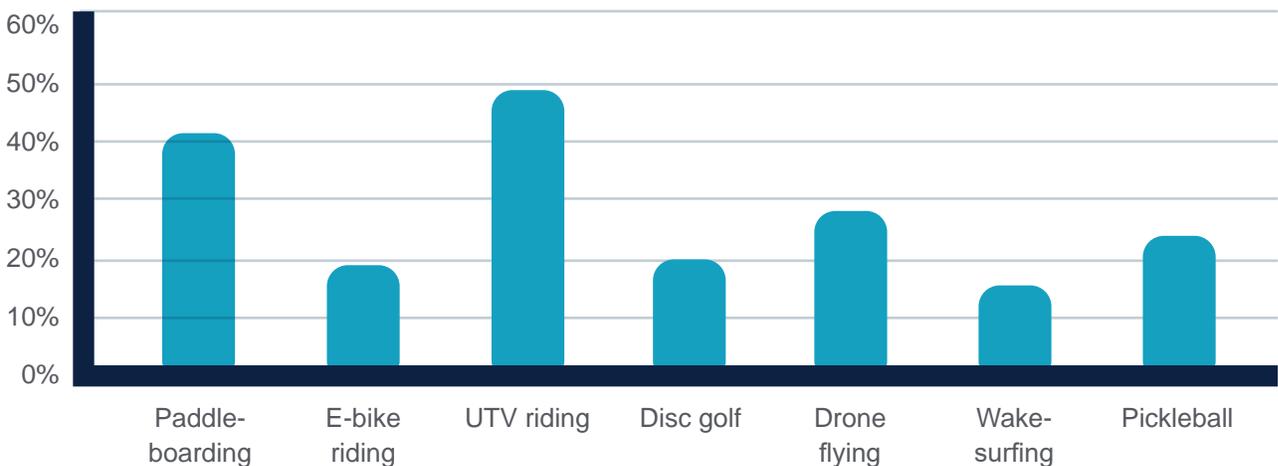


## GROWTH IN RECREATION ACTIVITIES

The Idaho Statewide Comprehensive Outdoor Recreation Plan from 2018 highlights the importance of outdoor recreation to Idaho and summarizes demand of all types of outdoor recreation across Idaho. Through this process IDPR surveyed recreation providers, public land managers, and the general public. Focus groups with recreation providers in Valley County also identified paddleboarding and wake surfing as two of the top trending outdoor activities.

## TRENDING OUTDOOR RECREATION ACTIVITIES IN IDAHO

*Idaho SCORP 2018: Outdoor Recreation Provider Online Survey*



Stand up paddleboarding has increased significantly, due to its ease of learning and low cost to entry. Recreation providers can accommodate the activity without having to add large facilities. Many park concessionaires and retailers provide rental boards. Wake surfing has also grown in popularity in Idaho as wake surfing technology and equipment continues to evolve and become more available. Unlike wakeboarding, wakesurfing involves catching a ride on top of the wake created by the boat's wake. According to the Idaho Department of Parks and Recreation, 7,811 boat licensees selected Valley County as either their primary or secondary use location in 2021.

Growth has occurred in shoreline recreation uses devoted to camping, picnicking, swimming, and fishing. Over the past five years, both Lake Cascade and Ponderosa State Parks have witnessed a steady increase in camping and day use from both Idaho residents and out-of-state visitors.

During the peak of the season from late June to Labor Day, onshore recreation facilities around some County waterways are strained.

*A significant number of people using the North Beach lot are day users of the beach and are not paddlers renting from the company. With the lot full by 11 am, people continue up the Waterway to River Bend or over the bridge, areas which are equally impacted.*

*Stef Woods, owner of Backwoods Adventures Canoe and Kayak Rentals*



## ECONOMIC IMPACT

According to the Bureau of Economic Analysis (BEA), outdoor recreation accounts for \$2.5 billion or 3 percent of Idaho’s economy and supports 36,537 jobs. The recently released Gross Domestic Product numbers by the BEA highlights the importance of boating and fishing to Idaho’s economy. Idaho continues to see a greater increase (1.2 percent growth) in the outdoor recreation industry compared to the rest of the United States (0.4 percent growth) (apps.bea.gov 2021).

## REVENUE GENERATED BY RECREATION ACTIVITIES IN IDAHO

*Bureau of Economic Analysis*

ACTIVITY	GROSS DOMESTIC PRODUCT (2019)
RVing	\$195,316,000
Hunting/Shooting/Trapping	\$149,240,000
Boating/Fishing	\$141,438,000
Equestrian Use	\$125,925,000
Snow Activities	\$57,721,000
Motorcycling/ATVing	\$55,173,000
Climbing/Tent Camping	\$20,917,000
Bicycling	\$11,177,000



Visit Idaho

## CARRYING CAPACITY

**Spatial Capacity** – Capacity in regard to the physical constraints leading to space-related impacts. In other words, spatial capacity is the number of boats that can comfortably conduct their chosen recreational activity in a specific area of a waterway. For this analysis boats are considered motorized boats, capable of generating wake, active on the water at one time. A lake’s shape and water level will also affect the physical constraints on use. An irregular shoreline limits the amount of usable

boating surface. The water level (aka pool level) at Lake Cascade fluctuates significantly and changes the amount of surface acres available to recreate on a seasonal basis. In determining what “too much” means it is important to understand that no carrying capacity formula is right for every waterway. One factor to consider is the ecological or aesthetic value of the lake, which may not be captured in a boater survey. Case studies range from 4 boats per acre to 40 motorized boats per acre.

## SPATIAL CAPACITY ANALYSIS

	BIG PAYETTE LAKE	LAKE CASCADE	WARM LAKE
Observed motorized boats at one time (High Use)	<b>76</b>	<b>161</b>	<b>6</b>
Observed motorized boats at one time (Low Use)	<b>20</b>	<b>35</b>	<b>2</b>
Wake Area (Acres) at high pool	<b>4,326</b>	<b>21,504</b>	<b>224</b> (between 11am-6pm)
No wake Area (Acres) at high pool	<b>771</b> (300 feet from shoreline, with exclusions)	<b>1,952</b> (300 feet from shoreline, with exclusions)	<b>423</b> (between 6pm- 11am) <b>199</b> (between 11am-6pm)



**Social Capacity** – Capacity in regard to visitors’ perception of crowding. Social capacity is defined by the specific user groups of each specific lake. Social capacity may but not always impact the users’ enjoyment of the recreational resources. Social capacity is reached when conflict arises or when users choose not to utilize the resource. The demand for various activities and the condition of the lakes and reservoirs must be considered to set realistic goals and standards.

**Facility Capacity** – Capacity in regard to the ability of infrastructure to support the demand of various recreation user groups. Considerations include parking lots, marina capacity, boat launches, traffic/circulation, and camping with boating access. Staffing for education, management, maintenance, and enforcement should also be considered.

## SOCIAL CAPACITY ANALYSIS

	BIG PAYETTE LAKE	LAKE CASCADE	WARM LAKE
Observed motorized boats at one time (High Use)	<b>76</b>	<b>161</b>	<b>6</b>
Observed motorized boats at one time (Low Use)	<b>20</b>	<b>35</b>	<b>2</b>
Perception Survey (High Use)	<b>Experience Excellent.</b> Slight to Moderate with Areas of extreme crowding (Put-in Areas and North Beach).	<b>Experience Excellent.</b> Slight Crowding. Areas of extreme crowding associated with unsafe behavior and boat ramp.	<b>Experience Excellent.</b> Not Crowded.
Perception Survey (Low Use)	<b>Experience Excellent.</b> No to Slight Crowding.	<b>Experience High.</b> Not Crowded.	<b>Experience Excellent</b> Not Crowded.



Chad Chase

## LAND USE

### WHY DOES IT MATTER

The use of the land immediately adjacent to the Valley County waterways and within the watershed has a substantial impact on the natural and recreational value of the waterways and to the domestic water supply and irrigation. Continued growth in the region, increased demand for shoreline development in general, and increased demand for recreational access to the water is expected. Land uses surrounding the waterways include a variety of federal, state, and local governments, as well as privately held land. Each has an influence on the recreation experience and water quality to varying degrees.

The waterways are valued for the inherent beauty of their natural environment and are appreciated as part of a larger natural ecosystem. Development can substantially diminish the environmental attributes of these waterways. While the region has long been a magnet for visitors and second homeowners, that dynamic has increased with the development of high-end residential communities and resorts in the past ten years, including Tamarack Resort, Jug Mountain Ranch, Blackhawk on the River, and Whitetail. Especially during the COVID pandemic, an increasing number of people have moved or decided to spend more time in the area as many more people are able to work remotely.

Of the 2,354,048 acres of land in Valley County, 2,147,983 acres are under federal, state, or county management. The remaining 206,065 acres (8.7%) are privately owned (Valley County 2018). 88% of Valley County is within portions of three National Forests: the Boise, Payette, and Salmon/Challis.

## **MANAGEMENT GUIDANCE**

In the State of Idaho, authority for regulating land uses is delegated to local jurisdictions: Valley County and the cities of Cascade, Donnelly, and McCall. Local governments also coordinate with federal, state, and regional agencies in the review of development impacts on waterways including floodplain management, stormwater management, wetland area protection, and domestic water and septic systems.

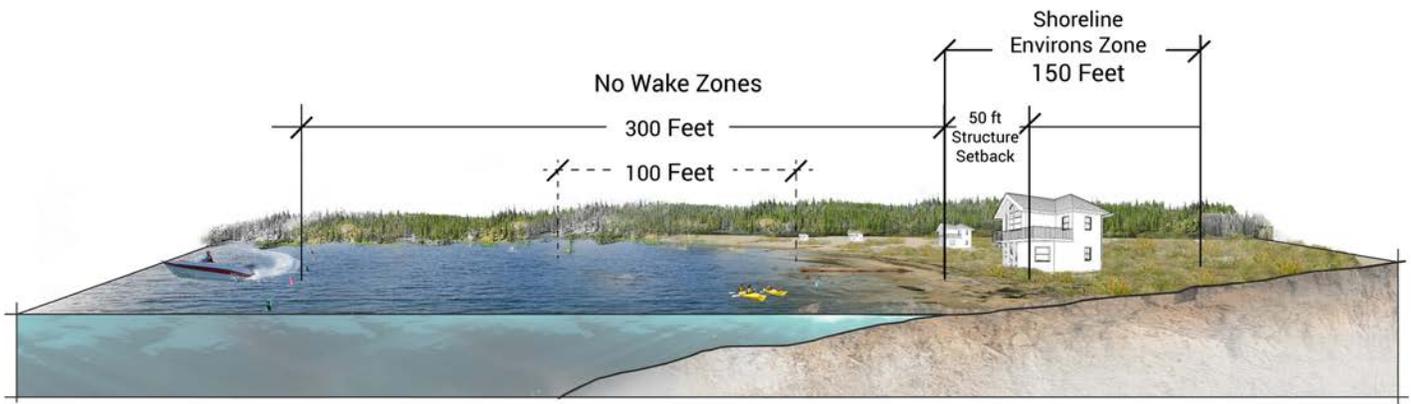
There are many obligations related to water use and storage operations of the water come from adjacent lands, including agricultural water contracts, fish augmentation flow, flood control, power generation and drinking water supply.

## **REGULATORY GUIDANCE**

The Valley County Code requires a conditional use permit for most land uses, except agriculture, single family residences, and some public uses. All residential buildings are required to be set back at least 30 feet from high water lines, and all other buildings are required to be at least 100 feet set back from high water lines. Allowable residential lot size is dependent on the type of water and sewer system available with a minimum of one acre required for a residence served by a septic system and individual well.

All conditional uses require the preparation of an Impact Report to address the potential environmental, economic, and social impacts of proposed uses and how these impacts are to be minimized or mitigated. Included are issues important to waterside development: surface water drainage and quality; disturbance of wetlands; flood-prone areas; vegetation removal; and soil, slope, and embankment disturbance and stability.

For properties within the McCall Area of City Impact, Valley County adopted the same codes for Impact Area (County) as the City. For the City of McCall Impact Area, the City of McCall and Valley County have adopted an overlay district to protect the water quality and aesthetic views of Big Payette Lake and the North Fork of the Payette River. The Shoreline and River Environs Zone (150' from high water mark) requires design review of all properties adjacent to the waterways and establishes a 50 foot minimum development setback from the lake and river. Within the setback, structures, patios, walls, lawns, and fences are prohibited. To protect water quality, a stormwater management plan consistent with best management practices is required for all building permit applications. In addition, wildlife habitat, wetlands, and views are to be protected.

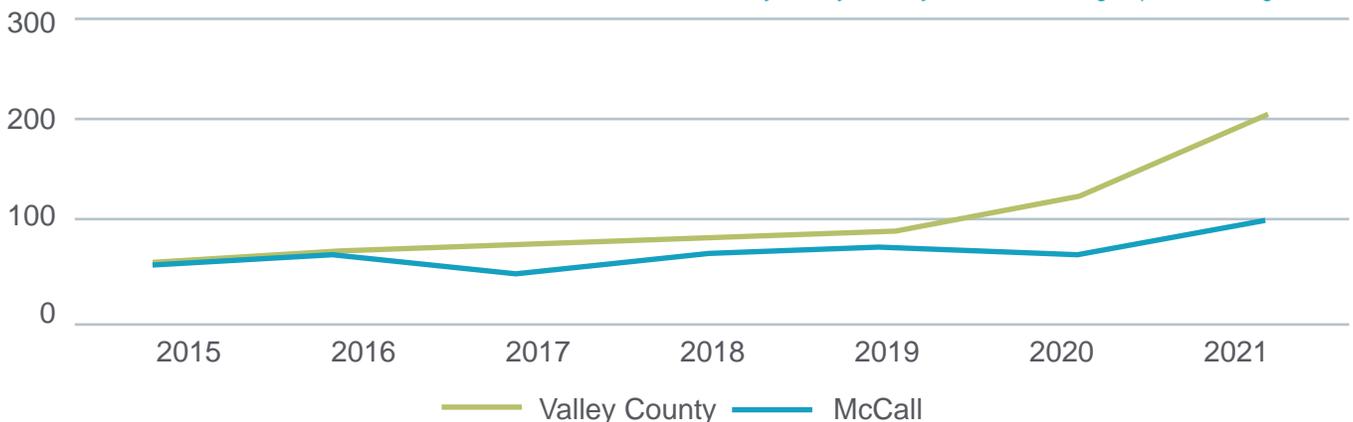


## POPULATION GROWTH

Valley County has witnessed substantial population growth, 19 percent, between 2010 and 2020. During the same period, McCall grew by 28 percent. This growth is reflected in the number of residential building permits. Both Valley County and the City of McCall have experienced significant spikes in building permits, 58 percent and 54 percent respectively, in recent years. The population of Treasure Valley alone could pass 1 million people in the next 20 years, demonstrating that resources and visitation need to be managed now. Over the past six years, there have been over 80 shoreline permits issued in the McCall Area Shoreline and River Environs District, including an average of seven per year for new construction, mostly larger homes replacing original cabins.

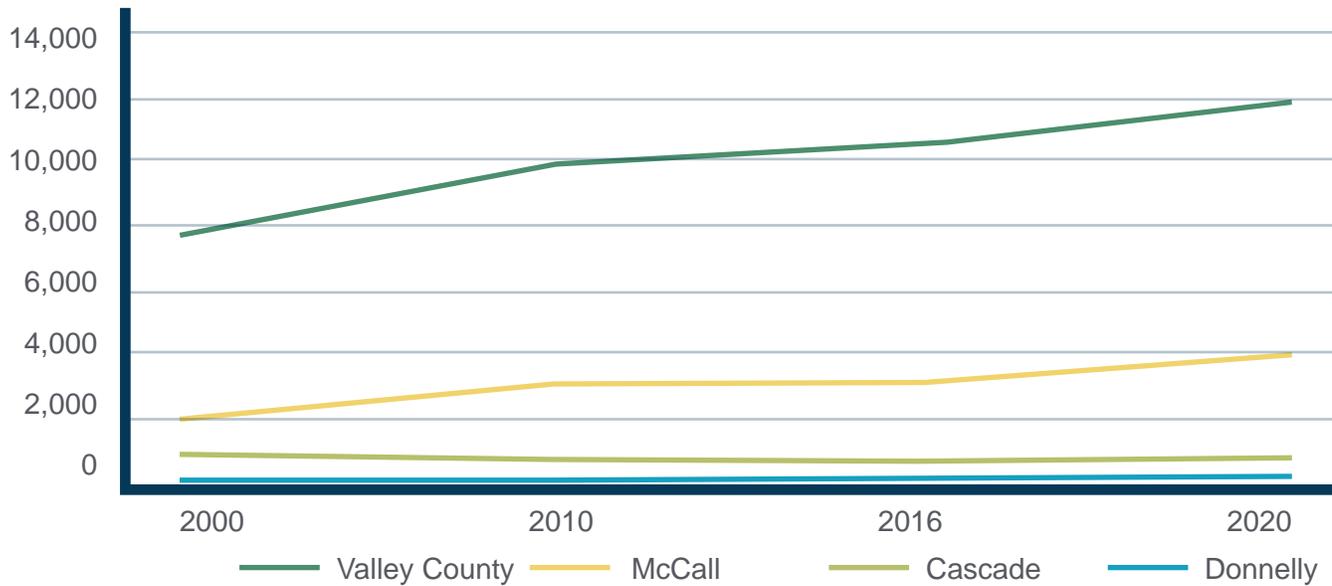
## BUILDING PERMITS

*Valley County and City of McCall Building Department, August 2021*



## POPULATION

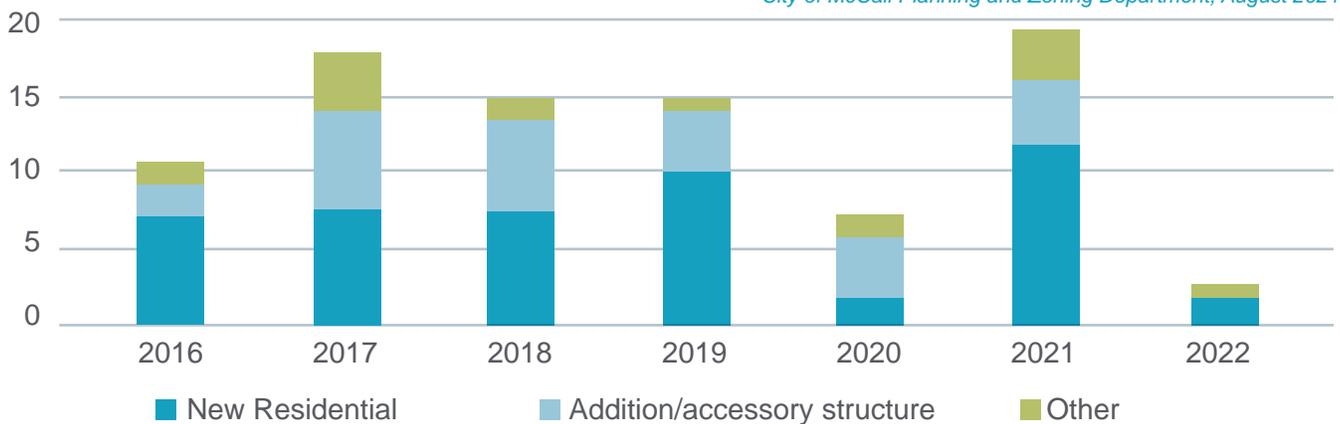
U.S. Census Bureau



*The population of Treasure Valley alone could pass 1 million people in the next 20 years, demonstrating that resources and visitation need to be managed now.*

## SHORELINE PERMITS (MCCALL AREA)

City of McCall Planning and Zoning Department, August 2021





## LAND USE IMPACTS ON THE WATERWAYS

**Water Quality** – Pressure from changing land use activities can result in the mobilization and loading of nutrients (nitrates and phosphorus) to aquatic ecosystems via sediment, increased runoff, the application of fertilizers, faulty septic systems, and altered landscape (Dillon et al. 1986, Dillon et al. 1994, Carpenter 2008, Schindler 2008, 2012, Paterson et al. 2008). The cumulative effects of increased nutrient loading are typically highly detrimental to fresh-water lakes and streams (Downing 2013, USEPA 2021). Strict adherence to good conservation practices can mitigate these negative impacts.

The water quality of Lake Cascade and Big Payette Lake is compromised by runoff from the surrounding land uses. Expected growth and development will further exacerbate these impacts. Contributing factors include:

- On site septic systems located proximate to waterways and the potential release of nitrogen and phosphorous into surface waters if these systems are not maintained;
- Pathogen and nutrient-laden waste generated by pets and livestock;
- Sediment, pesticides, and pathogen loads from crop production/agricultural and livestock grazing;
- Hydrocarbons, pesticides, nutrients, pathogens, heavy metals, and thermal pollution from urban and landscape run-off and drainage systems;
- Dust and hydrocarbons from roads;
- Sediment, salt, and oil runoff released from roads, pavement, and other impervious surfaces;
- Sediment loads from land erosion and loss of vegetative cover caused by timber harvesting and wildfire burns; and
- Increases in residential water use for domestic and landscaping needs (including aesthetic ponds) results in a reduction in water quantity available in the rivers, and also reduces water quality (i.e. temperature).



**Recreation** – Land uses surrounding the waterways influence the quality of the recreation experience on, and adjacent to, the water. The adequacy, location, maintenance, and safety of land-based support facilities for recreational activities are important in the enjoyment of the waterways. Considerations include the adequacy of:

- Public land for accessing the waterways, such as boat launch areas, day use facilities, and beaches;
- Facilities that support recreational activities, including restrooms, signage, and refuse disposal;
- Parking and roads to meet user demand; and
- The balance of access and facilities distribution with lake congestion or choke point areas.

**Environmental Resources** – The waterways are valued for the inherent beauty of their natural environment and are appreciated as part of a larger natural ecosystem. Overly developed water edges impact the waterways in the following ways:

- They create physical and visual barriers between the water and its watershed with a loss in the authenticity of the natural system.
- They cause habitat loss and fragmentation for indigenous wildlife species.
- They replace natural filtering wetlands vegetation with buildings and fertilized landscaping.
- They modify the natural landform of the shoreline with walls and severe topographical changes.
- They introduce activity, noise, and lights to a naturally quiet and peaceful environment free from light pollution at night.
- They introduce septic systems close to the shoreline.

# ENVIRONMENTAL RESOURCES

## WHY DOES IT MATTER

The waterways in Valley County are a very valuable environmental resource, but they are only beneficial if they are clean and safe. Big Payette Lake, Lake Cascade, Warm Lake, and their tributary rivers and creeks provide important habitat to cold water aquatic life and support salmonid spawning.

However, human activities, as described previously, can cause adverse impacts to waterways to the point where they can no longer provide the beneficial uses that we expect and have enjoyed in the past. Activities that occur on the land adjacent to the lakes and streams and throughout the watershed affect water quality and can create hazardous and toxic conditions for humans and animals.

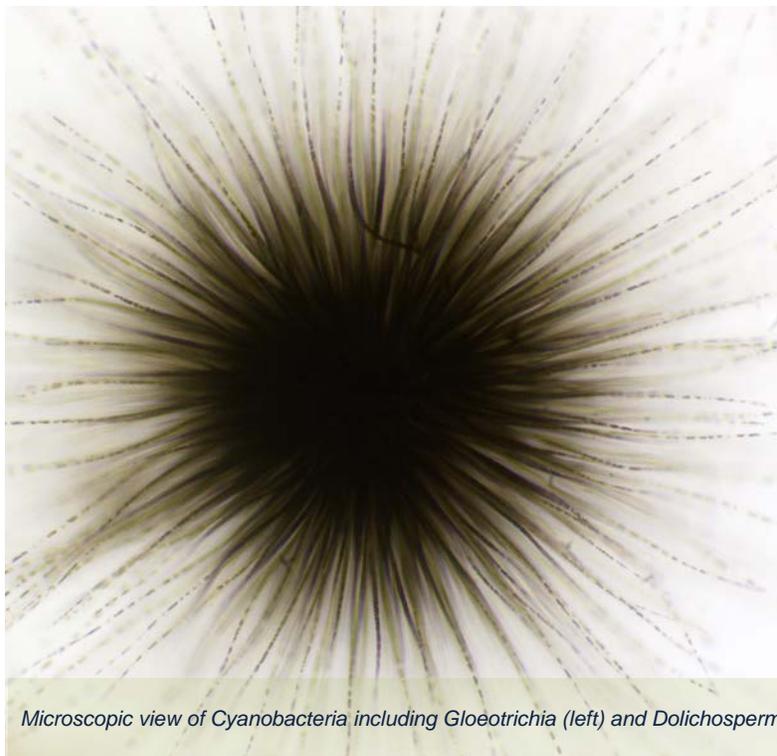
The effects of climate change and prolonged drought may require conservation measures to meet designated water use obligations and water quality and quantity goals.

## MANAGEMENT GUIDANCE

Many of the water quality issues associated with the waterways have been brought to light as a result of assessments by the IDEQ mandated by the federal Clean Water Act (CWA). This Act requires that states and tribes restore and maintain the chemical, physical, and biological integrity of the nation's waters. Section 303(d) of the CWA requires publication of a list of impaired water bodies that do not meet water quality standards and the development of total maximum daily loads (TMDL) for pollutants that are causing impairments. A TMDL is an estimation of the maximum pollutant amount that can be present in a waterbody and still allow that waterbody to meet water quality standards for a specific beneficial use.

Of the waterways included in this Plan and their tributaries, the IDEQ has set TMDLs for Lake Cascade, the West Mountain tributaries to Lake Cascade, Gold Fork River, Boulder Creek, Willow Creek, Mud Creek, North Fork Payette River, tributaries to Big Payette Lake, and Box Creek. A Watershed Management Plan is in place for Lake Cascade and TMDLs are reviewed every five years to assess if conditions are improving, declining, or remaining stable. The last TMDL review for the Lake Cascade Watershed was completed in 2018 and the last TMDL review for the North Fork Payette River Watershed was completed in 2012. Specifics by waterway are shared in following sections. On a local level, the Valley County Waterways Ordinance includes a regulation against discharging sewage, garbage, fuel, and other materials directly into the waterways. However, it does not address other practices that could help protect the environmental





*Microscopic view of Cyanobacteria including Gloeotrichia (left) and Dolichospermum and Aphanizomenon (right). Lenard Long*

qualities in and around the waterways.

## ENVIRONMENTAL CONCERNS

There are several environmental concerns that affect the ability of the Valley County waterways to provide habitat for fish and other aquatic species, safe water for recreation, and clean drinking water. The following is a description of the water quality issues that are current concerns in Valley County.

### ALGAL BLOOMS

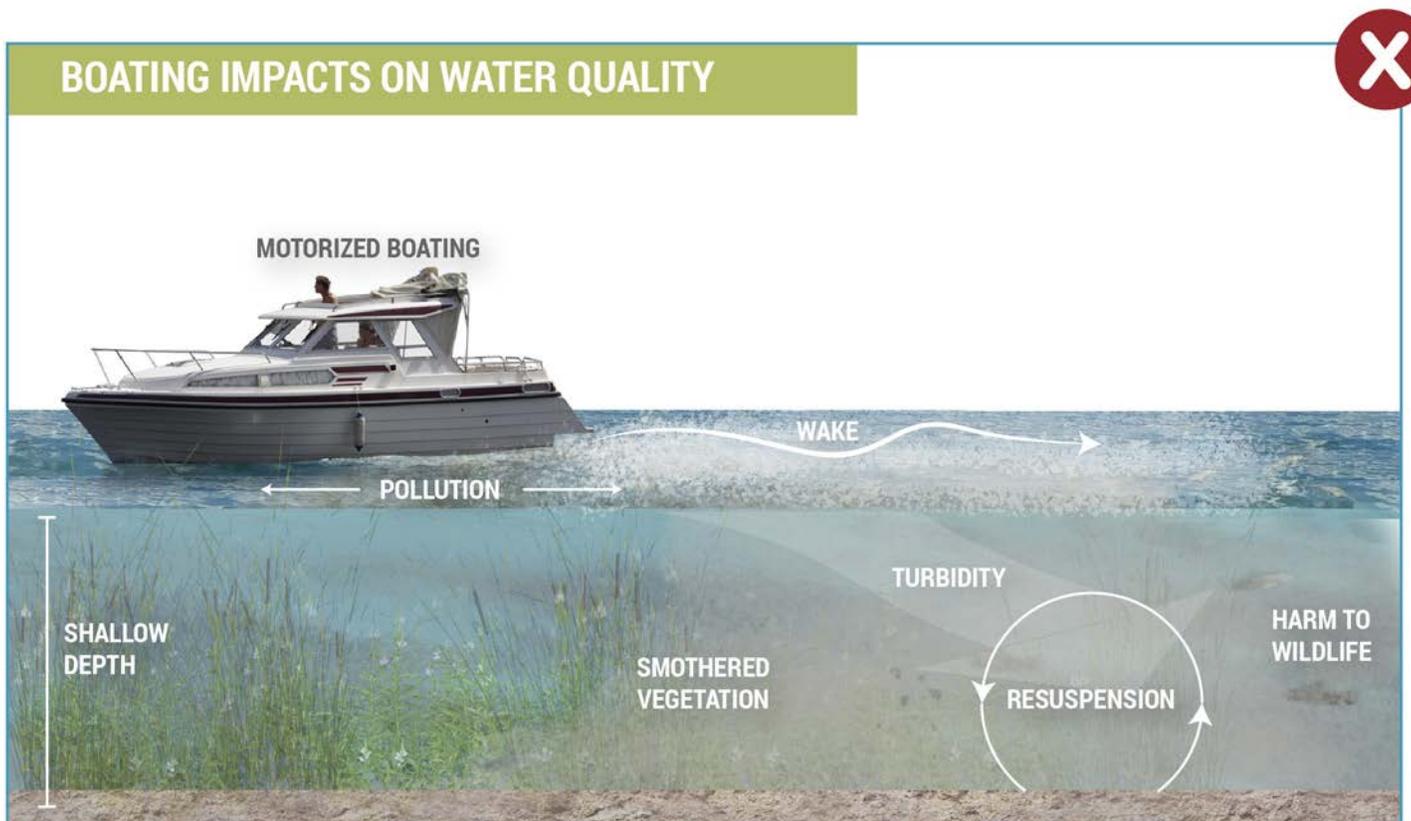
Phytoplankton are free-floating microorganisms found in lakes, streams, and oceans that convert sunlight into energy through photosynthesis. They are an important part of the aquatic food chain. The types of phytoplankton include algae, cyanobacteria, protist, and diatoms. Although not technically algae, cyanobacteria is commonly known as “blue-green” or “toxic” algae. When it grows excessively it becomes visible to the naked eye and can release toxins into the surrounding water or air making it harmful to people, animals, fish, and other parts of the ecosystem.

There are many adverse environmental impacts of excessive blue-green algae growth (harmful algal blooms). The toxins that are released can cause skin irritation, and if the water is ingested, they can cause gastrointestinal illness and liver damage in humans and death in animals. As the algae die, they sink to the bottom of the waterbody, decompose, and remove oxygen from the water in the process. The pH of the water can also be affected due to the release of acid and base compounds during respiration and photosynthesis. This depletion of dissolved oxygen and change in pH is harmful to fish and other aquatic organisms. Large algal blooms can also block sunlight from reaching organisms deeper in the waterbody and cause unpleasant odors.

Harmful algal blooms are caused by the presence of excessive nutrients and can be exacerbated by warmer water temperatures and slow-moving water. Nitrogen and phosphorus are the primary nutrients of concern. Since some types of cyanobacteria can utilize atmospheric nitrogen as a source of growth, phosphorous is most often the limiting factor. Algal blooms are a sign of premature eutrophication of lakes due to excess nutrients. Eutrophication is the process by which a waterbody becomes enriched in dissolved nutrients (e.g., phosphates), stimulating the growth of aquatic plants and usually resulting in the depletion of dissolved oxygen.

Phosphorus occurs naturally in the environment within soils and certain types of rocks. Anthropogenic (human-caused) sources of phosphorus include fertilizers, detergents, wastewater, erosion, and livestock grazing. Past studies and research in Valley County have shown that waterways are vulnerable to water quality degradation from anthropogenic activities, including development. A study of phosphorus loading around Lake Cascade found that due to the limited movement of phosphorus in sandy soils there was potential for phosphorus contamination from residential septic systems if they were installed within 13 meters of a water course or installed into the seasonal or permanent water table (Zimmer, 1983). Livestock grazing can contribute both phosphorus and nitrogen to waterways from feces and soil erosion that is carried to lakes and rivers by stormwater runoff. Grazed watersheds have been found to contribute 10 to 50 times more phosphorus to receiving waters compared to forested or ungrazed watersheds (Duda, 1983) (Saxton, 1983).

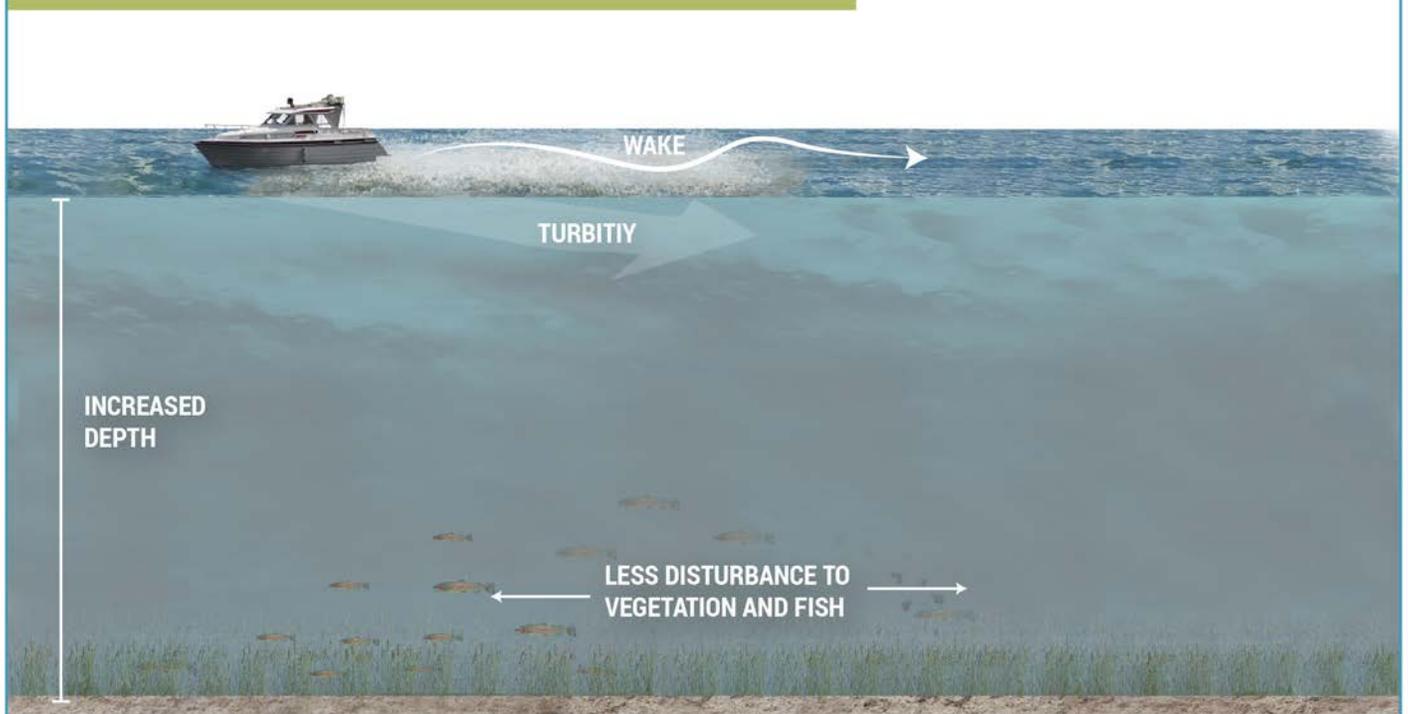
There are several metrics used to measure the potential for harmful algae blooms, including concentrations of phosphorus, chlorophyll-a, and dissolved oxygen; water clarity measured by Secchi transparency; and measurements of pH. Chlorophyll-a is the primary photosynthetic pigment of phytoplankton and is used as an estimator of phytoplanktonic biomass.



## REDUCING IMPACTS OF BOATING

Although no wake zones are typically based on the horizontal distance from the shore or other features of concern, there is scientific support for adding no wake zones based on vertical depth of the waterbody. A 1994 study by the Corps of Engineers investigated the relationship between boat traffic and sediment resuspension and found that the amount of sediment resuspension varied with water depth and sediment type. Silt substrates were observed to have the highest amount of sediment resuspension in water depths of three feet and no resuspension seen at 8 feet depth (U.S. Army Corps of Engineers, 1994). Additional studies have also found that the highest amount of sediment resuspension arises when boats are operating in waters less than around 8 feet deep (Yousef, 1974), (Cucinski, 1982) (Klein, 1997). Theoretical boat slip streams show that motorboats have potential to affect bed sediments to a depth of 33 feet depending on speed and angle of the trim angle of the propeller. However, at slipstream velocities of less than 0.25 m/s (0.6 mph) this depth is reduced to less than 4 m or approximately 12 feet (Ray, 2020). A 2003 study combined theoretical and experimental investigation of hydrodynamic impacts of recreational watercraft in shallow waterbodies and found that there was minimum potential for impact at water depths greater than 9 feet in a fine sand bed lake and 15 feet in a silt bed lake. Although impact varies depending on boat size, engine size, speed, and substrate type, a literature review by Wisconsin DNR noted that few impacts have been found at depths greater than 10 feet (Asplund, 2000). Thus, adding no wake zones in areas with depths less than 10 feet could be implemented to reduce the resuspension of bottom sediments and subsequent nutrient loading.

### POSITIVE IMPACT OF INCREASED BUFFERS



## SEDIMENTATION

Sediment originates from the erosion of rocks and soils and is the most common nonpoint source pollutant that affects rivers, streams, and lakes. Nonpoint source pollution comes from many diffuse sources rather than from an easily identifiable single source (e.g., sewage treatment plant or industrial source). Elevated levels of suspended sediment and bedload sediment are harmful to fish, prevent plant growth, and are major sources of phosphorus. Sediment deposited at the bottom of lakes can continuously release phosphorus causing eutrophication even while external inputs of nutrient loading are reduced.

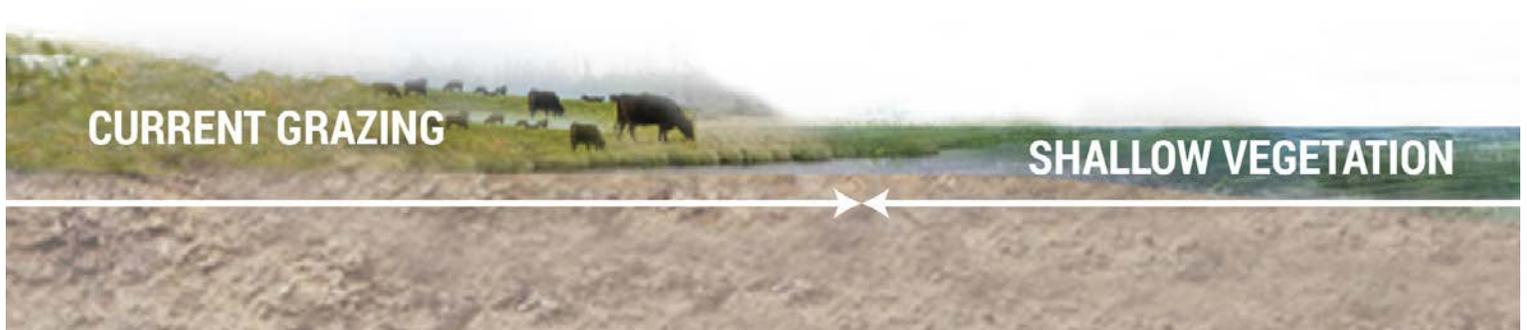
Sediment is mobilized and carried to lakes, rivers, and streams through a variety of mechanisms. Along lakes and reservoirs, boat wave-induced erosion increases sediment in the waterbody, especially during high water periods. Shoreline erosion due to winds has created 5- to 50-foot vertical cliffs in some areas on the east shore of Lake Cascade. Livestock grazing and streambank erosion can cause excessive sediments to be carried into the receiving waters. Sedimentation is also caused by uncontrolled off-road vehicle use and gravel roads with poorly functioning drainage structures.

The metric used to measure the sedimentation potential of a stream is the percentage of the banks that are considered stable. The goal of the National/Idaho Pollutant Discharge Elimination System Stormwater Programs under the CWA is to limit erosion and sediment pollution. Measures to implement this goal should be enforced.

## PATHOGEN (COLIFORM) AND NITRATE CONTAMINATION

Coliform bacteria are present in the environment and in animal and human feces. Although coliform bacteria are unlikely to cause illness, their presence is an indicator of the potential presence of harmful pathogens. Human health effects from pathogenic coliform bacteria include nausea, vomiting, diarrhea, acute respiratory illness, meningitis, ulceration of the intestines, and possible death. Since Big Payette Lake is used as a source of drinking water for the City of McCall, pathogen contamination is a real concern.

In addition to coliform bacteria, nitrates are also a concern for drinking water supplies. At concentrations above 10 mg/L in drinking water, nitrates can cause a diminished capacity of the blood to transport oxygen in infants younger than three months, which leads to “blue baby syndrome.” Blue baby syndrome is a condition where a baby’s skin turns blue due to a lack of oxygen.



Both coliform and nitrate contamination can originate from wastewater effluent or runoff over agricultural or forested lands where animals are present. There was a measurable impact on the fecal bacteria detected in streams downstream of recreational housing on the west side of Lake Cascade and an even higher impact downstream of grazed land (Zimmer, 1983). Since nitrate nitrogen (one part nitrogen plus three parts oxygen) is highly mobile and standard septic systems are only able to achieve 10 to 20 percent removal rates (U.S. EPA, 2002), septic leachfields and unpermitted systems located near waterbodies are concerns.

### AQUATIC HABITAT HEALTH

The primary environmental hazard to aquatic species is low dissolved oxygen during the winter and summer months, elevated water temperatures in the late summer, and low water levels or streamflow. Juvenile aquatic organisms are more susceptible to the effects of low dissolved oxygen. Reservoir drawdowns and low stream flows limit fish habitat and limit fish access to refuge areas in the tributaries where water is more highly oxygenated and cooler.

Dissolved oxygen concentration above 6 mg/L is optimal for aquatic life. Cold water holds more dissolved oxygen than warm water and increased flow rates provide more aeration and higher dissolved oxygen concentrations. Thus, elevated temperatures and low flows reduce dissolved oxygen and negatively impact aquatic habitat health.

### RIPARIAN VEGETATION CONDITIONS

Riparian zones or areas are the interface between land and waterbodies. Riparian vegetation provides a transition between wetland and upland areas. The riparian areas adjacent to the waterbodies provide water quality enhancement, flood control, shoreline stabilization, and very important wildlife habitat. Shading provided by willows and other riparian vegetation enhances aquatic habitat by cooling the water and increasing dissolved oxygen levels and provides protective cover for nesting waterfowl.

Livestock grazing, land development adjacent to waterbodies, and proliferation of access paths can destroy the riparian vegetation, in addition to increasing erosion and sedimentation potential. The riparian vegetation can also be greatly impacted by invasive, non-native plants.

*Certain areas of Lake Cascade are very shallow. So much so that the 300-foot buffer may only extend to depths of a few feet. These areas are not boatable when water levels drop in the summer.*



## Community Input on the Most Highly Rated Waterway Attributes

- Safety
- Parking

# WATERWAY EXISTING CONDITIONS HIGHLIGHTS

## LAKE CASCADE

Lake Cascade is a relatively shallow man-made reservoir managed by Reclamation. The average depth of the lake is 26 feet at full pool (high pool) and approximately 12 to 14 feet after drawdown in late summer. Designated water use includes contract irrigation, power generation, fish migration, augmentation flow, flood control, recreational use, and drinking water supply.

## RECREATION

There are 25 existing recreation sites at Lake Cascade, 19 of which are under Reclamation jurisdiction with Lake Cascade State Park managing much of the recreation infrastructure and programming; the other six sites are under USFS jurisdiction. There are 10 boat launches managed by IDPR or USFS. Recently, there have been discussions of adding new marinas but no official plans have been approved. There are approximately 300 camping sites, including developed sites, group camping sites, private campgrounds, yurts, and dispersed camping spaces. There are numerous private residential docks, especially on the northeast arms. The lake provides important aquatic and terrestrial wildlife habitat and fishing is popular year-round. Some areas surrounding the lake are closed or inaccessible during winter but others provide cross-country skiing, snowshoeing, fat tire biking, ice fishing, and snowmobiling trails.

## LAND USE

The 86-mile shoreline of Lake Cascade is a mix of natural forest, agricultural, recreational, and residential land uses. Almost two dozen campgrounds and day use areas, some with boat launches and direct access to the water, are present at Lake Cascade. Development is more concentrated on the east and north sides of the Lake with scattered residential subdivisions along the west side. Most prominent is the Tamarack Resort and the West Mountain subdivision. Grazing land exists to the east, north and south, as well as natural habitat, including forests and wetlands. A private airstrip and golf course round out the variety of land uses. For much of the perimeter of Lake Cascade, roads separate the waterway from development. Much of the West Mountain Road adjacent to the Lake is partially graveled and very dusty. Aside from the urban drainage from McCall and Payette lakes, the watershed of Lake Cascade is primarily forest and agricultural land. Increasingly, the trend is to convert the agricultural land to residential uses, including subdivisions and large rural residential parcels. As an example, Tamarack Resort, on state-leased land, converted forest land to a resort.





## ENVIRONMENTAL RESOURCES

Six areas of over 4,000 acres at Lake Cascade are specifically designated as Wildlife Management Areas (WMAs). The overall purpose of WMAs is to protect habitat for migratory birds and sensitive, threatened, or endangered wildlife species. The most crucial, abundant, and sensitive of these habitats are the riparian areas and wetlands. The emergent vegetation, adjacent wet meadows, swales, mudflats, and sandbars are critical as nesting, feeding, and loafing habitat for waterfowl, shorebirds, wading birds, and raptors.

Water quality became a concern in Valley County in the 1970s when noxious algal blooms, aquatic weeds, and fish kills began to occur frequently in Lake Cascade. In the early 1990s, significant blue-green algae blooms caused by low water levels, high phosphorous loading, and hot weather resulted in 23 cattle dying from ingesting the toxic algae in the Lake. In 1995, a public health advisory was issued for Lake Cascade due to massive algal blooms. In 1996, the Lake Cascade Phase I Watershed Management Plan was developed and TMDLs were established for phosphorus for Lake Cascade, North Fork Payette River, and several tributaries.



OWNERSHIP RECLAMATION SIZE (ACRES) 28,000  
 RECREATIONAL CHARACTER URBAN-RURAL

SURROUNDING LAND USES

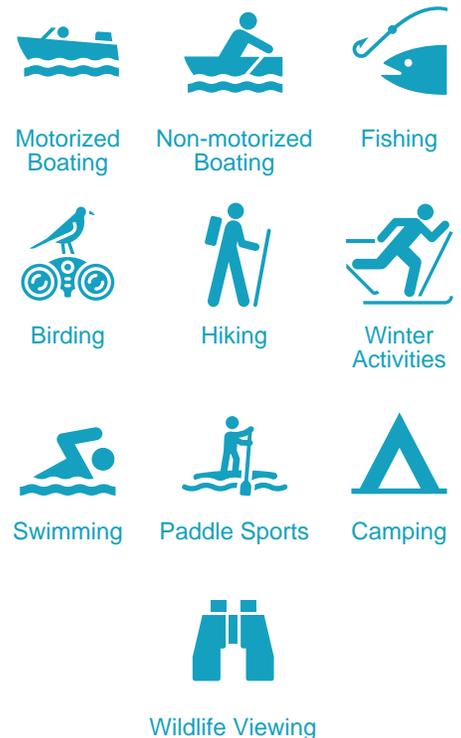
- Rural residential parcels
- Residential subdivisions
- Residential condominium
- City Residential
- Irrigated and dry grazing land
- USFS
- Wetlands
- Conservation areas
- Airstrip
- Campgrounds
- Day use areas
- Boat launches
- Golf Course

ADJACENT OWNERSHIP

- Public
  - Bureau of Reclamation
  - Boise National Forest
  - Idaho Department of Parks and Recreation
  - Valley County
  - City of Cascade
  - City of Donnelly
- Private

Identified sources of phosphorus in Lake Cascade include unimproved roads adjacent to the Lake, unpermitted and substandard septic systems in the West Mountain Area (Lappin, 1989), internal recycling of nutrients within the Lake, and land management practices within the watershed (Lappin, 1989). Point sources of phosphorus include two wastewater treatment plants and the Idaho Department of Fish and Game fish hatchery.

Water quality monitoring by the IDEQ from 1989 through present indicates that there have been improvements to water quality in the Lake and most of the tributary systems, but the TMDL targets have still not been met. Recreation, cold water aquatic life, and agricultural water supply are still designated as impaired. Impaired water quality is apparent in the increased frequency of posted public health advisories including in 2021 for Lake Cascade due to toxic algal blooms. In Lake Cascade, more frequent and in-depth monitoring of cyanobacteria and its causes of proliferation is warranted.



## Community Input on the Most Highly Rated Waterway Attributes

- Water Quality
- Cleanliness
- Accommodations/  
Services

## BIG PAYETTE LAKE

Big Payette Lake is a relatively deep glacial lake often referred to as the “crown jewel” of McCall because of its clear water and nearby forest landscape, making it the area’s major attraction. Big Payette Lake is important to McCall residents from a recreational and economic standpoint primarily in the summer months. It also supplies the area’s potable drinking water and therefore it is vital to preserve the water quality and shoreline. The primary boating season at Big Payette Lake is early July to Labor Day due to its relatively cold temperatures.

## RECREATION

Much of the public land surrounding Big Payette Lake is managed as Ponderosa State Park, which offers over 1,600 acres of natural wilderness on the peninsula in the center of the lake. Ponderosa State Park offers campsites, hiking trails, and habitat for terrestrial and aquatic wildlife. The area’s abundant wildlife resources attract nature viewers and photographers throughout the year. Ponderosa State Park includes 14.3 miles of groomed Nordic ski trails ranging in difficulty from recreational to competitive and 3.4 miles of designated snowshoe trails. All of these trails are open for hiking during the rest of the year.

The rest of Big Payette Lake is surrounded by private land, as well as City of McCall parks. McCall’s five parks located along Big Payette Lake draw both locals and visitors and are highly used during the peak season. Most visible is Legacy Park, which supports a myriad of shoreline activities such as swimming, non-motorized boating, picnicking, volleyball, and concessions. Many private homes have their own boat docks or other amenities on the water. IDL owns a significant amount of shoreline property in the northern portion of the lake.

## IDL: NAVIGATIONAL ENCROACHMENT PERMITS

*Boat Garage – 13*

*Boat Lift – 3*

*Breakwater – 10*

*Commercial Marina – 11 (Includes City  
of McCall and Ponderosa State Park)*

*Community Dock – 44*

*Mooring Buoy – 118*

*Other Navigational – 15 (Mostly  
Private Boat Ramps)*

*Single Family Dock – 392*

*Two Family Dock – 30*



City of McCall

## LAND USE

Big Payette Lake is used for irrigation, recreation, and is the City of McCall’s domestic water supply. For these water-related uses, water quality is critical.

Big Payette Lake is anchored on the south by commercial and residential land uses in the City of McCall and public access to the lake is provided by five parks owned and operated by the City of McCall. Approximately 7 miles (27 percent) of the shoreline is adjacent to Ponderosa State Park, which is located on a peninsula that divides the lake into west and east arms, and at the North Beach on the northern end of the lake where the Payette River flows into the lake. Residential development second home cabins surround much of the remainder of the 26-mile-long shoreline with a scattering of private campgrounds and one resort lodge. USFS and IDL-managed land exists along both sides of the northern perimeter of the lake, continuing north, west, and east within the lake’s watershed. Contrasted with much of Lake Cascade, development is immediately adjacent to the lake, with the road access behind developed areas. Access through the North Beach and along the northern half of the eastern side is from gravel roads.

The Big Payette Lake shoreline could be further developed and redeveloped as IDL divests itself of the remaining leased cottage sites and moves toward higher and best uses for some endowment lands. In the agency’s draft “Payette Endowment Land Strategy” (December 2020), 41 acres of endowment land were identified as transition areas over the next 20 years, including two islands in the lake and land along the east shoreline. The endowment land surrounding Big Payette Lake is a controversial issue at this time related to discussions between development and conservation. Another 3,500 acres of endowment land not identified for transition in the report immediately borders the lake.



Downtown McCall. Chad Case

## ENVIRONMENTAL RESOURCES

In 1997, a technical study of Big Payette Lake was conducted to evaluate its capacity to assimilate nutrient inputs and its potential for eutrophication. Based on measurements of total phosphorus, nitrogen, and chlorophyll-a taken in 1995 and 1996, the lake was found to be oligotrophic (low productivity) because blue-green algae was found to be rare and total phosphorus was consistently low. However, the bottom of the lake had low dissolved oxygen concentrations due to the colder water at the bottom not mixing with the upper layers. Accumulating organic matter in the lake bed sediments also caused an internal load of nutrients. These factors, combined with increases in residential development and recreational use, cause concern for potential future eutrophication of Big Payette Lake and a reduction in its water quality.

Coliform contamination and volatile and synthetic organic chemical contamination from fueling sources near the water supply intakes is a concern. In the summer of 2000, the surface water intake at the Shore Lodge encountered high levels of bacteria above the safe drinking water limits.



OWNERSHIP  
IDAHO DEPT. OF  
LANDS

RECREATIONAL  
CHARACTER  
URBAN

SIZE (ACRES)  
5,330

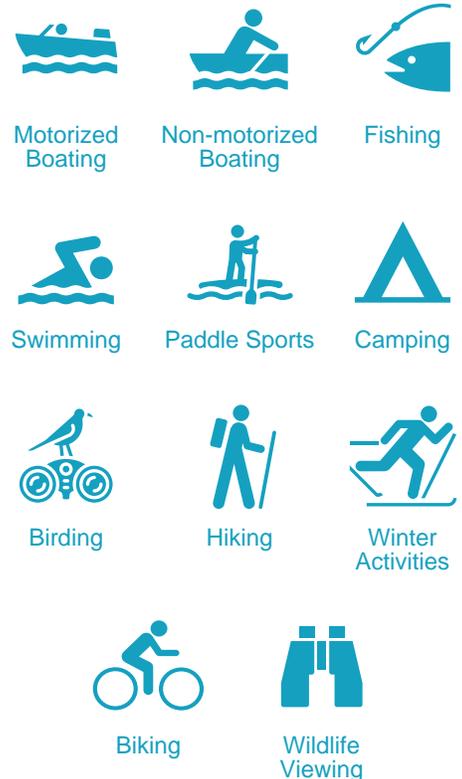
SURROUNDING LAND USES

- City commercial (lodging, retail, restaurants, recreation services)
- City residential
- Rural residential subdivisions
- Rural residential parcels
- Residential condominiums
- USFS land
- Wetlands
- Campgrounds
- Day use areas
- Boat launches

ADJACENT OWNERSHIP

- Public
  - Idaho Department of Lands
  - Idaho Department of Parks and Recreation
  - University of Idaho
  - Valley County
  - City of McCall
- Private

The Big Payette Lake Management Plan was completed in 1997. It included a management plan, an implementation plan, a monitoring and trend analysis, and an extensive list of recommended BMPs (Big Payette Lake Water Quality Council, 1997). From 1997 to 2020, the IDEQ has performed monitoring of dissolved oxygen, total phosphorus, total nitrogen, and chlorophyll-a in Big Payette Lake (Cusack, 2020). The summary report was completed in 2020 and found that total phosphorus had remained relatively consistent but had increased in 2020 and should be closely monitored. Total nitrogen was found to have decreased since 2005. Two of the four water quality objectives included in the Big Payette Lake Management Plan were not met for three consecutive years. This included the objective related to dissolved oxygen concentrations from June to September and the median value of total phosphorus measured from May to September. Measurements and impacts of hydrocarbons in Big Payette Lake should be evaluated. Eurasian water milfoil has been establishing in Big Payette Lake, causing impacts to aquatic habitat by consuming oxygen and blocking sunlight. The Valley County Weed Department is actively working to remove milfoil from Payette and Warm lakes.





## Community Input on the Most Highly Rated Waterway Attributes

- Water Quality
- Safety
- Aquatic Vegetation/  
Habitat

### WARM LAKE

Warm Lake is the largest natural lake in the Boise National Forest and it is geothermal. There are many natural hot springs in the area.

#### RECREATION

Motorized and non-motorized boating are popular activities. There is a small beach area for swimming. Fishing, hiking, birding, and wildlife viewing are also popular activities. Along with USFS campgrounds, two lodges manage recreation along the north side of the lake through USFS leases.

#### LAND USE

The perimeter of the 1.6-mile-long Warm Lake shoreline includes two lodges, three campgrounds, a swimming beach, and three residential cabin neighborhoods on USFS-leased land. The Northshore Lodge manages 10 cabins and a restaurant/store. Warm Lake Lodge hosts seven cabins and seven camping sites. A small neighborhood of cabins borders the western edge of the lake. The campgrounds include Picnic Point with eight sites, Shoreline with 31 sites, and Warm Lake with 12 sites.



**OWNERSHIP**  
USFS

**RECREATIONAL CHARACTER**  
SEMI-RURAL

**SIZE (ACRES)**  
423

**SURROUNDING LAND USES**

- Two historic lodges with restaurants, lodges and store
- Residential cabins on leaseholds in three neighborhoods.
- Campgrounds
- Swimming beach
- Boat launches

**ADJACENT OWNERSHIP**

- USFS - Boise National Forest

**ENVIRONMENTAL RESOURCES**

There has been no cause for concern to monitor water quality at Warm Lake, therefore minimal information exists. Potential impacts of current concern include increased use of recreational visitors, including wake boats, camping, and social trails, as well as nearby impacts from adjacent roads and future mining operations.

Non-motorized Boating

Swimming

Fishing

Birding

Hiking

Paddle Sports

Hot Springs

Wildlife Viewing

Motorized Boating

Camping



*Hidden Lakes. Jon Conti*

## **ALPINE LAKES**

There are nearly 300 alpine lakes within Valley County, most of which are only accessible via non-motorized means.

## **RECREATION**

Alpine lakes offer extraordinary backcountry experiences including camping, scenic viewing, and fishing (some lakes stocked with trout and other species by IDFG).

## **LAND USE**

Other land uses within the watershed of Valley County waterways include timber harvesting, unpaved access roads, dispersed recreational use, grazing, communication facilities, and limited mining.

## **ENVIRONMENTAL RESOURCES**

There has been no cause for concern to monitor water quality at the alpine lakes, therefore, minimal information exists.



Fishing



Camping



Hiking



Wildlife Viewing

OWNERSHIP  
USFS (TYPICAL)  
SIZE (ACRES)  
VARIES

RECREATIONAL  
CHARACTER  
PRIMITIVE

SURROUNDING LAND USES

- Forest lands
- Backcountry recreation

ADJACENT OWNERSHIP

- Public

## **NORTH FORK OF THE PAYETTE RIVER**

The North Fork Payette River flows approximately 113 miles south from the Salmon River Mountains to join the Payette River, which is a tributary of the Snake River. The river is popular for kayaking, whitewater rafting, fishing, birding, and wildlife viewing. A section of the river is 16 miles north of Banks is considered big-water Class V for whitewater kayaking. It has served as the site of the North Fork Championship – one of the most challenging whitewater competitions in the world. County Ordinance #20-11 defines non-motorized stretches of the river north of Lake Cascade and Payette Lake.

### **RECREATION**

Just upstream and downstream of Big Payette Lake are popular fishing and paddling sections of the river. The Meanders north of the Lake is a scenic flat water stretch through towering trees, where abundant wildlife can be spotted. Paddle sports are growing in the area. The Meanders can be accessed from multiple locations along the adjacent road causing resource issues with social trails and litter. Just south of the Lake through the City of McCall, the river can also be accessed for fishing and floating. It also can attract whitewater paddlers when the water level is right. However, access points aren't formalized and there are some issues with private property.

The BLM manages a recreation site on the North Fork Payette River, approximately 11 miles south of McCall. The site offers a small sandy beach, swimming, fishing, picnicking, and other sorts of non-motorized river activities. The surrounding forest offers birding and wildlife viewing.

Kelly's Whitewater Park (KWP) opened in June 2010. It includes a short stretch of the North Fork Payette that flows through the 3.4 acres of public park downstream of Lake Cascade. KWP offers rafting, kayaking, paddle boarding, and tubing opportunities. It also links to a five-mile walking path along the bank of the river. The mission of the non-profit park is "to provide local children with an opportunity to learn water sports and water safety while instilling an appreciation for the river."

A popular family-friendly whitewater trip with Class II and III rapids, that is also commercially rafted, is from the Cabarton Bridge down to Smith's Ferry. The put-in location is managed by Valley County and is very busy on summer weekends, to the point of creating safety and natural resource concerns.

### **LAND USE**

The land uses surrounding the North Fork of the Payette River between Lake Cascade and Big Payette Lake are predominately rural, characterized



John Webster for Tamarack Resort

OWNERSHIP  
N/A

SIZE  
113 MILES

RECREATIONAL CHARACTER  
SEMI-PRIMITIVE  
NON-MOTORIZED  
(ABOVE LAKE CASCADE);  
SEMI-PRIMITIVE  
MOTORIZED  
(BELOW LAKE CASCADE)

SURROUNDING LAND USES

- Rural residential parcels
- Rural residential subdivisions
- Residential condominiums
- Commercial
- Dry and irrigated grazing
- Irrigated crop lands
- USFS land
- Wastewater treatment plant
- Day use/river access points
- Private common areas
- Private campgrounds
- Fish Hatchery
- Trails

ADJACENT OWNERSHIP

- Public
  - Valley County
  - City of McCall
- Private

by grazing/crop land and residential development on large lots with more dense development within and near the cities. A fish hatchery and two sewage treatment facilities also exist along the river, including the McCall Wastewater Treatment Plant and the West Mountain Sewer and Water Plant.

**ENVIRONMENTAL RESOURCES**

The North Fork of the Payette River is susceptible to erosion and sedimentation and has been identified with sediment impairment below Lake Cascade. An IDEQ assessment of the river between Big Payette Lake and Lake Cascade indicates that elevated temperature is a potential impairment to cold water aquatic life and salmon spawning; however, nutrients are not in excess and dissolved oxygen and sedimentation is not impairments in this stretch of the river. Currently, the Payette Lake Recreational Water & Sewer District inter-sewage effluent storage pond leaks into an underdrain that discharges into the North Fork of the Payette River.



Kayaking



Fishing



Whitewater Rafting



Camping



Birding



Wildlife Viewing



# CHAPTER 3: THE PLAN

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## INTRODUCTION

The County-wide desired future condition guides the general management for the County-wide system of waterways, by building off public and partner interviews, the existing conditions summary, and case study review. Additional details are provided for each major waterway. Management maps help illustrate the community's vision to manage the land resources in such a way that protects water quality, reduces environmental impacts, and enhances the waterways. Priority strategies direct future management for each waterway, including process, policy, operational, and infrastructure opportunities.

*The lake is large enough to accommodate everyone.  
It comes down to better education. People want  
to do the right thing but need to know the rules.*

*- Waterway User*

## COUNTY-WIDE VISION

The following desired future condition and priority strategies sets the guiding vision for all waterways across the County.

### COUNTY-WIDE DESIRED FUTURE CONDITION:

A waterways system that balances and enhances recreation experiences, adjacent land uses, and environmental resources by:

- Optimizing each waterway for its desired recreation experience and protection of its natural resources;
- Protecting high water quality for all including end users, recreators, and aquatic ecosystems;
- Continuing positive visitor satisfaction and supporting a sustainable tourism industry;
- Ensuring complementary and integrated adjacent land uses that support waterways; and
- Providing an understandable and thoughtful path forward for our community and visitors.



## COUNTY-WIDE OBJECTIVES:

Objectives that apply County-wide include:

- CW 1.** Maintaining and enhancing amenities to ensure the provision of a high-quality recreation experience and higher quality facilities.
- CW 2.** Ensuring public safety of water-based recreationalists, including both motorized and non-motorized boating.
- CW 3.** Conserving and promoting ecological processes, including maintaining healthy wildlife populations, fisheries, and native aquatic plant communities.
- CW 4.** Maintaining strong partnerships with the County, Reclamation, IDPR, IDL, USFS, IDFG, IDEQ, Valley County Weed District, VSWCD, NRCS (Natural Resources Conservation Service), North Fork Payette Watershed Coalition, local municipalities, and landowners, among others.
- CW 5.** Managing upland uses within watersheds to protect water quality, including development, recreational access, weed control, forest management, farming, and grazing.
- CW 6.** Implementing actions from the Valley County Groundwater Quality Improvement and Drinking Water Source Protection Plan (2022) and the Implementation Plan for the Cascade Reservoir Phase II Watershed Management Plan (2000).
- CW 7.** Creating a desired future condition to support annually monitoring and reporting keystone indicator data to a consolidated database.

## Definitions for Waterway- Specific Visions

The visions for each specific waterway is made up of four parts:

- **Desired Future Condition:** Statement of purpose that describes the ultimate management scenario.
- **Priority Strategies:** Initiatives, guidance, and management recommendations that are needed to maintain the desired future condition.
- **Management Map:** A geographic illustration of priority strategies.
- **Keystone Indicators:** The primary metrics that will be used to track progress to achieve the desired future condition. Additional details of implementation of the indicators will be identified in the Adaptive Management Plan.

# WATERWAY SPECIFIC VISION & STRATEGIES

## LAKE CASCADE VISION

### *Desired Future Condition*

Lake Cascade enhances water quality while fostering an emerging outdoor recreation industry.

### PRIORITY STRATEGIES

- LC 1.** Encouraging appropriate use to prevent user conflicts and support the environment.
- LC 1a. Establish new safety zones around areas identified as High Impact Caution Areas to include reducing speeds and establishing directional travel.
  - LC 1b. Establish no wake management areas where water depth is 10 feet or less and maintain the current 300 foot shoreline buffer per County Ordinance.
    - Publishing materials on water fluctuations and maps of high and low pool and educate the public on the Lake's purpose.
    - Publishing maps and data via mapping applications GAIA, onX, Avenza (georeferenced PDFs), and/or Navionics and educate users before they get on the water.
  - LC 1c. Educate the public about Idaho State Statutes Operation of Vessel Section 67-7077 considering no wake rules that apply within 100 feet of a dock, person, or structure.
  - LC 1d. Maintain level of boater safety enforcement and marine sheriff patrols. Publish Wakeboat Etiquette Tips; start a Ride the Core, Avoid the Shore program. Determine sources for more patrol funding.
  - LC 1e. Incorporate a public involvement process to cite new marinas to minimize changes to the natural landscape, provide for safe navigation, and meet indicators for carrying capacity.
  - LC 1f. Work with State agencies to assess the need and implementation opportunities for aquatic invasive species checks at specific boat ramp locations.

### Community Input on Waterway Concerns

- Recreation
  - Boat waves
  - Carrying capacity
- Environmental Resources
  - Phosphorus and toxic algae blooms
  - Nitrogen and other nutrients
  - Dust particulates
- Land Use
  - Rangeland/grazing management
  - Increasing residential development impacts
  - Post-wildfire impacts

### GRAZING SET BACK





Logan Simpson

- LC 2.** Creating complementary land uses that contribute to water quality health to reduce occurrences of public health advisories due to harmful algal blooms.
  - LC 2a. Work with irrigation districts, IDFG, and Idaho Power to assess locations of water diversions and possible changes to maintain higher flows and colder water temperatures.
  - LC 2b. Work with NRCS and private landowners to implement grazing management plans to exclude livestock near streams and waterway shorelines, alternate water sources, and other conservation practices.
  - LC 2c. Strengthen conservation practices from the impacts of grazing and return flood irrigation flows.
  - LC 2d. Support EPA's recommendation to complete septic tank inspections every 3-5 years to determine if pumping and/or repairs are needed. Complete inspections upon sale of a property and provide ways to incentivize septic owners to maintain their systems.
  - LC 2e. Support a South Lake Recreation Water and Sewer District centralized sewer collection and treatment system.
  - LC 2f. Enhance education on the purpose and operations of Lake Cascade as a reservoir and the role of water uses downstream.
  - LC 2g. Work with Valley County and partners to implement strategies and practices from the Valley County Ground Water Quality Improvement and Drinking Water Source Protection Plan.

**WILDLIFE/WETLAND ZONE + NO WAKE**

**4,000 FT** →



**LC 3.** Keeping our shorelines free from runoff pollution.

- LC 3a. Implement improvements to existing zoning provisions, such as the requirement for an impact report to apply to properties around the lake and/or adopt an overlay zone adjacent to the Lake and its tributaries to implement BMPs (natural vegetative swales, prohibition excessive clearing, limiting fertilizers and water use by reducing areas of sod and identifying preferred plant species, on-site water retention, grassy swales without fertilizer, etc.). Review minimum lot requirements adjacent to waterways.
- LC 3b. Stabilize stream banks with bioengineering techniques without riprap, where possible.
- LC 3c. Work with the USFS and other adjacent landowners to identify solutions to and improve sustainability of roads and trails to decrease erosion and improve drainage, while maintaining access.
- LC 3d. Support BMP measures outlined in the Implementation Plan for the Cascade Reservoir Phase II Watershed Management Plan (IDEQ 2000).
- LC 3e. Work with the USFS and IDL on forest management within the wildland urban interface to protect water quality.

**LAKE CASCADE KEYSTONE INDICATORS**

Indicator	Baseline #	Desired Future Condition
User Satisfaction	75% surveyed rate overall experience as excellent	Maintain greater than 75% feeling of excellent experience
Incidents	113 warnings issued per year (across Valley County)	Maintain less than <100 warnings per year (across Valley County)
Feeling of extreme crowdedness	10% surveyed	<20% surveyed
Health Advisories Issued [1]	1 issued in 2022, 2021, 2020, 2019	No health advisories
Total Phosphorus	0.03-0.06 mg/L [1, 2, 3]	<0.025 mg/L [4]
Water Clarity (Secchi disk readings)	0 - 20.5 ft	> 6 ft
Dissolved Oxygen	<6 mg/L [4]	>6 mg/L [5]
Water Temperature	75°F max [4]	<22°C (71.6°F) max, <19°C (66°F) avg [5]
Carrying Capacity (Boats at one time)	161 (High)	368 (at 40 acres per boat)

[1] 2019 Monitoring Report for Cascade Reservoir and the North Fork Payette River (HUC 17050123) between Payette Lake and Cascade Reservoir

[2] IDEQ 2021 Lake Cascade Water Sampling results (Excel format)

[3] IDEQ 2021 North Fork Payette Update, NF Payette Monitoring Cascade Reservoir Monitoring Cyanobacteria and Big Payette Lake Monitoring for NFPR Watershed Summit presentation

[4] "Cascade Reservoir Watershed: Phase III Water Quality Management Plan and TMDL Five-Year Review" <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/11976>

[5] "Water Body Assessment Guidance 3rd Edition" <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14844>. Per the DEQ 1998 Phase II WMP - "dissolved oxygen in lakes and reservoirs (>6 mg/L at all times, except for the bottom 20% of water depth in lakes and reservoirs where depths are thirty-five (35) meters or less, and hypolimnion waters in stratified lakes and reservoirs)"



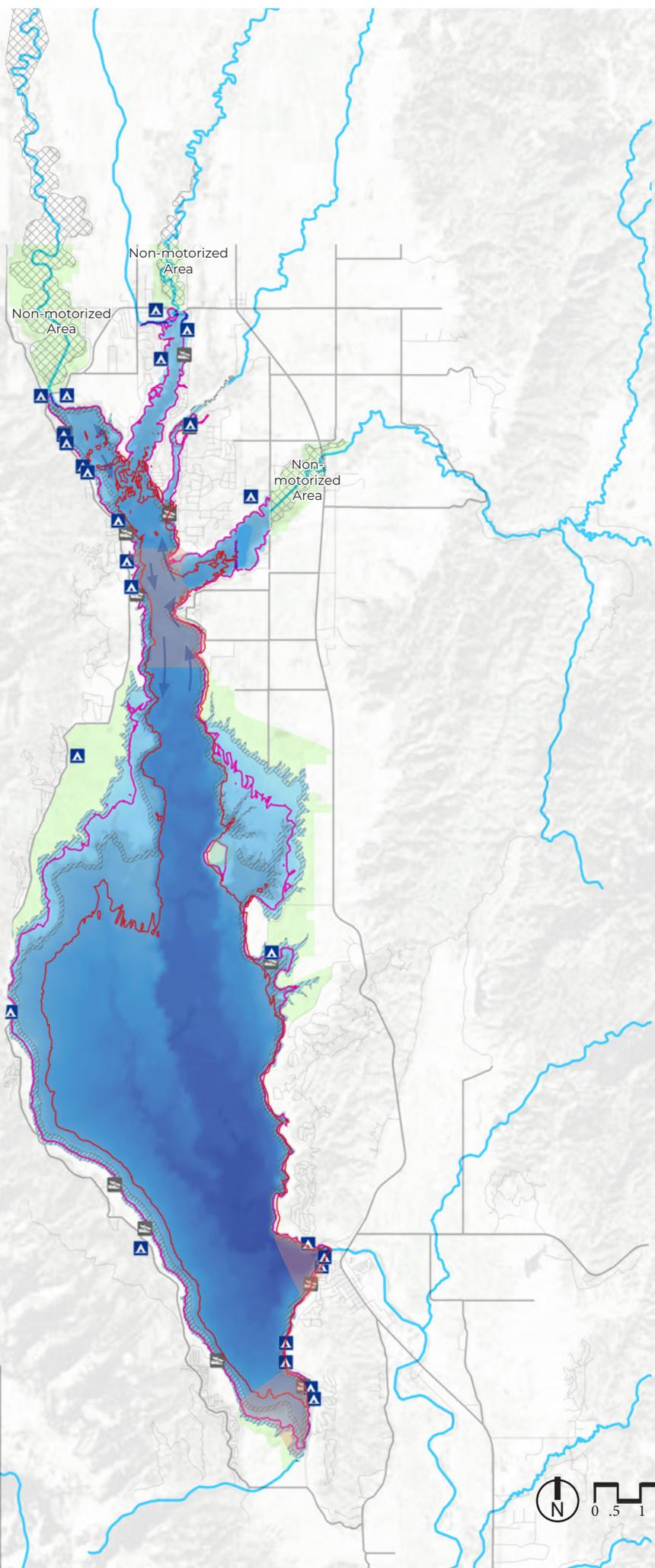
# LAKE CASCADE

## MANAGEMENT MAP

### Lake Cascade Strategies

-  Wildlife Management Areas
-  No Wake Zones\* (High and Low Pools)
-  10 ft Depth at Low Pool
-  10 ft Depth at High Pool
-  Direction of motorized travel priority area
-  High Impact Caution Area

\* Per Valley County Ordinance 20-11. Lake Cascade no wake zone varies as pool-elevation shifts. Idaho State Lake Section 67-7077 no wake rules apply within 100 ft of a dock, person, or structure, as well as the exclusion area.



# BIG PAYETTE LAKE VISION

## Desired Future Condition

Big Payette Lake is a significant recreational summer destination for Valley County tourism and a variety of activities while continuing to protect our headwaters.

## PRIORITY STRATEGIES

**BP 1.** Preventing user conflicts and protecting our headwaters ecosystem.

BP 1a. Implement a targeted expansion of no wake management areas and install buoys, as appropriate (potentially with cameras), to denote changes in use and management based on the following criteria:

- Shallow water 10 feet or less in depth
- Environmental/Wildlife areas extended to 500 feet
- River inlets extended to 500 feet
- High-traffic areas/marinas extended to 500 feet
- Urban shoreline/docks/houses to extended 500 feet (south of narrows and pilgrim cove)

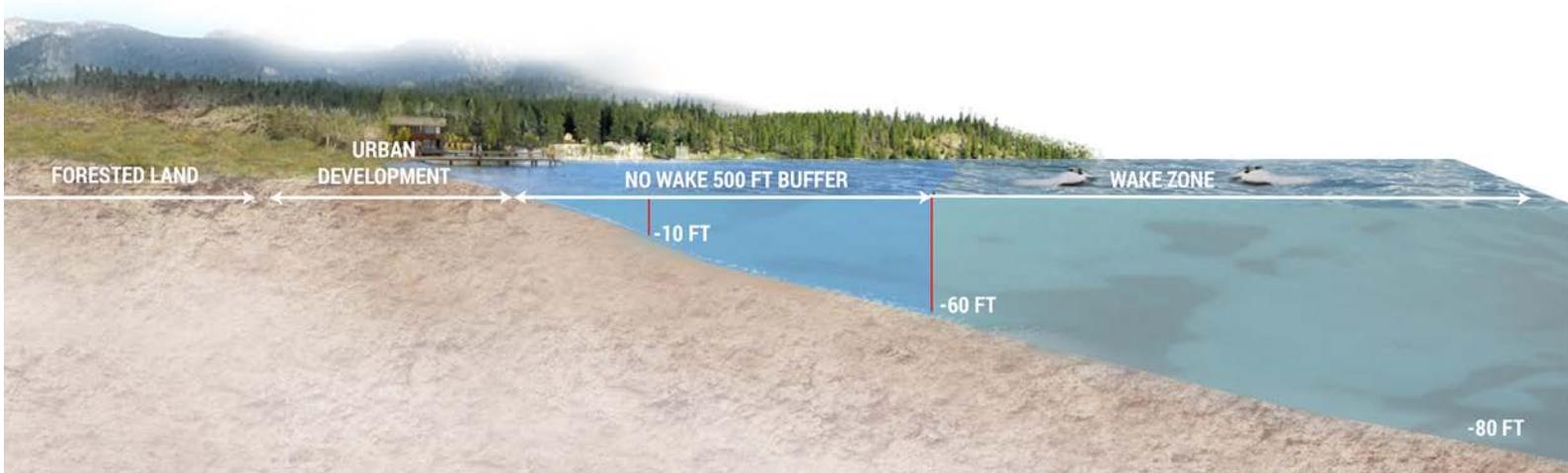
BP 1b. Provide robust user education through signage, mapping, interactive applications, rental company education, and social media/newsletter messaging.

- Create a map and brochure to send out with rental companies, concessionaires, and recreation agencies to share consistent standards (develop signage plan) regarding life jackets, whistles, and invasive species stickers.
- Publish Wakeboat Etiquette Tips and start a Ride the Core, Avoid the Shore program.

BP 1c. Educate the public about Idaho State Statutes Operation of Vessel Section 67-7077 considering no wake rules that apply within 100 feet of a dock, person, or structure, along with speed limits.

## Community Input on Waterway Concerns

- Recreation
  - Boat waves
  - Carrying capacity
  - Enforcement/education
- Environmental Resources
  - Erosion
  - Invasive aquatic species
  - Drinking water source
- Land Use
  - Residential impacts
  - Urban runoff
  - Infrastructure damage





Payette North Beach. Logan Simpson

# SPOTLIGHT ON: MANAGEMENT AREA CASE STUDIES

Indicators of reduced water quality, increased shoreline erosion, and dissatisfaction of public input show that the current County ordinance of 300 feet (as defined) should not be decreased. Demand for recreation, including more non-motorized vessels, is growing without dedicated space to safely recreate. To maintain safety and water quality, no wake management areas should be expanded. Targeted expansion in shallow waters, urban shoreline, and high impact areas are often where facilities (e.g., docks and marinas) are already located and require low speeds. Carrying capacity for all recreation users to safely enjoy the lake can still be maintained.

Technical summary of scientific data completed by Kootenai County established that wave action is tied to erosion potential, no wake zones of more than 500 feet are recommended, and boats operating at transition speeds generate the most damaging wake. Lake Tahoe has implemented a 600-foot no wake zone to minimize shoreline erosion, reduce impacts to gamefish spawning areas, improve light sources essential to submerged vegetation, and minimize noise impacts on visitors, residents, and wildlife.

This Plan recommends a targeted expanded no wake management area to protect the safety of all users and to reduce impacts to the shoreline.

- BP 2.** Managing Big Payette Lake’s natural setting area and high water-quality standard for drinking water.
- BP 2a. Designate parking and develop additional facilities (e.g., restrooms, kiosks, trash cans) to protect water quality in the headwaters and sensitive natural areas.
  - BP 2b. Work with IDPR and IDL on recreation management at the north end of the lake, in tandem with river management (see following section on North Fork of Payette River).
  - BP 2c. Work with Idaho Department of Water Resources (IDWR) and the Lake Reservoir Company to monitor and manage residential water intakes and dam releases to maintain water quality and temperature for the health of the lake and river.
  - BP 2d. Maintain an updated Water Master Plan and work with Valley County and partners to implement strategies and practices from the Valley County Ground Water Quality Improvement and Drinking Water Source Protection Plan.
  - BP 2e. Work with State agencies to assess the need and implementation opportunities for aquatic invasive species checks at specific boat ramp locations.
- BP 3.** Encouraging appropriate multiple use and keeping our waterways safe.
- BP 3a. Sign “Paddle Sport/Swim Priority Areas” to educate users about high use non-motorized areas where additional precautions should be met.
  - BP 3b. Develop concessionaire program to further define desired uses and capacity.
  - BP 3c. Maintain presence of law enforcement at docks and high-use areas during peak times with additional funding, volunteer rangers, and patrol hours.
  - BP 3d. Work with the City to assess launch fees and allocate funds for user safety education and future enforcement.
  - BP 3e. Identify new points of access to reduce social trails on public lands.

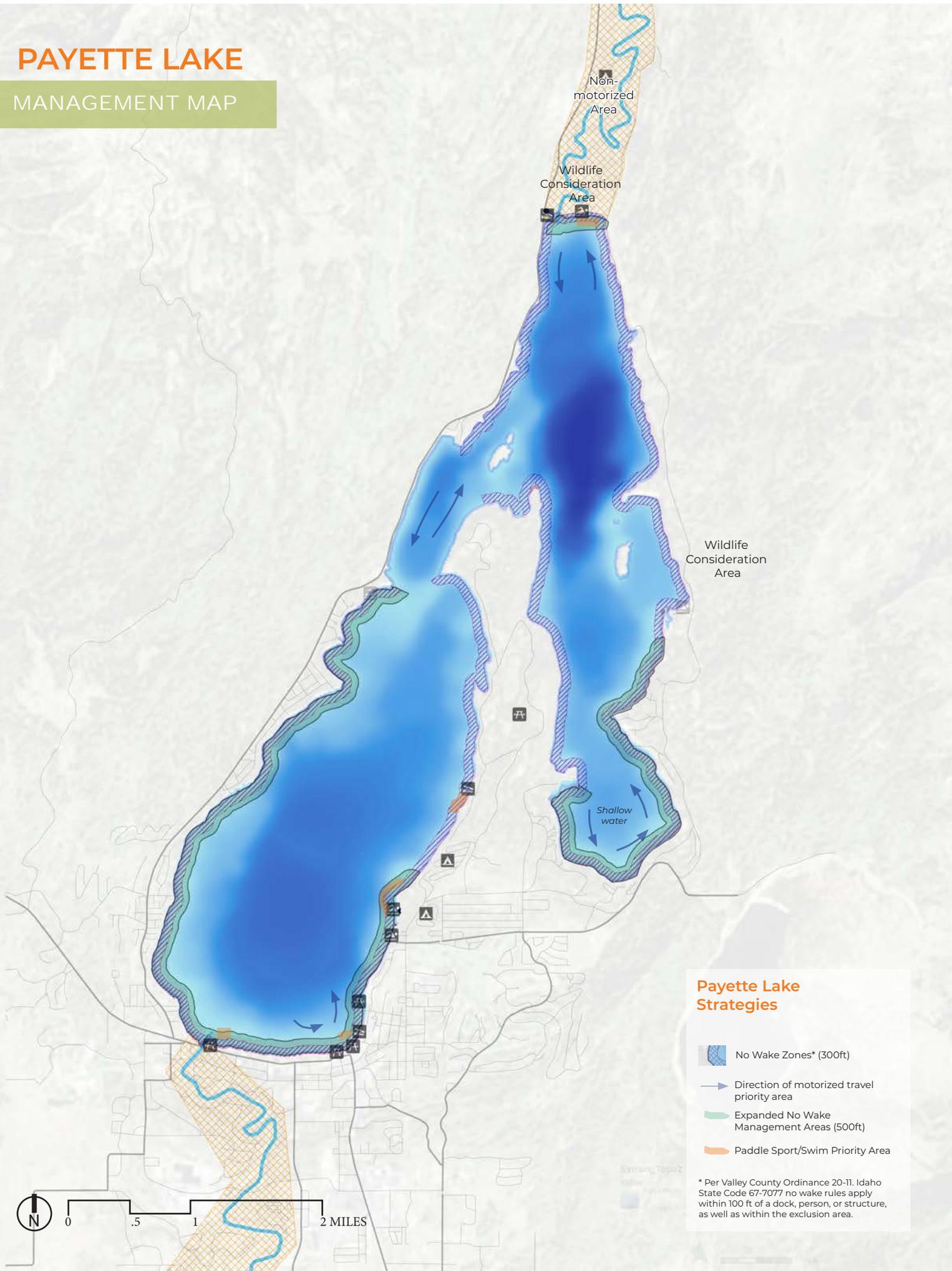


- BP 4.** Reducing impacts from land uses to preserve and protect the watershed and natural corridors that connect to the lake.
- BP 4a. Continue to monitor, review, and amend current land use regulations including the McCall Area Shoreline and River Environs Overlay Zone.
  - BP 4b. Continue to follow IDEQ guidance, adopt best practices, and monitor impacts from urban stormwater management and remaining septic systems adjacent to the lake.
  - BP 4c. Work with the USFS and IDL on forest management within the wildland urban interface to protect water quality.
  - BP 4d. Working with the various City departments, review code enforcement related to municipal water use and supply and adjacent land uses.
  - BP 4e. Complete wildlife/environmental analysis of islands to assess critical resources.



# PAYETTE LAKE

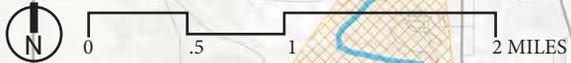
## MANAGEMENT MAP



### Payette Lake Strategies

- No Wake Zones\* (300ft)
- Direction of motorized travel priority area
- Expanded No Wake Management Areas (500ft)
- Paddle Sport/Swim Priority Area

\* Per Valley County Ordinance 20-11, Idaho State Code 67-7077 no wake rules apply within 100 ft of a dock, person, or structure, as well as within the exclusion area.



## BIG PAYETTE LAKE KEYSTONE INDICATORS

<i>Indicator</i>	<i>Baseline #</i>	<i>Desired Future Condition</i>
User Satisfaction	84% surveyed rate overall experience as excellent	Maintain greater than 75% feeling of excellent experience
Incidents	113 warnings issued per year (across Valley County)	Maintain less than <100 warnings per year (across Valley County)
Feeling of crowdedness	13% surveyed stated feeling extremely crowded	Maintain less than 30% feeling of extreme crowdedness
Dissolved Oxygen	>6 mg/L [1]	>6 mg/L (above 200 foot depth)
Total Phosphorus	.0047 - .0062 mg/L [2]	<0.006 mg/L[3]
Carrying Capacity	76 (High)	102 (at 40 acres per boat)
Acres of no wake	771	1,003 (based on expanding the no wake distances in targeted areas)
Length of shoreline in conserved public lands and available for public access	7 miles (27%)	Increase to greater than 35%

[1] "Cascade Reservoir Watershed: Phase III Water Quality Management Plan and TMDL Five-Year Review" <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/11976>

[2] Eutrophication potential of Payette Lake, Idaho <https://pubs.er.usgs.gov/publication/wri974145>

[3] Big Payette Lake Management Plan and Implementation, Big Payette Lake Water Quality Council, 1997



## WARM LAKE VISION

### *Desired Future Condition*

Warm Lake provides a minimally developed recreation experience in a natural forested environment.

## PRIORITY STRATEGIES

**WL 1.** Keeping a productive ecosystem to protect water quality, riparian areas, and nesting birds.

WL 1a. Implement and enforce targeted no wake zones in all areas with macrophyte vegetation areas (i.e., at 10 feet depth and within .025 mile of nesting bird areas).

WL 1b. Implement no wake zones 300 feet from the shoreline and maintain no wake hours before 11 AM and after 6 PM.

WL 1c. Implement and maintain no wake buoys to delineate no wake zones.

WL 1d. Implement and enforce directional travel for motorized vessels.

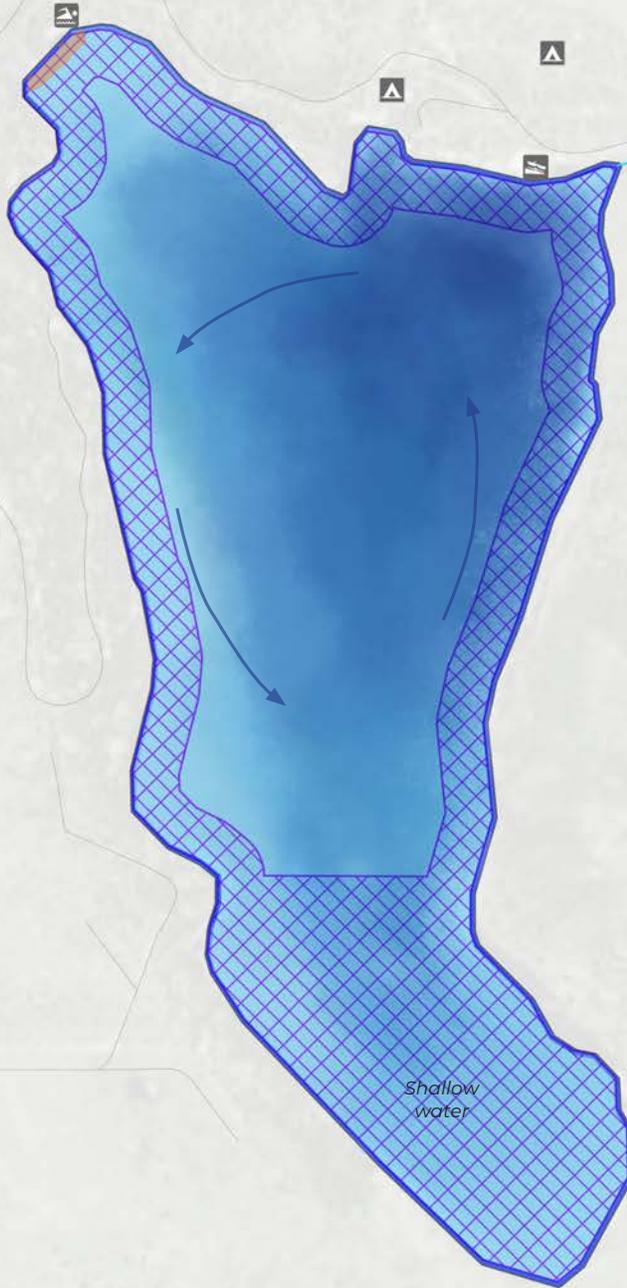
WL 1e. Provide robust user education through signage, mapping, interactive applications, and social media/newsletter messaging on unique management of Warm Lake.

## Community Input on Waterway Concerns

- Recreation
  - Recreation growth
  - Carrying capacity
- Environmental Resources
  - Invasive aquatic species
  - Erosion
- Land Use
  - Forest management
  - Rural road management

# WARM LAKE

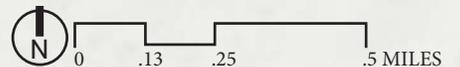
## MANAGEMENT MAP



### Warm Lake Strategies

-  No Wake Zones\* (300ft and vegetation area)
-  Direction of motorized travel priority area
-  Paddle Sport/Swim Area

- No wake rules apply:
- within 100 ft of a dock, person, or structure (Idaho State Lake Section 67-7077)
  - within 100 feet of anchored vessel, swim float, marked swimming area, person in water, person in a vessel engaged in fishing or any manually propelled vessel (Valley County Ordinance 20-11)
  - between 6pm and 11am (Valley County Ordinance 20-11)



- WL 1f. Identify baseline water-quality values for indicators such as dissolved oxygen, total phosphorous, water clarity, and water temperature.
- WL 1g. Create a friends group and work with Warm Lake Recreation & Sewer and IDEQ to implement a water quality program.
- WL 1h. Work with the USFS to assess launch fees and allocate funds to user safety education and future enforcement.

**WL 2.** Minimizing adjacent land-use impacts.

- WL 2a. Construct new vault toilets and ensure septic and waste management are working efficient (working with the USFS, concessionaires, and Warm Lake Associations of Cabin Owners).
- WL 2b. Define a Shoreline Trail between North Shore Lodge and Billy Rice Public Beach and complete repairs to trails around lake to reduce erosion.
- WL 2c. Prohibit camping anywhere along the shoreline of Warm Lake.

WARM LAKE KEYSTONE INDICATORS		
<i>Indicator</i>	<i>Baseline #</i>	<i>Desired Future Condition</i>
Carrying Capacity (Boats at one time)	52 (High)	64 (at 10 acres per boat)
Nitrogen	Future Testing Required	0.006 mg/L
Temperature	Future Testing Required	<22°C max, <19°C avg [1]

[1] "Water Body Assessment Guidance 3rd Edition" <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14844>





Chad Case

## NORTH FORK OF PAYETTE RIVER & TRIBUTARIES (ABOVE PAYETTE LAKE, BELOW PAYETTE, BELOW CASCADE) VISION

### *Desired Future Condition*

Providing different degrees of non-motorized use that responds to the natural environment.

### PRIORITY STRATEGIES

**NF 1.** Maintain high-quality user experiences and natural resources across all river segments.

NF 1a. Educate users on low-impact river recreation management (e.g., pack it in and out, leave no trace practices).

NF 1b. Complete specific river management plan for each river segment to maintain water quality and define appropriate recreation access points.

NF 1c. Work with land management agencies to clean up dispersed camping and work toward developing a designated dispersed camping system and/or more formalized campgrounds with amenities.

NF 1d. Continue to survey river uses for feeling of crowdedness and user satisfaction.

NF 1e. Stabilize stream banks with bioengineering techniques without riprap, where possible.

### Community Input on Waterway Concerns

- Recreation
  - Recreation growth
  - Carrying capacity
- Environmental Resources
  - Invasive aquatic species
  - Erosion
  - Loss of connectivity and stream function
- Land Use
  - Forest management
  - Rural road management



McCall Area Chamber

- NF 1f. Implement improvements to existing zoning provisions integrating BMPs (natural vegetative swales, prohibition excessive clearing, limiting fertilizers and water use by reducing areas of sod and identifying preferred plant species, on-site water retention, grassy swales without fertilizer, etc.) and review minimum lot requirements adjacent to rivers and streams.
- NF 1g. Work with landowners, developers, irrigators, land management agencies, and local working groups to identify and prioritize projects that restore stream connectivity and function, reduce nutrient loading, and improve temperature and flow conditions.
- NF 1h. Work with Central District Health to ensure septic systems are maintained and are not built adjacent to waterways.

**NF 2.** Work with IDPR and IDL to minimize natural resource impacts above Payette Lake by creating site-specific designs and an implementation plan.

- NF 2a. Define parking and access points along the river. Work to establish adequate, formalized user access trails and restore social trails that are no longer needed.
- NF 2b. Evaluate the need for parking permit and/or designated camping system. Limit parking to designated locations only.
- NF 2c. Provide vault toilets, refuse disposal, and signage for boaters at popular put-in locations, such as at North Beach (second needed), River's Bend, Fisherman's Point, and Twah access points.
- NF 2d. Work with land conservation coalitions and land managers to secure recreation easements or other public access of lands managed by IDL.

**NF 3.** Ensure water quality on the river below Payette Lake.

NF 3a. Develop and define new river access points to provide recreational experiences and maintain river vegetation.

NF 3b. Buffer from grazing uses.

NF 3c. Prohibit untreated sewage wastewater discharges into the river.

NF 3d. Evaluate a reasonable and feasible minimum stream flow in this reach (and others) and work with Water Resource Board to adopt the recommendations.

NF 3e. Work with IDFG and water users on maintaining water temperature to support the river fishery.

**NF 4.** Enhance and maintain access to a unique river experience below Lake Cascade to Smith’s Ferry.

NF 4a. Implement and enforce contained waste management for overnight rafting trips (USFS requirement to have contained waste and pack out).

NF 4b. Develop management to track users, educate users on impacts, and create accountability (e.g., information permit system).

NF 4c. Develop parking management plan for Cabarton river access and implement parking pass permit system.

NF 4d. Update Valley County Waterways Ordinance to reinforce non-motorized use below Lake Cascade and others as needed.

**KEYSTONE INDICATORS**

<i>Indicator</i>	<i>Baseline #</i>	<i>Desired Future Condition</i>
User Satisfaction	Future survey needed to determine surveyed rate overall experience as excellent	Maintain greater than 75% feeling of excellent experience
User numbers at Cabarton Bridge Launch	Future counts needed	TBD
Turbidity/Sediment	“Well below”	25 mg/L target and 50 mg/L monthly average
Water temperature (mean daily average as measured at Payette Lake Outflow)	62.1°F [1]	55°F [2]

[1] North Fork Payette River Water Quality Monitoring Report, IDEQ 2019

[2] North Fork Payette River Subbasin Assessment and Total Maximum Daily Load, July 2005, <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/11985>



Louie Lake. Jon Conti

## ALPINE LAKES VISION

### *Desired Future Condition*

Maintain the function of lake and stream ecosystems in high mountain lakes, especially within wild areas.

### Community Input on Waterway Concerns

- Increase in dispersed use
- Impacts from camping and fires
- Backcountry recreation management

## PRIORITY STRATEGIES

**AL 1.** Maintaining the pristine nature of alpine lakes.

- AL 1a. Work with the USFS to expand education on backcountry safety, know before you go, responsible outdoor recreation practices, and pack it in/pack it out ethics.
- AL 1b. Expand backcountry use education on Valley County trailhead and access points.
- AL 1c. Work with local communities to provide classes on backcountry recreation, education, wilderness first aid, etc.
- AL 1d. Work with the USFS to monitor backcountry campsites every five years for barren ground, human waste, soil compaction, presence of noxious weeds to maintain ecosystem function.
- AL 1e. If monitoring indicates a poor impact rating, work with the USFS to implement no camping within 200-feet of waterway or a designated dispersed camping area system.
- AL 1f. Explore a minimum area for motorized watercraft on smaller water bodies.

## KEYSTONE INDICATORS

<i>Indicator</i>	<i>Baseline #</i>	<i>Desired Future Condition</i>
User Satisfaction	Future data needed to determine surveyed rate overall experience as excellent	Maintain greater than 75% feeling of excellent experience
Overall Impact Rating (Ground Disturbance, Tree Damage, & Disturbed Area)	Collect baseline data	<4 [1]

*[1] USFS Wilderness Campsite Inventory Form & Rapid Assessment Campsite Condition Rating Guide, McCall and New Meadows District of the Payette National Forest.*



# CHAPTER 4: ADAPTIVE MANAGEMENT PLAN

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## A PLAN IN ACTION

This Chapter outlines how adaptive management, keystone indicators, strategies, and triggers are structured to improve Valley County’s waterways. The adaptive management program responds to increased use, development, and changing environmental conditions at an increasing rate. Chapter 3 emphasizes the waterways’ desired future condition and priority strategies for successful Plan implementation. Tying this Plan to the everyday responsibilities of agencies, partners, and decision-makers and connecting its strategies directly to County-wide and jurisdiction initiatives and policies will ensure a defined action plan. This tailored implementation and monitoring program meets not only the current needs for waterway management but responds to changing circumstances and future needs based on a series of keystone indicators and desired future condition targets.

Chapter 4 outlines:

- “What is an Adaptive Management Program?”
- “What should we do now, and what are our first initiatives?”
- “What should we do if the condition deteriorates?”
- “How do we monitor success and who is responsible for monitoring?”
- “How do we ensure the Plan is living and continues to adapt?”

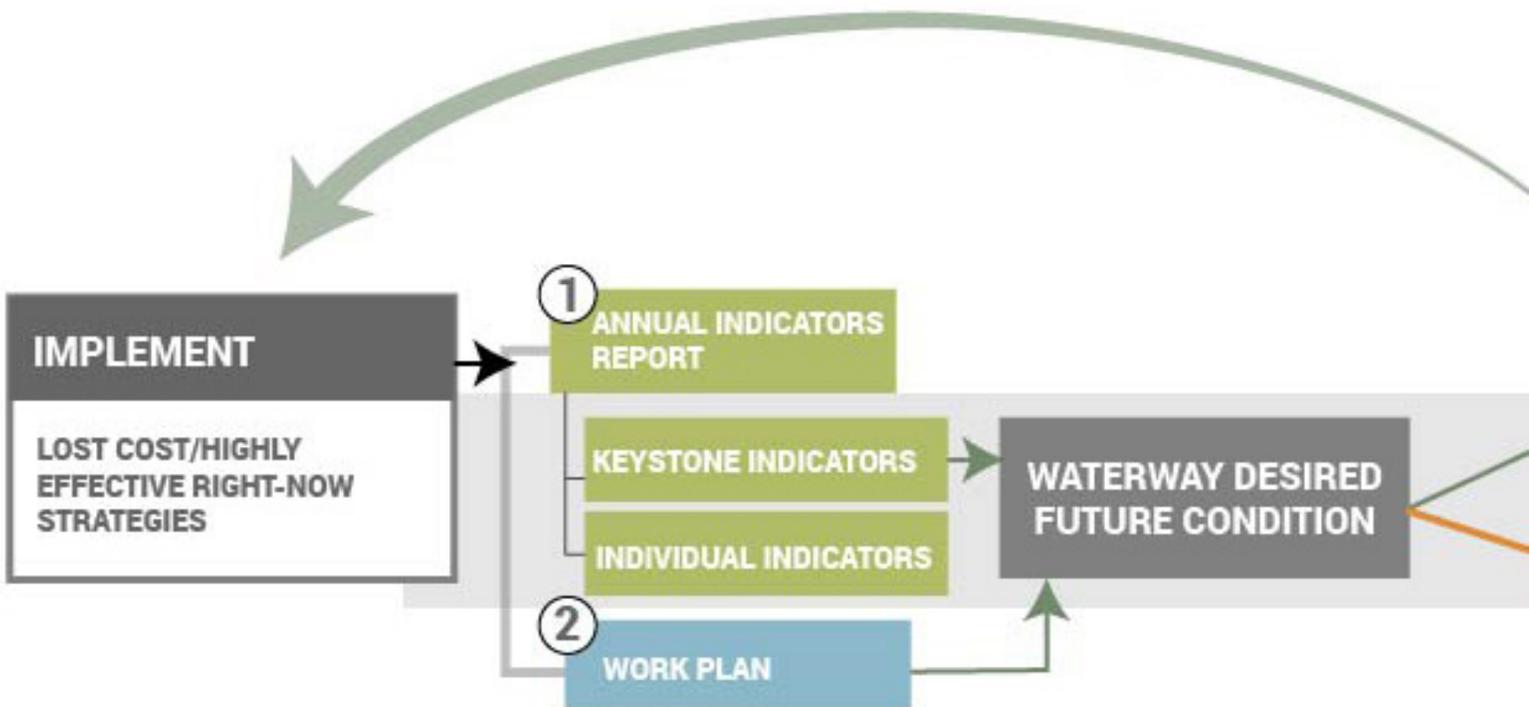
*There is not a silver bullet nor is it up to one entity to protect our water quality and provide for responsible recreation – meeting the vision of the Waterways Management Plan will require we all do our part.*

The adaptive management program is not a federal or state document but a community document that addresses land use, recreation, and the environment. Federal and state plans directly addressing water quality are already planned or in place. The Plan is oriented toward what Valley County and its cities can do, knowing that non-profit, state, and federal agencies also have ongoing efforts to protect our waterways. Future data collection, monitoring, and implementation of desired policy will be needed.

# ADAPTIVE MANAGEMENT PROGRAM

The Adaptive Management Program is a quantitative review structure that provides the measurability and accountability needed to ensure the community will achieve this Plan’s vision. The Adaptive Management Program allows the community to be adaptive, responsible, and decisive in optimizing the vision. The adaptive management program is supported by a quantitative review structure that provides the measurability and accountability needed to ensure the community will achieve the desired future condition. In other words, if sustainable land-use practices, recreation experience, and water quality are met, the Plan’s strategies can be very targeted. However, if conditions remain the same or are deteriorating, we need to be proactive and implement the communities’ defined strategies to ensure what we love remains the same or is better than we left it.

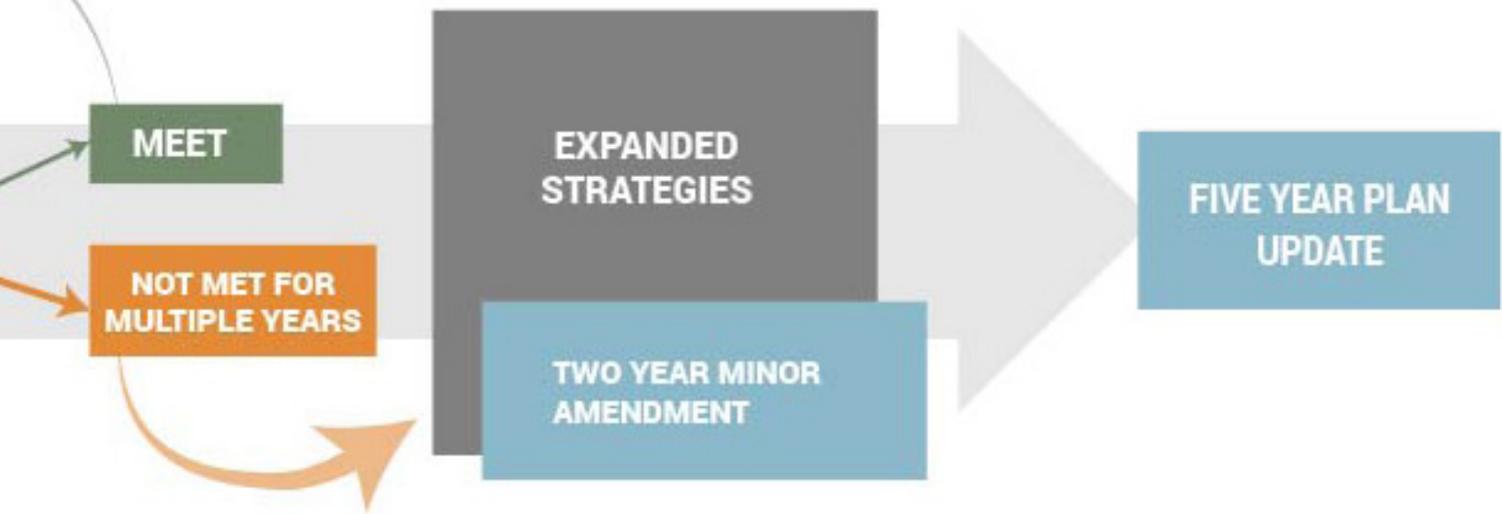
All keystone indicators in this report all currently being gathered primarily by IDEQ, Friends of Lake Cascade, IDFG, among others. These indicators were chosen based on the issues unique to each waterway and desired future conditions. They are efficient for County and City staff to report as they are accurate, reproducible, obtainable, and affordable. A brief annual indicator report will be placed on the County’s waterways website so the public can stay informed on the state of the waterways. Triggers and indicator feedback mechanisms provide a structure to continuously verify the community’s path and correct course when necessary, noting that it may be beneficial to use averages over two or three years before some strategies are implemented. Multiple strategies, tools, partnerships, and actions can lead to the desired change in the indicator baseline. While corrective strategies are identified, they may not be the only measures taken to meet the desired future condition. Partners should meet when a keystone indicator trigger is hit to determine a complete and practical approach forward.





The trend data in key indicators measures the success or failure of management actions and provides an “early warning system” for issues along our waterways. Therefore, management strategies must be adjusted to reverse negative trends approaching or exceeding a trigger (not meeting the desired future condition). A trigger is an endpoint, while trend data is a continuum that needs to be evaluated yearly. Progress will be gauged yearly and determined by whether there are significant differences in variables from the previous year’s data. As the Plan outlines, the County, Cities, the IDEQ, IDFG, and other agencies know that specific indicators and associated triggers are already exceeded. Therefore, immediate County- and City- initiated strategies that are listed in the 6th column in the following tables are recommended.

The following table outlines by waterway each keystone indicator, the agency that is currently collecting the data, current baseline conditions, and desired future conditions. If a keystone indicator has been triggered, immediate strategies should be considered. If the condition declines over two or three years or there is a goal to enhance the waterbody, additional strategies listed in the last column should be followed.



## ADAPTIVE MANAGEMENT AND ACTION PLAN

Indicator	Who is Collecting this Data?	Baseline	Desired Future Condition	Has this Indicator Been Triggered?	Immediate Strategies and Ease of Implementation	Not Meeting Desired Future Condition for 2-3 Years or Goal to Enhance
<i>Lake Cascade</i>						
User Satisfaction	County and City	75% surveyed rate overall experience as excellent	Maintain greater than 75% feeling of excellent experience	<b>No</b>	LC 1a, LC 1b, LC 1c, LC 1d	LC 1e
Incidents	County Sheriff	113 warnings issued per year (across Valley County)	Maintain less than <100 warnings per year (across Valley County)	<b>No</b>	LC 1a, LC 1c	LC 1d, LC 1d
Feeling of extreme crowdedness	County and City	10% surveyed	<20% surveyed	<b>No</b>	LC 1a, LC 1b	LC 1a, LC 1c, LC 1d
Health Advisories Issued	IDEQ, CDH	1 issued in 2022, 2021, 2020, 2019	No health advisories	<b>Yes</b>	LC 1b, LC 1g, LC 2d, LC 3a, LC 3d	LC 2a, LC 2b, LC2c, LC 2e, LC 3b, LC 3c
Total Phosphorus	IDEQ	0.03-0.06 mg/L	<0.025 mg/L	<b>Yes</b>	LC 1b, LC 2c, LC 2d, LC 2e, LC 3a, LC 3d	LC 2a, LC 2b, LC2c, LC 2e, LC 3b, LC 3c
Water Clarity (Secchi disk readings)	Friends of Lake Cascade	0 - 20.5 ft	> 6ft	<b>Yes</b>	LC 1b, LC 1g, LC 2d, LC 3a, LC 3d	LC 2a, LC 2b, LC 2c, LC 3b, LC 3c
Dissolved Oxygen	IDEQ	<6 mg/L	>6 mg/L	<b>Yes</b>	LC 1b, LC 1g, LC 2b, LC 2e, LC 3a, LC 3d	LC 1f, LC 2a, LC 2b, LC 2c, LC 3b, LC 3c
Water Temperature	IDEQ, Friends of Lake Cascade	75°F max	<22°C (71.6°F) max, <19°C (66°F) avg	<b>Yes</b>	LC 1b, LC 1g, LC 2c, LC 2d, LC 3a, LC 3d	LC 2a, LC 2b, LC 2c, LC 3b, LC 3c
Carrying Capacity (Boats at one time)	County and City	161 (High)	368 (at 40 acres per boat)	<b>No</b>		

## ADAPTIVE MANAGEMENT AND ACTION PLAN

Indicator	Who is Collecting this Data?	Baseline	Desired Future Condition	Has this Indicator Been Triggered?	Immediate Strategies and Ease of Implementation	Not Meeting Desired Future Condition for 2-3 Years or Goal to Enhance
<i>Big Payette Lake</i>						
User Satisfaction	County and City	84% surveyed rate overall experience as excellent	Maintain greater than 75% feeling of excellent experience	<b>No</b>	BP 1a, BP 1b, BP 2b, BP 3a	BP 3b, BP 3c, BP 3d
Incidents	County	113 warnings issued per year (across Valley County)	Maintain less than <100 warnings per year (across Valley County)	<b>No</b>	BP 1b, BP 1c, BP 3a	BP 3b, BP3c, BP 3d
Feeling of extreme crowdedness	County and City	13% surveyed stated feeling extremely crowded	Maintain less than 30% feeling of crowdedness	<b>No</b>	BP 1a, BP 1b	BP 3b, BP 3c, BP 3d
Dissolved Oxygen	IDEQ	>6 mg/L	>6 mg/L (above 200 foot depth)	<b>No</b>		BP 2c, BP 2d, BP 2e, BP 4a, BP 4b, BP 4c, BP 4d
Total Phosphorus	IDEQ	.0047 - .0062 mg/L	<0.006 mg/L	<b>No</b>		BP 2c, BP 2d, BP 4a, BP 4b, BP 4c, BP 4d
Carrying Capacity (Boats at one time)	County and City	76 (High)	102 (at 40 acres per boat)	<b>No</b>		BP 3b, BP 3c, BP 3d
Acres of No wake Areas	County and City	771	1,003 (based on expanding the no wake distances in targeted areas)	<b>No</b>	BP 1a	NA
Length of Shoreline in Conserved Public Lands and Available for Public Access	City	7 miles (27%)	Increase to greater than 35%	<b>Yes</b>	BP 2a, BP 2b	BP 3d, BP 1e, BP 4e

## ADAPTIVE MANAGEMENT AND ACTION PLAN

Indicator	Who is Collecting this Data?	Baseline	Desired Future Condition	Has this Indicator Been Triggered?	Immediate Strategies and Ease of Implementation	Not Meeting Desired Future Condition for 2-3 Years or Goal to Enhance
<i>Warm Lake</i>						
Carrying Capacity (Boats at one time)	County and City	52 (High)	64 (at 10 acres per boat)	<b>No</b>	WL 1d, WL 1e, WL 1f	WL 1g, WF 1h
Nitrogen	TBD	Future Testing Required	0.006 mg/L	<b>TBD</b>	WL 1a, WL 1b, WL 1c, WL 1f, WL 1g	WL 2a, WL 2b, WL 2c
Temperature	TBD	Future Testing Required	<22°C max, <19°C avg	<b>TBD</b>	WL 1f	

## ADAPTIVE MANAGEMENT AND ACTION PLAN

Indicator	Who is Collecting this Data?	Baseline	Desired Future Condition	Has this Indicator Been Triggered?	Immediate Strategies and Ease of Implementation	Not Meeting Desired Future Condition for 2-3 Years or Goal to Enhance
<i>North Fork of Payette River &amp; Tributaries (Above Payette Lake, Between Payette and Cascade and Below Cascade)</i>						
User Satisfaction	County and City	Future survey needed to determine surveyed rate overall experience as excellent	Maintain greater than 75% feeling of excellent experience	<b>No</b>	NF 1a, NF 1b, NF 1c, NF 1d, NF 1f, NF 2a, NF 2b, NF 2c, NF 4d	NF 2d, NF 3a
User Numbers at Cabarton Bridge Launch	County	Future counts needed	TBD	<b>TBD</b>	NF 1a, NF 1b, NF 1c, NF 1d, NF 2a, NF 2b, NF 2c, NF 4c	
Turbidity/Sediment	IDFG	"Well below"	25 mg/L target and 50 mg/L monthly average	<b>No</b>	NF 3d, NF 1e, NF 3e, NF 4a, NF 4b, NF 4d	NF 3b, NF 3c
Average Water Temperature (as measured at Payette Lake Outflow)	IDFG	61.2°F	55°F	<b>No</b>	NF 3d, NF 1e, NF 3e, NF 4a, NF 4b, NF 4d	NF 3b, NF 3c



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### ADAPTIVE MANAGEMENT AND ACTION PLAN

Indicator	Who is Collecting this Data?	Baseline	Desired Future Condition	Has this Indicator Been Triggered?	Immediate Strategies and Ease of Implementation	Not Meeting Desired Future Condition for 2-3 Years or Goal to Enhance
<i>Alpine Lakes</i>						
User Satisfaction	McCall Master Naturalists and USFS	Future survey needed to determine surveyed rate overall experience as excellent	Maintain greater than 75% feeling of excellent experience	<b>No</b>	AL 1a, AL 1b, AL 1c, AL 1d	AL 1e
Overall Impact Rating (Ground Disturbance, Tree Damage, & Disturbed Areas)	McCall Master Naturalists and USFS	Collect baseline data	<4	<b>No</b>	AL 1a, AL 1b, AL 1c, AL 1d	AL 1e



## PLAN IMPLEMENTATION

This Plan is consistent with what the National Academy of Sciences outlines as Adaptive Management. However, it is a County-based plan recognizing the connection between community, land use, recreation, and our natural environment.

### ANNUAL INDICATOR REPORT, WORK PLANS, AND MONITORING WEBSITE

A brief annual indicator report will be produced consisting of keystone and supplemental individual indicators. Alternatively, a dashboard could be set up on the website, providing quick access to information and links to other online data. Annual indicator reports should be designed to evaluate the community's progress toward achieving the vision. These annual snapshots should be summarized and presented to other technical working groups and forums. Other agencies may also be prepared to give their annual reports, progress, and data at this time. Through these yearly indicator reports, the community will understand how we are measuring up and will have the information needed to proactively input into annual work plans.

A yearly work plan for implementing the Plan as part of the budget process would complement the annual indicator report. In setting the work plan, the community should evaluate the work completed over the past year, review annual indicators, and prioritize strategies for implementation. The work plan may also include the implementation of preemptive strategies before triggering a strategy, plan amendment, or plan update. As strategies are completed and/or new best practices, technology, and information become available, the work plan may include strategies that are not listed. However, every task in the work plan should be relevant to the Plan's Vision, implementable by the responsible party and effective in addressing the focus areas and community input on waterway concerns.



## A LIVING PLAN AND UPDATE CYCLE

This Plan will be living, allowing it to adapt to changes. Annual monitoring enables the ability to react quickly. If keystone indicators in the Plan are triggered for multiple years, minor updates to the Plan should occur **every two years**. Once minor amendments are initiated, the staff, Technical Advisory Group (TAG), Boards, and Commissions will go through targeted amendments. While additional or more stringent strategies may not be the most desired outcome, they may be necessary for progress toward the desired result. This update will allow the addition of current data, removal of additional key indicators and strategies, and the incorporation of completed plans and strategies.

Plan amendments, if necessary, should occur with the annual indicator report. Consideration could occur at the same yearly meetings where the annual indicator report is reviewed and the implementation work plan for the following year is set. This promotes a simultaneous and comprehensive review of proposed amendments, indicators, strategies, and the work plan to adapt to the current conditions. Concurrent reviews encourage adaptation to changing conditions while discouraging overreaction to opportunities that do not adequately address specific issues. New and/or strengthened strategies with the County and City and agencies like the IDEQ may need to be established. If land use, recreation, or water quality conditions deteriorate, strategies are not implemented, regulations are not being followed, and/or if BMPs are determined to be ineffective; then the County, Cities, and agencies will work with their partners to ensure corrective steps are taken. During these periods, additional monitoring and special studies in response to specific needs may be identified.

If no annual indicators are triggered, the Plan should be updated at **least every five years**. A more extensive public process should ensure the Plan always meets the County's vision. An update should occur even if a keystone indicator was not triggered and we are meeting our targets. Regular, informed, and focused updates to the Plan will allow the community to affirm its values and identify new implementation strategies. The five-year update should be a community effort built on the lessons learned through 5 years of annual indicator reports.



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## PARTNERSHIPS

As part of a living and adaptable plan, annual conversations with the County, McCall, Cascade, and Donnelly communities should continue during indicator reviews, minor amendments, and plan updates. This engagement fosters more effective outcomes and enhances support for those outcomes. Part of the annual monitoring and implementation of the Plan will be consistent outreach on the community's values and implementation priorities.

The community's ability to achieve this Plan's priorities is intertwined with the ability to cooperate and communicate with non-profit, local, state, and federal agencies. The County and Cities will continue coordinating with nearby land managers to implement this Plan's framework, identify shared interests and available resources, and address issues affecting the entire ecosystem.

### *Roles and Responsibilities*

- The County and City planning and parks staff are responsible for producing annual indicator reports, conducting surveys, executing yearly work plans, making minor amendments, and updating the Plan.
- The TAG and partners are responsible for providing indicators data and working towards implementation actions. They are also conducting complimentary studies and initiatives supporting the same objectives.
- The community is responsible for living harmoniously with the natural setting and following rules and regulations put in place to protect our waterways for generations to come. The local and visiting communities are also instrumental in reaching out to those who live and use the waterways.

## FUNDING

Maintaining high water quality and attractive recreation amenities will result in greater recreational demand and an increase in the amount of local and visitor use, which may necessitate the implementation of additional funding sources. A multi-layered approach to funding will be necessary, including:

- Actions with high benefits at little cost
- Working with watershed partners and landowners
- Parking and launch user fees
- County-wide recreation permit
- Recreation districts
- General funds
- Park and open space impact fees
- Concessionaires
- Grants
- Donations

Fees are often prorated based on resident vs. visitor, income, location, and other factors. Having this additional funding that can be used for enforcement and planning staffing will help support the community's goals and create high-quality and safe waterways. The lack of funding commitments has been the most significant obstacle to making progress with implementing many other waterway plans. The resources required to implement these strategies should be considered, along with the parties responsible for implementing the strategy, the timeframe for implementing the strategy, and the effectiveness of each strategy.



# REFERENCES

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