



Icicle Strategy

Guiding Principles Review – Implementation Status

Icicle Workgroup

January 13, 2022

Overview

- Guiding Principles Discussion
- Icicle Strategy Water Ledger Status





Guiding Principles Discussion

Guiding Principles Metrics

Guiding Principle	Metric	
Improve Instream Flows	Icicle Creek Historic Channel: <ul style="list-style-type: none"> • 60 cfs minimum flows (drought years) • 100 cfs minimum flows (non-drought years), short-term goal • 250 cfs minimum flows (non-drought years), long-term goal • 2,600 cfs maximum flow to preserve habitat function 	Flow improvement needed (in projects) to meet total minimum flows: 40 cfs ¹
Improve sustainability of LNFH	<ul style="list-style-type: none"> • Meet <i>U.S. v. Oregon</i> and other agreements specifying fish production requirements • 57 cfs supply protected long-term (at least 20 cfs conservation goal) • Diverse source availability (temperature, pathogen-free) to maximize fish health • Structures minimize unintended fish passage impediments 	
Protect Tribal and Non-Tribal harvest	<ul style="list-style-type: none"> • Catch per unit of effort (CPUE) improved • Maintain multi-species harvest opportunities • Tribal Impacts Assessment and Adaptive Management Plan being implemented, addressing attraction flows, sediment transport, fish migration/straying, site access and amenities 	
Improve Domestic Supply	<ul style="list-style-type: none"> • 1,750 acre-feet of reliable year-round supply (2.5 cfs average, 5 cfs peak) 	
Improve Agricultural Reliability	<ul style="list-style-type: none"> • Automate / Optimize Alpine Lakes Reservoirs for improved reliability (plus instream flow benefit) • Restore/repair Eightmile Lake Reservoir up to 2,500 acre-feet (1,125 ac-ft additional instream flow/domestic benefit) • Current interruptible agricultural users have firm supply in average water years / agriculture water bank (2 to 4 cfs) 	
Enhance Icicle Creek Habitat	<ul style="list-style-type: none"> • Improve passage in Icicle Creek including to Upper Icicle Creek • Make investments in physical habitat improvement with consideration for high flow habitat and low flow refuge, minimize fish passage impediments, and improve limiting factor spawning/rearing • Offset project-related terrestrial impacts with land acquisition/easements 	
Comply with State and Federal Law, and Wilderness Acts	<ul style="list-style-type: none"> • Identify and engage regulators in the process • Environmental review completed (project check) • All projects appropriately permissible (project check) • All diversions (LNFH, IPID, COIC) appropriately screened (project check) 	

Instream Flow Guiding Principle

Guiding Principle	Metric	
Improve Instream Flows	Icicle Creek Historic Channel: <ul style="list-style-type: none">• 60 cfs minimum flows (drought years)• 100 cfs minimum flows (non-drought years), short-term goal• 250 cfs minimum flows (non-drought years), long-term goal• 2,600 cfs maximum flow to preserve habitat function	Flow improvement needed (in projects) to meet total minimum flows: 40 cfs ¹

- Flow targets developed by Instream Flow Subcommittee
- 5 Reaches defined, all could benefit from restoration
- Reach 4 (Historic Channel) defined as critical reach for flow improvement

QUESTION:

Instream flow targets apply to Historic Channel. Comments in recent meetings have indicated interest in instream flow benefits further downstream. What do members recall about focusing this G.P. on the hatchery reach?

¹Based on a review of historic stream gage records, the existing average low flow in historic channel in non-drought years is 65 cfs (16 of the most recent 20 years) and average drought low flows is 20 cfs (2001, 2003, 2005, 2015). To meet Guiding Principle flow targets, approximately 40 cfs in project flow benefit is needed.

Leavenworth National Fish Hatchery Guiding Principle

Improve
sustainability
of LNFH

- Meet *U.S. v. Oregon* and other agreements specifying fish production requirements
- 57 cfs supply protected long-term (at least 20 cfs conservation goal)
- Diverse source availability (temperature, pathogen-free) to maximize fish health
- Structures minimize unintended fish passage impediments

QUESTIONS:

1. What does this Guiding Principle mean to IWG members?
2. Has anything changed in our ability to meet this Guiding Principle?

Tribal and Non-Tribal Fishery

Protect Tribal and Non-Tribal harvest

- Catch per unit of effort (CPUE) improved
- Maintain multi-species harvest opportunities
- Tribal Impacts Assessment and Adaptive Management Plan being implemented, addressing attraction flows, sediment transport, fish migration/straying, site access and amenities

QUESTIONS:

1. What does this Guiding Principle mean to IWG members?
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Municipal/Domestic Supply Guiding Principle

Improve Domestic Supply

- 1,750 acre-feet of reliable year-round supply (2.5 cfs average, 5 cfs peak)

- Quantities derived from:
 - 800 afy to the City to settle Leavenworth v. Ecology lawsuit
 - 950 afy to the County for rural growth

QUESTION:

1. Has anything changed that would change the quantities in this Guiding Principle?
2. Are IWG members clear on where these quantities will come from?

Agricultural Reliability Guiding Principle

Improve Agricultural Reliability	<ul style="list-style-type: none">• Automate / Optimize Alpine Lakes Reservoirs for improved reliability (plus instream flow benefit)• Restore/repair Eightmile Lake Reservoir up to 2,500 acre-feet (1,125 ac-ft additional instream flow/domestic benefit)• Current interruptible agricultural users have firm supply in average water years / agriculture water bank (2 to 4 cfs)
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- IPID's goal in participating was largely around restoring / improving O&M around existing lakes based on public dollars in exchange for using some of their senior rights to meet instream flow and domestic Guiding Principles

QUESTIONS:

1. What does this Guiding Principle mean to IWG members?
2. Has anything changed in our ability to meet this Guiding Principle?

Aquatic and Terrestrial Habitat Guiding Principle

Enhance Icicle Creek Habitat	<ul style="list-style-type: none">• Improve passage in Icicle Creek including to Upper Icicle Creek• Make investments in physical habitat improvement with consideration for high flow habitat and low flow refuge, minimize fish passage impediments, and improve limiting factor spawning/rearing• Offset project-related terrestrial impacts with land acquisition/easements
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QUESTIONS:

1. What does this Guiding Principle mean to IWG members?
2. Has anything changed in our ability to meet this Guiding Principle?

Regulatory Compliance Guiding Principle

Comply with State and Federal Law, and Wilderness Acts

- Identify and engage regulators in the process
- Environmental review completed (project check)
- All projects appropriately permittable (project check)
- All diversions (LNFH, IPID, COIC) appropriately screened (project check)

QUESTIONS:

1. What does this Guiding Principle mean to IWG members?
2. Has anything changed in our ability to meet this Guiding Principle?



Icicle Strategy Water Ledger

Icicle Strategy “Water” Projects Currently Advancing

Project	Instream Flow Benefit (cfs)	Municipal / Domestic Benefit (cfs)
IPID Irrigation Efficiencies	10	
COIC	11.9	
LNFH	20	
Municipal Conservation		0.5 ¹
Peshastin Pump Exchange	~26-46	
Alpine Lakes Automation	30	
Eightmile Lake Storage Restoration	Up to 10.6	Up to 2.0
Instream Flow Rule Amendment		0.4 ²
TOTALS	108 – 128 cfs	2.5 cfs

¹ Extends existing supply (not new supply)

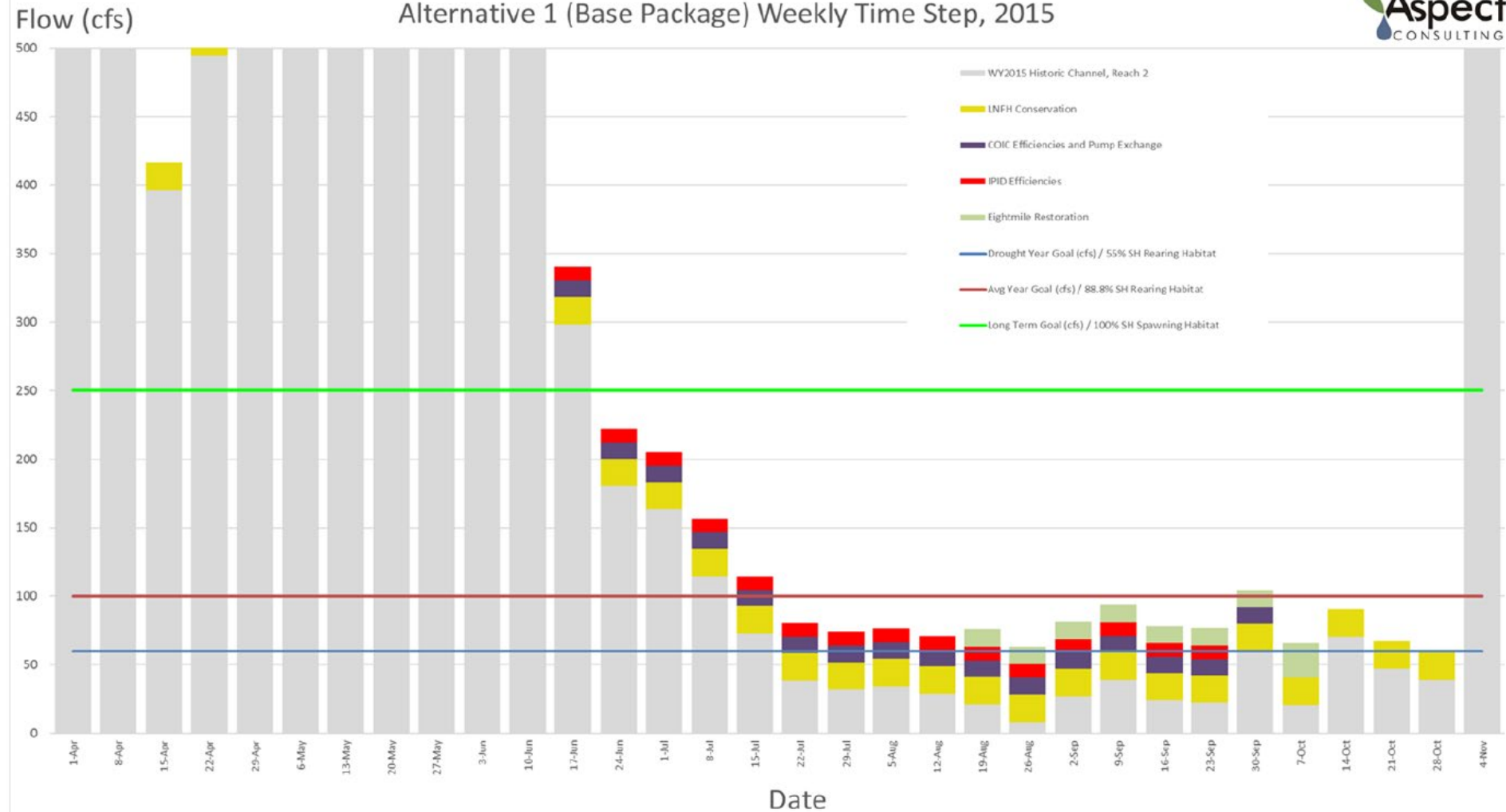
² Not included in total. Shown here because rule amendment needed to allow for rural residential wells to support municipal/domestic GP.

Instream Flow Benefit Summary

Project	Flow (cfs)	Historic Channel?	Other Reaches?
IPID	10	Yes	Yes
COIC	11.9	Yes	Yes >3.9 cfs
LNFH	20	Yes	No
Automation	30	Yes	Yes
Eightmile	10.6	Yes	Yes
Peshastin Pump Exchange	~26-46	Yes	Yes

Project Suite Exceeds Instream Flow Metric (some room for project modifications)

Alternative 1 (Base Package) Weekly Time Step, 2015





Questions?