LRE WATER

GRAND COUNTY
STREAM MANAGEMENT PLAN
LEARNING BY DOING

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ENGINEERING COMPANY

GRAND COUNTY
LEARNING BY DOING
STREAM MANAGEMENT PLAN UPDATE
Stream Reach Grading and Prioritization
November 5th, 2025

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ROCKY MOUNTAIN | MIDWEST | SOUTHWEST | TEXAS

AGENDA

- Framework Structure Review
- Grading and Weighting Updates based on SHAC feedback
- GCWIN Database Platform Preview
- GC SMP: Purpose and Theme Development

FRAMEWORK STRUCTURE

WATERSHED

RIVERSCAPE

CHANNEL

Stream Health Assessment Variables and Metrics

Category	Variable	Subvariable	Metric
Watershed	Flow Regime	Flushing flows	Peak Flows
		Base flows	Winter Base Flows
			Summer Base Flows
	Sediment Regime	Watershed Supply	Land Development Index
			Wildfire Burned Areas
		Local	Local Supply
		Continuity & Transport	Dams
			Diversion Structures
	Water Quality	Nutrients	Total Nitrogen
			Total Phosphorus
		Physical	pH
			Dissolved Oxygen
		Metals	Total Iron
	Temperature	Temperature	Chronic (Weekly Average)
			Acute (Daily Max)
Riverscape	Riparian	Riparian	Riparian Condition
			Floodplain Fragmentation
			Floodplain Confinement
Channel	Geomorph	River Dynamics	Planform Dynamics
			Profile Dynamics
	Aquatic Ecosystems	Habitat	Microinvertebrate Habitat
			Trout Spawning
		Macroinvertebrates	Macroinvertebrates
		Fish Communities	Fish

GRADING CRITERIA AND NARRATIVE MODIFICATIONS

Grand County Stream Health Assessment Rating Framework						
Grade	**Category**	**Grand County Description**	**Function Level**	**Level of Alteration**	**Level of Impairment**	**Management Needs**
A	Optimal	Stream represented **pristine condition**, is **self-sustaining**, with **no human influence**; supports all natural functions and biota.	Reference Standard	None	Self-sustaining	No active management needed; protection-focused only.
B	Highly Functional	Stream shows **minor stressor influence** but maintains high function and resilience.	High	Negligible	Not impaired	Limited management, monitoring, and protection.
C	Mostly Functional	Core functions are mostly present but **impacted by mild stressors**; **requires regular management** to retain function.	Fair	Mild	Mild	Active management needed to sustain or improve function.
D	Partly Functional	Moderately altered; **notable degradation of function** and structure; **management required**.	Poor	Moderate	Substantial	Ongoing management and restoration required.
F	Dysfunctional	Profoundly impaired; **fails to support basic ecological function**; unsuitable for aquatic life.	Non-Functional	Severe	Profound	Restoration likely required and/or may be extremely challenging or infeasible.
N/A	Not Scored	Insufficient data or method unavailable to assess.	Not Applicable	Not Applicable	Not Applicable	Further study needed to determine condition.

REACH GRADE UPDATE AND SUMMARY

- Applied Weighting based on Stakeholder input for Final Reach Grades

5	2	2	3	3	5	4
Flow Regime	Sediment	Water Quality	Temperature	Riparian	Geomorphology	Aquatic Ecosystem

- Refined grading criteria for several metrics to better differentiate high grades (A-C)
- Incorporated additional reach data
- Finalized geomorphology assessment

Modifications from Draft Grades:
* - Additional Data/Grade
▼ ▲ - Grade Revision/Refinement

Stream Reach Variable Grades

Subwatershed	Reach ID	Reach Grade	Flow Regime	Sediment	Water Quality	Temperature	Riparian	Geomorphology	Aquatic Ecosystem
Colorado River Headwaters	C-AC	B		C▼	B▼	B	A	A	
Colorado River Headwaters	C-EI	A	A*	A	A	A	A▲	A▲	C▼
Colorado River Headwaters	C-NI	B		A	A	A	C	C▼	
Colorado River Headwaters	C-RF	A	A*	A	A	A	B	A	
Colorado River Headwaters	C-ST	C		C▼	C		C	B▼	
Colorado River Headwaters	CR1	B		B▼	A	C	B	B▼	C▼
Colorado River Upper	C-CH	C		C▼	C		C▼	C▼	
Colorado River Upper	CR2	B		C▼	A	A*	B▼	A	F
Colorado River Upper	CR3	C	F	D▼	B▼	B	B	C	C▼
Colorado River Upper	WC2	C	C	D▼	B	F	B	B	C
Colorado River Mid	CR4	C	D	C	B	A	C	B▼	B
Colorado River Lower	C-RE	B		C▼		B	C	A	B▼
Colorado River Lower	CR5	B	C	D▼		A	B	C▼	B
Colorado River Lower	CR6	C	C	C	B	D	B	A▲	D▼
Colorado River Lower	W-SWF	A	A*	A	A		B	A	
Colorado River Lower	WF-1	A		B▼	A		A	A	
Colorado River Lower	WF-2	B		B	A	D	B	A▲	C▼
Colorado River Lower	WF-3	B	C▼	B	B▼		B	A	B
Fraser River Upper	F-LCV	A		B▼		A	B	A	
Fraser River Upper	F-VC1	A		A	A		B	A	
Fraser River Upper	F-VC2	B	C▼	B▼	A	A	C	C	C▼
Fraser River Upper	F1	B		A	A	A	B	B▼	B
Fraser River Upper	F2	B		B▼	A	A	C	D	B
Fraser River Upper	F3	B	B▼	B▼	A	A	B	B▼	B
Fraser River Mid	F-EC	B		B▼		A	B	B	
Fraser River Mid	F-STL1	A	B	A		A	B	A	
Fraser River Mid	F-STL2	B		B▼		D	B	B	B
Fraser River Mid	F4	C		C▼	B	A	C	D	C▼
Fraser River Mid	F5	C		B▼		A	C	D	
Fraser River Mid	F6	B	C	B▼	B	A	B	A▲	B
Fraser River Lower	F-CB	B		B		D	B	A	
Fraser River Lower	F-CC	B		C▼	B		B	B	
Fraser River Lower	F-HC	B		B		A	C	C▼	
Fraser River Lower	F-LCB	B		B		A	B	B▼	
Fraser River Lower	F-MC	B		B		F	B	A▲	
Fraser River Lower	F-PC	B		B			B	A▲	
Fraser River Lower	F-RC1	B	C*	B	A	A	B	B	B▼
Fraser River Lower	F-RC2	B	C	B	A	F	B	A	B
Fraser River Lower	F7	B		C▼	B	A	B	B▼	B
Fraser River Lower	F8	B	C*	B		A	B	B▼	C▼
Fraser River Lower	F9	B		C▼	B	C	B	B▼	B
Fraser River Lower	F10	C	C*	B	B	F	B	B▼	B

FLOW REGIME

Category	Variable	Subvariable	Metric
Watershed	Flow Regime	Flushing flows	Peak Flows
		Base flows	Winter Base Flows
			Summer Base Flows

Grading Updates & Refinements:

- Identified natural hydrology reaches (A Grade)
- Summer Base Flows weighted higher
- Additional Reaches with Flow Data included

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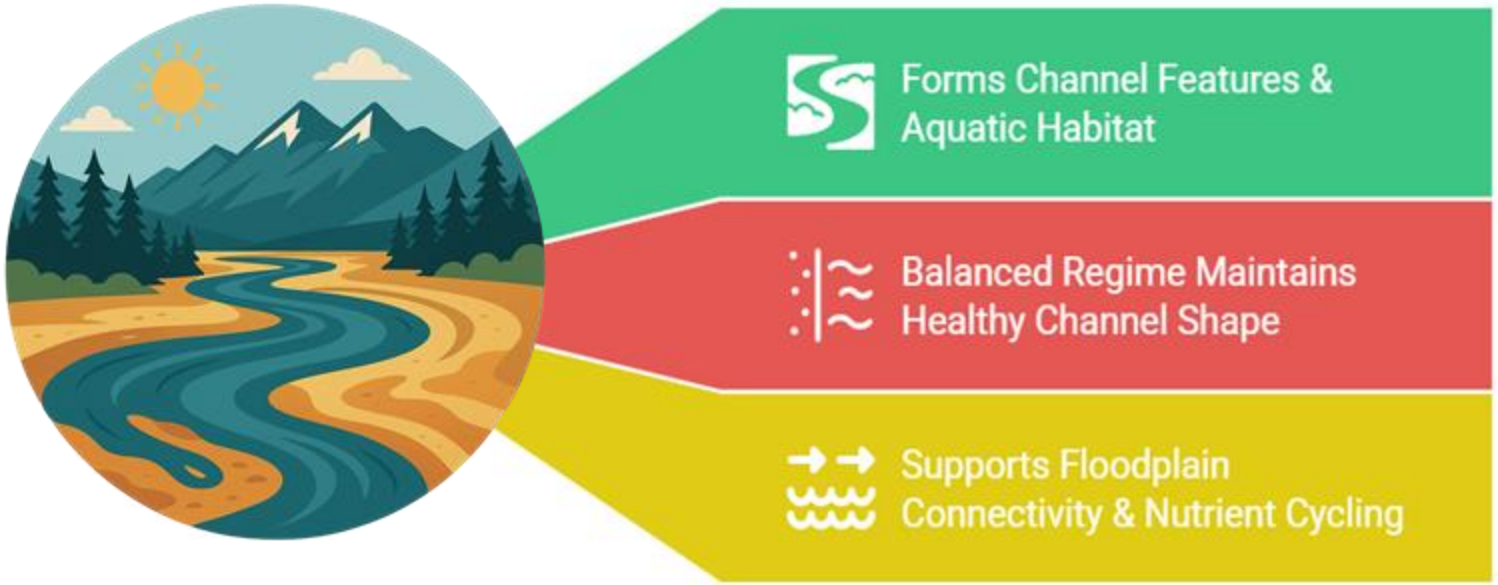
SEDIMENT REGIME

Category	Variable	Subvariable	Metric
Watershed	Sediment Regime	Watershed Supply	Land Development Index
			Wildfire Burned Areas
		Local	Local Supply
		Continuity & Transport	Dams
			Diversion Structures



Grading Updates & Refinements:

- Local Supply grading refinements based on relative CEA values
- Minimum grade for dams and diversions used for Continuity and Transport grade

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WATER QUALITY

Category	Variable	Subvariable	Metric
Watershed	Water Quality	Nutrients	Total Nitrogen
			Total Phosphorus
		Physical	pH
			Dissolved Oxygen
		Metals	Total Iron

Grading Updates & Refinements:

- A-C grading scale refinements
  - A = not detected

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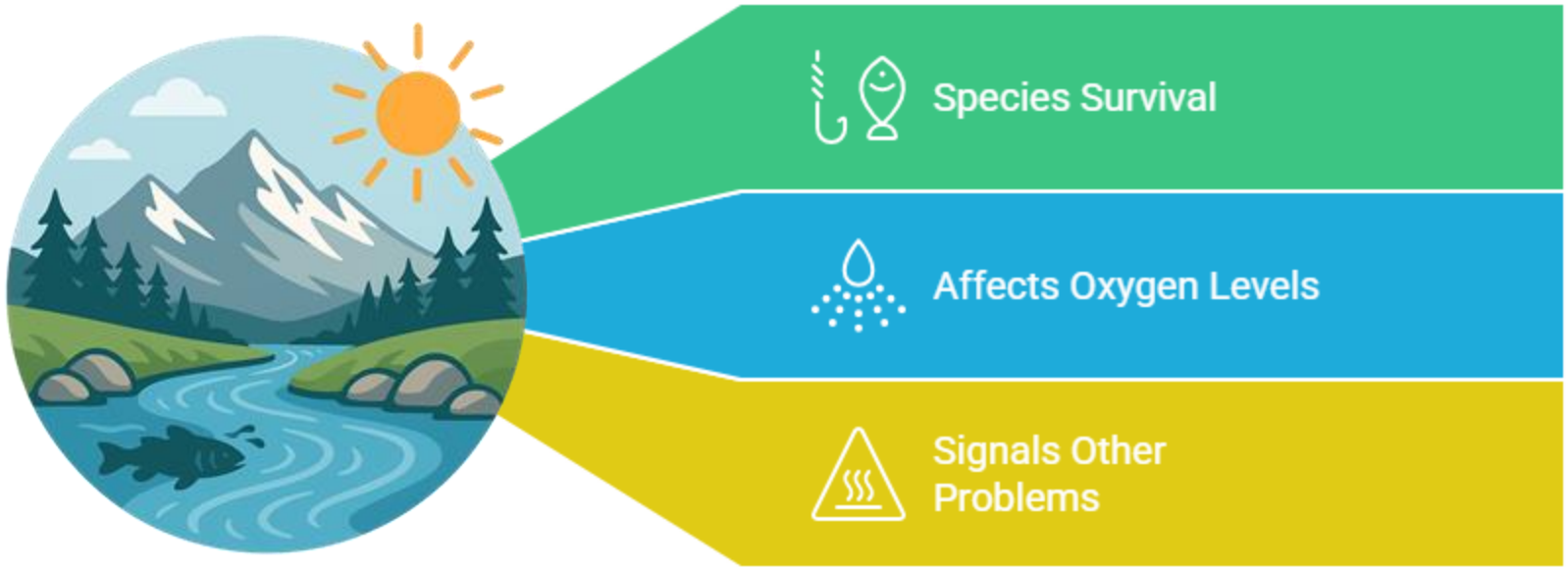
STREAM TEMPERATURE

Category	Variable	Subvariable	Metric
Watershed	Temperature	Temperature	Chronic (Weekly Average)
			Acute (Daily Max)



Grading Updates & Refinements:

- Additional Reach Data added

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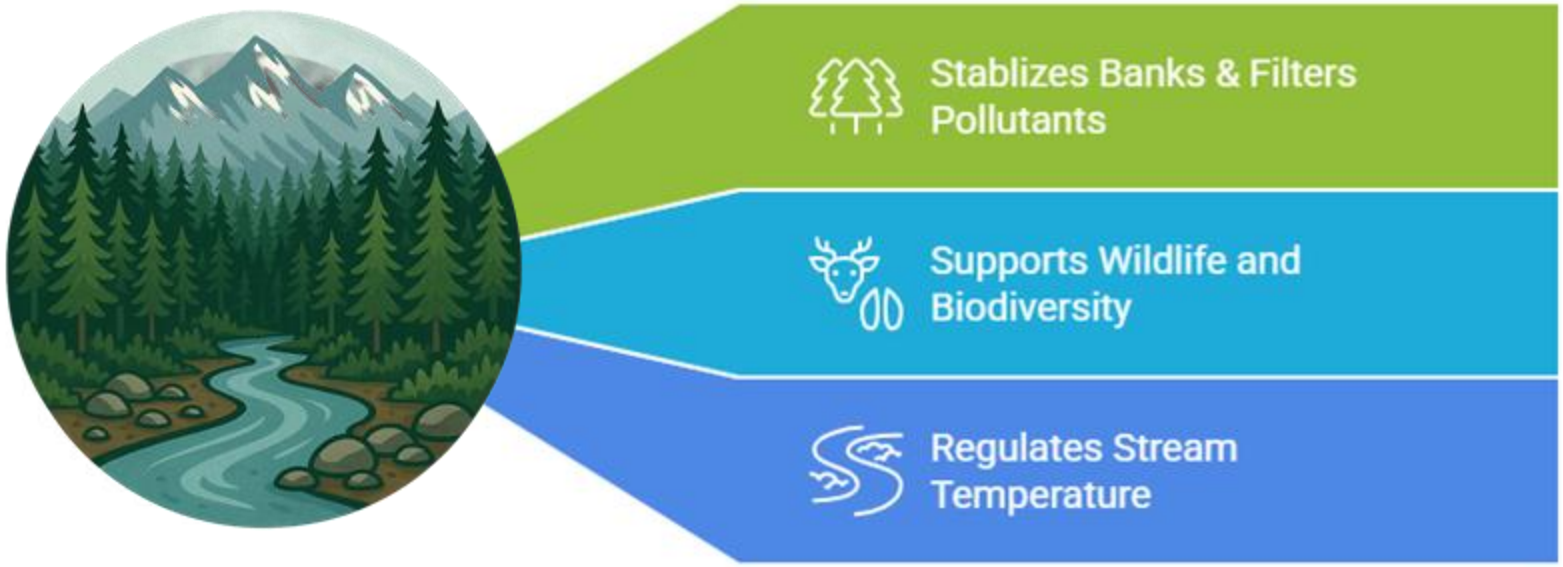
RIPARIAN

Category	Variable	Subvariable	Metric
Riverscape	Riparian	Riparian	Riparian Condition
			Floodplain Fragmentation
			Floodplain Confinement



Grading Updates & Refinements:

- Riparian length weighted average applied for subreaches

GEOMORPHOLOGY

Category	Variable	Subvariable	Metric
Channel	Geomorph	River Dynamics	Planform Dynamics
			Profile Dynamics

Grading Updates & Refinements:

- Refined original planform dynamics assessment to include severity of each area of impact
- Grading refinements to incorporate severity and relative CEA values

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AQUATIC ECOSYSTEMS

Category	Variable	Subvariable	Metric
Channel	Aquatic Ecosystems	Habitat	Microinvertebrate Habitat
			Trout Spawning
		Macroinvertebrates	Macroinvertebrates
		Fish Communities	Fish

Grading Updates & Refinements:

- Modified fish metric grades based on input from CPW
- Refined macroinvertebrate grade ranges to classify grey zone values as “Partly Functional” (D)

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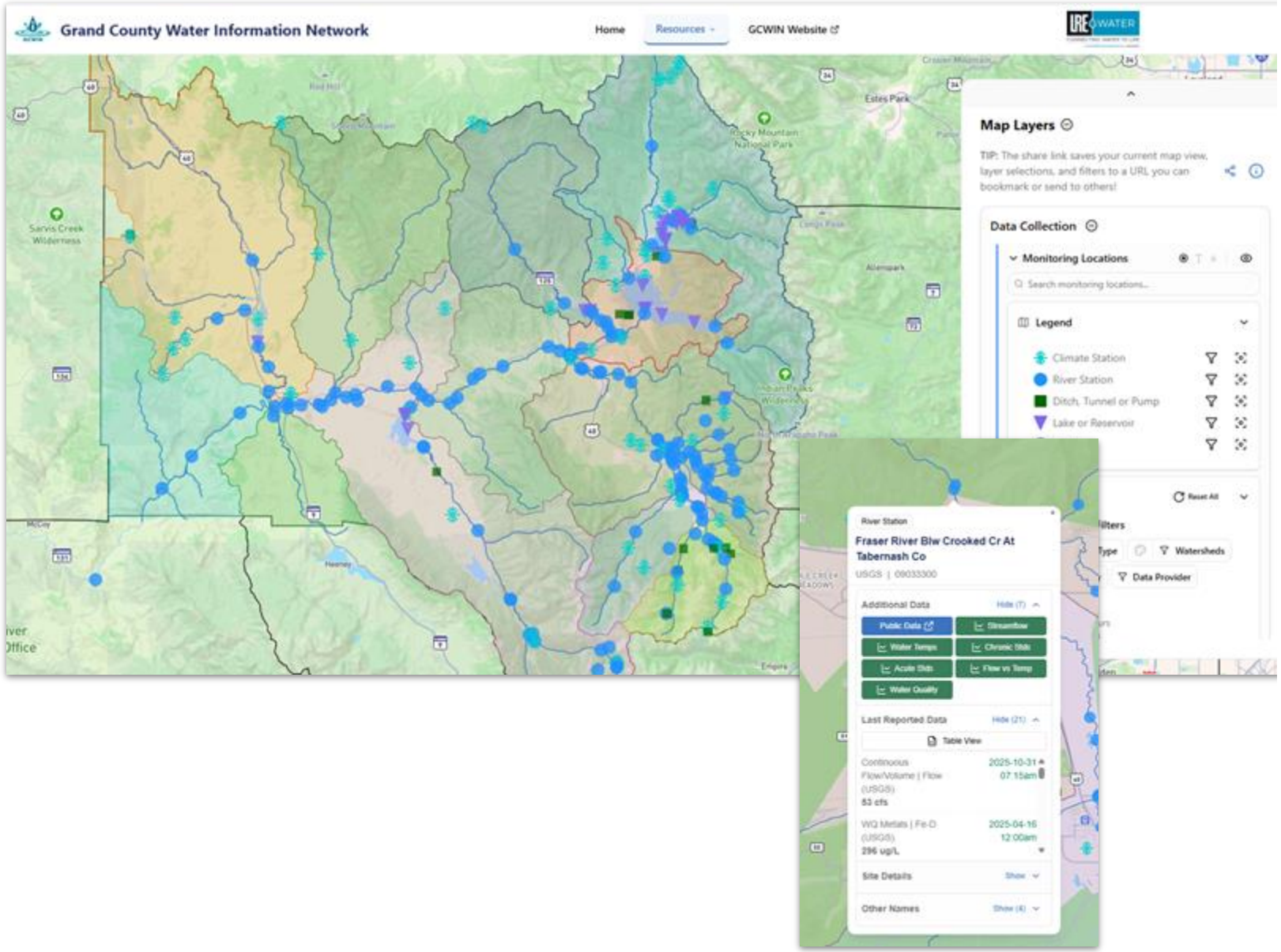
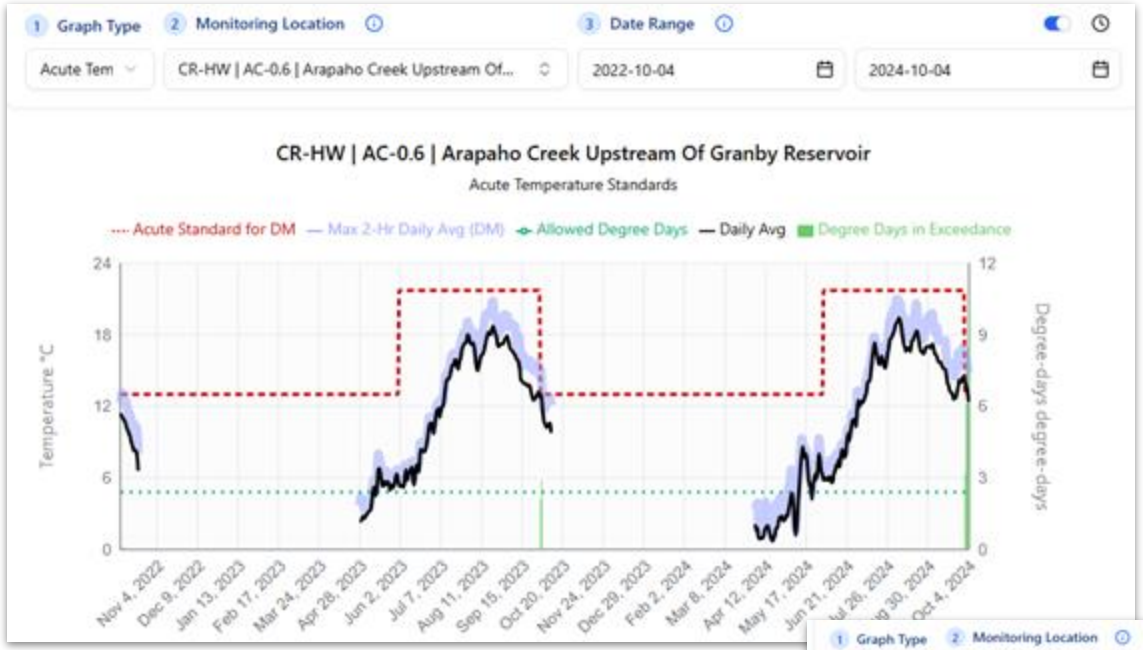
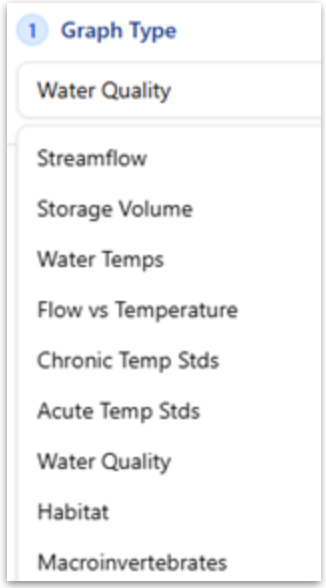
SNEAK PEAK: GCWIN DATA PORTAL

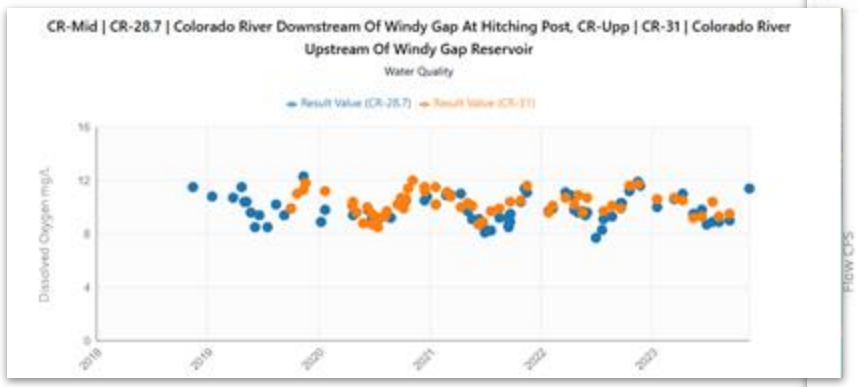


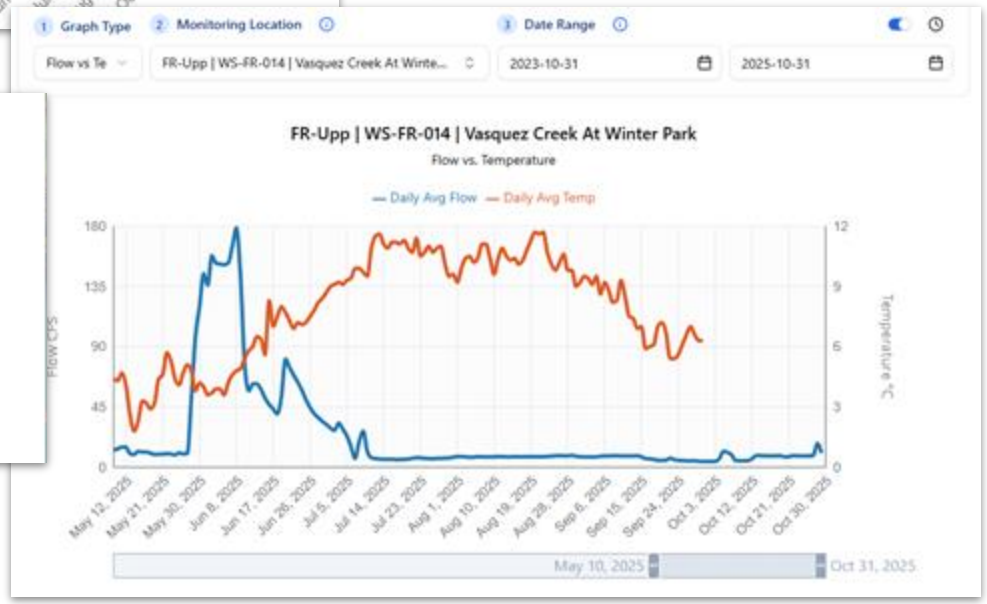
- Compiles, standardizes and automates import from over 10 data providers
- Search & filter monitoring locations
- Detailed site information
  - Visualization
  - Available data
  - Data providers & site names
  - Last reported data

GCWIN DATA PORTAL: VISUALIZATIONS & ANALYSIS





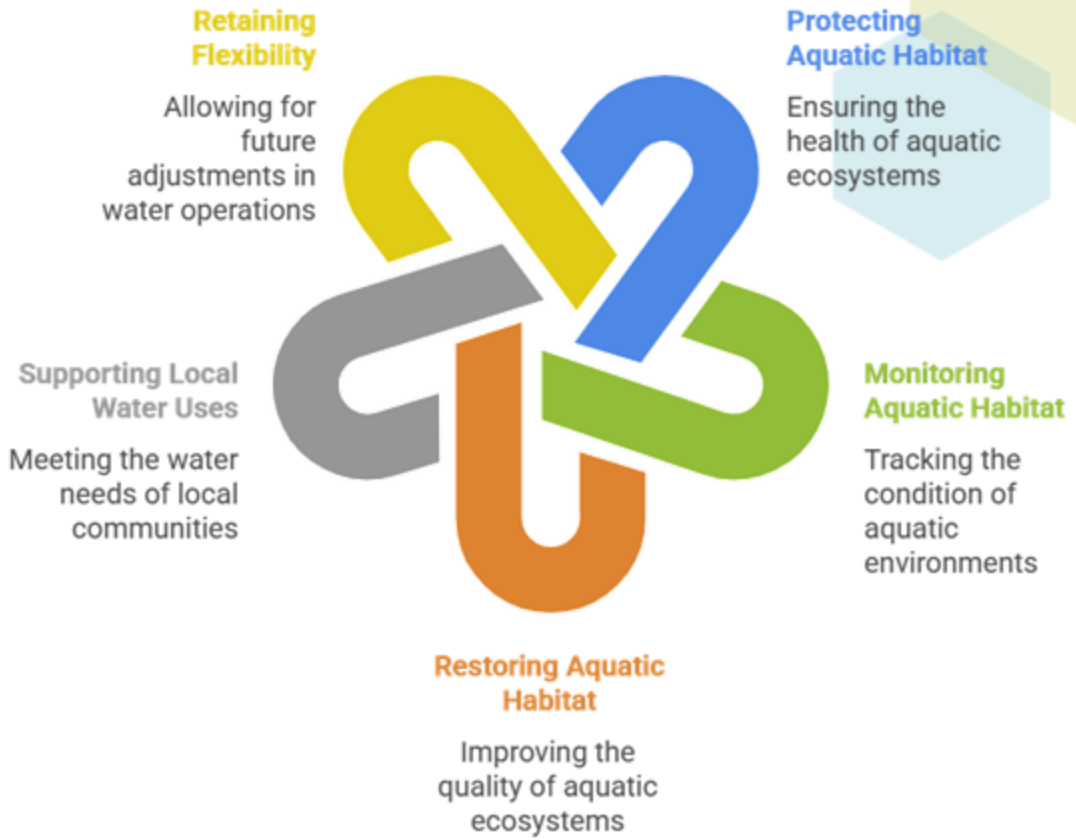




- Input for SMP web page
- Growing list of graph types
- Temperature standards & statistics
- “Smart” dropdowns and date ranges
- Saved searches
- Data download

GC SMP: Purpose Statement

The purpose of this Stream Management Plan is to provide a roadmap for maintaining a healthy and resilient stream system within the Cooperative Effort Area in Grand County, Colorado by protecting, monitoring, and restoring aquatic habitat while supporting local water uses and retaining flexibility for future water operations.



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GRAND COUNTY SMP THEMES

Community Engagement	Water Management and Stream Flow	Aquatic Habitat
Collaboration and communication among landowners, agencies, and residents to build awareness, increase participation, and create shared stewardship of Grand County's rivers and streams.	Maintain and enhance streamflows that support ecosystems, recreation, and local economies while increasing flexibility and resilience in water management.	Protect and restore fish and macroinvertebrate habitats by improving in-stream and riparian conditions, supporting biodiversity and watershed resilience.

GRAND COUNTY SMP THEMES

River Function

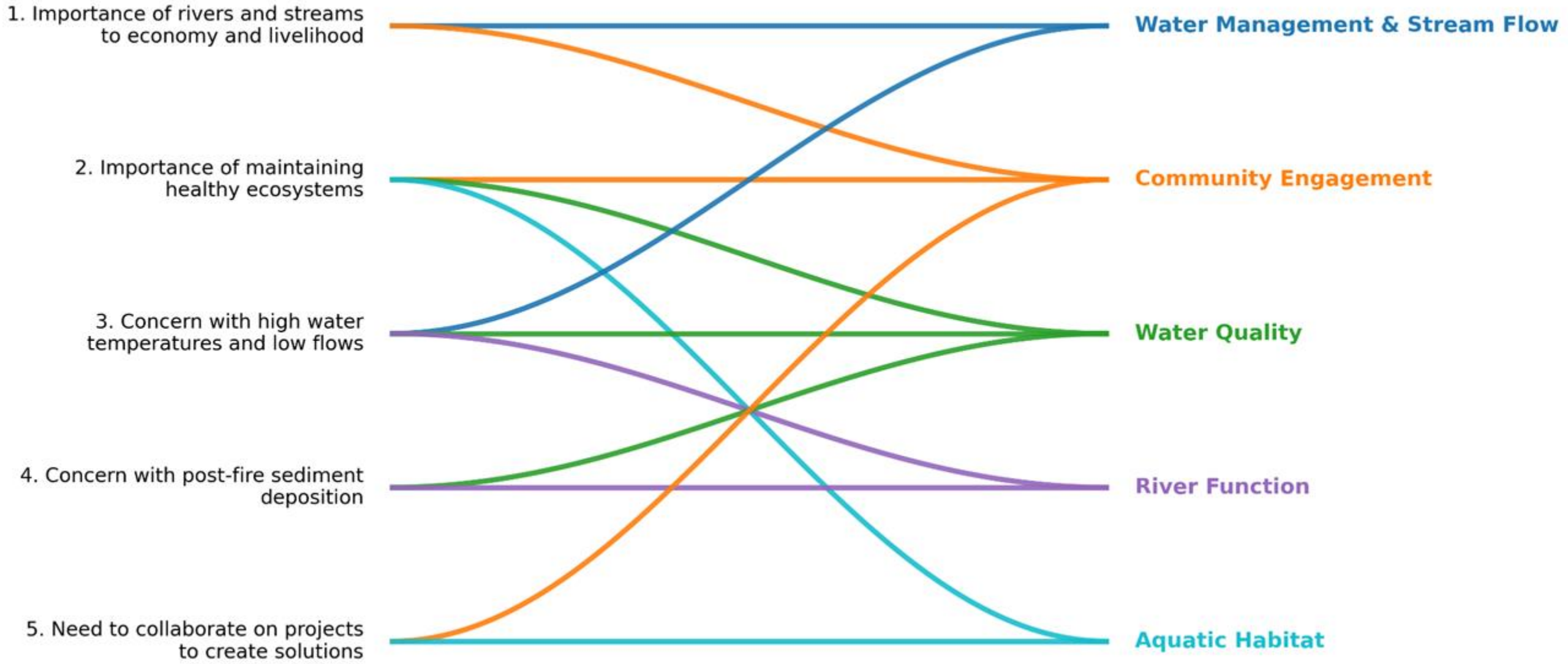
Maintain river stability, connectivity, and sediment balance through post-fire recovery, channel and floodplain restoration, and healthy riparian systems.

Water Quality

Improve and maintain clean, cool, and healthy water by addressing high temperatures, sediment, and nutrients through shading, monitoring, and adaptive management.

Community Values

GRAND COUNTY SMP THEMES



NEXT STEPS

- Compile and refine goals from the SHAC workshop
- Cross-reference and identify areas of alignment across themes
- Update and refine the prioritization matrix
- Prioritize stream reaches (High – Medium – Low)
- Coordinate with Stillwater to prepare for Part 3
- Present updated prioritization matrix on December 4

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