

**Yampa/White/Green River  
Basin Roundtable  
Minutes  
Wednesday November 8, 2017  
VFW Post 4265  
419 E Victory Way Craig, CO 81625  
6:00 p.m. - 9:00 p.m.**

1. **Call Meeting to Order:** The meeting was called to order at 6:00 p.m. by Jackie Brown.
2. **Introductions of Members and Audience:** All members and guests took turns introducing themselves. See attached sign in sheet.
3. **Approve/Modify Agenda:** Kelly Romero-Heaney made a motion to move the Steamboat Stream Management Plan from item 10 to item 9 on the Agenda, Tom Gray seconded, the motion passed.
4. **Review and Approval of September 13, 2017 Minutes:** Chuck Grobe made a motion to approve the September minutes, Burt Clements seconded, the motion passed.
5. **Budget Report (CWCB):** Craig Godbout reported that as of November the YWG Basin Balance is \$927,180 and the Statewide Account Balance is \$240,957. These balances reflect all WSRF Grants approved by the CWCB Board through September 2017. It also includes up-to-date distributions from severance Tax and the Construction Fund. Distribution of the Severance Tax and Construction Fund occur on the same schedule; 40% in July 2017, 30% in January 2018, and the remaining 30% in April 2018.
6. **SWSI TAG update: (45mins)** Kent Vertrees and Geoff Blakeslee represent the YWG on the Environmental and Recreational TAG. The SWSI Update will be using 5 scenarios from the Colorado Water Plan. A-Business as Usual, B- Weak Economy, C- Cooperative Growth, D- Adaptive Innovation and E- Hot Growth. The Environmental and Recreational TAG will only be talking about recreation and environment. Jackie Brown discussed updates on the Municipal and Self Supplied Industrial TAG. They are using 1051 data, water efficiency plans on file, and/or BIP data from 131 municipal providers. In the YWG Basin 38% of the population is represented. Craig Godbout explained that not every provider will give data so they use data from the largest participating provider. There was concern that SWSI has strayed from data collection to prediction. Craig has been filling in for Mary Brown on the Agriculture TAG. Craig asked Roundtable members to email their questions regarding SWSI to their YWG TAG representatives, so that their questions can be represented properly. Doug Monger voiced his concerns again on the inherent flaws of this process, and the inevitable silo effect. Doug would like to participate in the Ag TAG Committee. Jay Gallagher will voice the Roundtables concerns at the next CWCB Board meeting.
7. **Public Hearings/Public Input and Comment:** Public comment was asked for, there was none.
8. **Re-appointments and Elections (15min):** Jackie Brown recused herself from Chairing the Reappointment/Election section of the meeting, as her seat is up for reappointment. Alden Vanden-Brink explained the rules of the reappointment's/elections from the bylaws, as well as the order of the reappointment's and elections. All current members voted by way of anonymous ballot for the reappointment of Kent Vertrees, Rich Thompson, Jackie Brown, Jeff Comstock, and Burt Clements. Their seats will now expire in 2022.

Elections to the 3 vacant seats were held next. Each applicant took turns introducing themselves. Members voted to fill the Agriculture seat first, they chose from three candidates, by way of anonymous ballot. Will Myers from Moffat County received the most votes and was appointed to the seat. This seat is up for reappointment in November 2018.

The Domestic Water Provider had only one applicant, Frank Alfone, Doug Monger made a motion to appoint Mr. Alfone, Geoff Blakeslee seconded the motion, all were in favor. This seat will expire in 2022.

The three remaining applicants for the vacant At-Large seat introduced themselves, one was removed from the ballot, as there were no longer any open seats for Moffat County. The members voted by way of anonymous ballot. Jeff Myers received the most votes and was appointed to the board, with his seat expiring in 2022.

One IBCC representative, the Chair and both Vice chairs were also up for reappointment. The time and travel commitment required to be the IBCC rep was discussed. Alden Vanden-Brink nominated Tom Gray as an IBCC representative, Geoff Blakeslee seconded the motion. Chuck Grobe motioned to nominate Jackie Brown as Chair, Steve Hinkemeyer seconded the motion. Jackie Brown nominated Mike Camblin as the Yampa Vice Chair, Chuck Grobe seconded the motion. Chuck Grobe made a motion to nominate Alden Vanden-Brink as the White Vice Chair, Burt Clements seconded the motion. No other nominations were made. Doug Monger made a motion that the nominations cease and the ballot be approved as presented. Chuck Grobe seconded this motion. All were in favor. These appointments expire in November 2019.

- 9. Steamboat Stream Management Plan (20min)** Kelly Romero-Heaney and Julie Baxter gave an update to the Roundtable on the Yampa River Health Assessment Streamflow Management Plan. The project was awarded \$21,000 in Basin funds and began in March of 2017. It is scheduled to conclude in May of 2018. The project is developing a long-term strategy for improving health and resiliency of the Yampa River through the City of Steamboat Springs from the Chuck Lewis State Wildlife Area to the Steamboat Springs Waste Water Treatment Plant. See attached presentation.


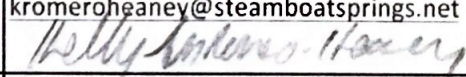
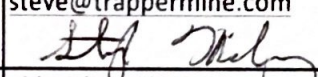

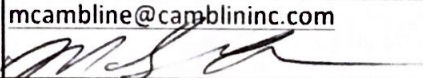
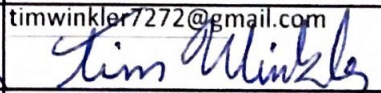
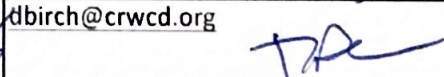
**10. Reports of Each Standing or Special Committee: (10min. Each)**

- a. BIP Sub-Committee (10min)** They have been working closely with Erin and Lisa, and will be ready to do a presentation at the January meeting.
- b. IBCC Update (10min)** The next IBCC meeting will be on November 30<sup>th</sup> 9:30-3:30 in Golden. Jackie Brown reminded members that both the BIP subcommittee meetings and the IBCC meetings are open to the public.
- c. West Slope Technical Committee (10min)** No update.
- d. PEPO/Education Committee Update (15min)** Members previewed the YWG website, and discussed the PEPO Committee report. See Attached.
- e. Grant Committee Update (10min)** Steve Hinkemeyer suggested making three changes to the grant application process/guidelines. 1- each applicant have a BRT representative to represent them at the meeting. For introduction purposes only, not as a supporter of the project. 2-move the application deadline to 30 days before the meeting, instead of 14 days. This would give the Grant Committee more time to review the application and approve it prior to the agenda being set. 3- give applicants 20 minutes on the agenda for first readings, instead of 10 minutes. Geoff Blakeslee motioned to make the suggested changes, Burt

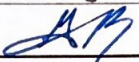
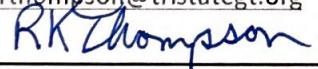
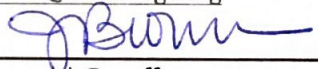
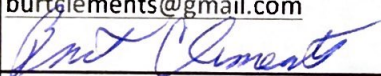
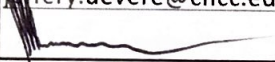
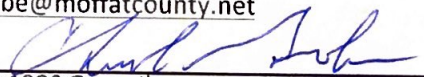
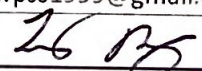
Clements seconded, motion passed. Mike Camblin volunteered to join the Grant Committee. Steve discussed progress with 6 month updates from current projects.

**f. DWR Update (10min) – Erin Light.** The next couple of months the Water Commissioners will be very busy crunching diversion records. Erin introduced Scott Hummer who is new to their team.

- 11. White River Storage Project Phase 2 Study update: Rio Blanco Conservation District (30min)** Update was given by Steve Jameson and Brad McCloud. They summarized the White River Storage Feasibility Study, and the work that was completed following the study. The current project has participated in 62 stakeholder meetings, conducted map studies, feasibility designs and costs on three potential reservoir sites. Wolf Creek Off-Channel, Wolf Creek Mainstem, and Spring Creek. Ultimately selecting the most favorable site, Wolf Creek off-channel. Their goal is to initiate project permitting in 2018. See attached presentation.
- 12. Announcements:** Jackie Brown asked that members and audience please make sure they are signing into the meetings. Marsha Daughenbaugh announced that she intends on retiring from the Community Ag Alliance in April. She has asked to stay on and work with water issues and with the CWCB Grant. Hunter Causey announced that the Colorado River District will be opening up a grant on December 1<sup>st</sup>. If anyone is interested please let him know or pass on his contact information.
- 13. Dates and Agenda Items for Future Meetings:** Next Meeting date is January 10, 2018 at 6:00 p.m.
- 14. Adjournment:** Meeting was adjourned at 9:00 p.m.

Membership of the Yampa White Green Basin Roundtable 2017		Name	Term Exp.	Jan, 11	Mar, 8	May, 10	Jul, 12	Sep, 13	Nov, 8	Signature/email
1	Routt County Commissioners Appointment: (Alt. IBCC Rep through 2015)	Doug Monger	2018	X	X	X	X		X	 dmonger@co.routt.co.us
2	Moffat County Commissioners Appointment: (Alt. IBCC Rep through 2015)	Tom Gray	2018				X		X	trgray7@gmail.com
3	Rio Blanco County Commissioners Appointment: (Chair through 2015)	Jon Hill	2018							jon.hill@rbc.us
4	Garfield County Commissioners Appointment: (Vaccant Never filled)									
5	Routt County Municipality Appointment:	Kelly Romero-Heaney	2018	X	X		X	X	X	 kromeroheaney@steamboatsprings.net
6	Moffat County Municipality Appointment:	Stephen Hinkemeyer	2018	X	X	X	X	X	X	 steve@trappermine.com
7	Rio Blanco County Municipality Appointment: (vice Chair #2 through 2017)	Alden Vanden Brink	2018	X	X		X	X		 aldenvb@yahoo.com
8	Upper Yampa Conservancy District Appointment: (IBCC Rep through 2016)	Kevin McBride	2018		X	X	X	X	X	kmcbride@upperyampawater.com
9	Juniper Water Conservancy District Appointment:	Mike Camblin	2018	X	X	X		X	X	 mcamblin@camblininc.com
10	Yellow Jacket Water Conservancy District Appointment	Kai Turner	2018							kaimturner@gmail.com
11	Pothook Water Conservancy District Appointment:		2017							
12	Rio Blanco Conservancy District	Tim Winkler	2020	X				X	X	 timwinkler7272@gmail.com
13	Colorado River Water Conservation District Appointment:	Dan Birch	2018		X		X	X	X	 dbirch@crwcd.org



14	House/Senate Appointment:		2018								
	At-large Appointments from above members			Jan, 11	Mar, 8	May, 10	Jul, 12	Sep, 13	Nov, 8	Signature/email	
15	Environmental Appointment:	Geoff Blakeslee	2018	X	X	X	X		X	gblakeslee@tnc.org 	
16	Agricultural Appointment: (Chair through 2017)	Mary Brown	2018	X	X		X			marytaylorbrown@gmail.com	
17	Recreation:	Kent Vertrees	2017				X		X	kent@steamboatpowdercats.com	
18	Domestic Water Provider:	Steve Colby	2017		X	X				scolby@mcwater.org	
19	Industrial Water Interest:	Rich Thompson	2017	X		X				rthompson@tristategt.org 	
20	At-Large Representative:	Chris McCourt	2017							cmccourt@tristategt.org	
21	At-Large Representative: (vice Chair #1 through 2017)	Jackie Brown	2017		X	X	X	X	X	jbrown@tristategt.org 	
22	At-Large Representative:	Jeff Comstock	2017	X		X		X		jcomstock@moffatcounty.net	
23	At-Large Representative:	Burt Clements	2017	X		X		X	X	burtclements@gmail.com 	
24	At-Large Representative:	Chuck Whiteman	2021		X	X	X	X		cwa@rioblanco.com	
25	At-Large Representative: (IBCC Rep through 2017)	Jeff Devere	2021	X	X	X	X	X		jeffery.devere@cnc.edu 	
26	At-Large Representative:	Chuck G. Grobe	2021	X	X		X	X		cgrobe@moffatcounty.net 	
27	At-Large Representative:	Travis Day	2021		X	X			X	wpss1999@gmail.com 	

28	At-Large Representative:	Bill Badaracca	2021	X	X	X	X	X		<a href="mailto:fairsquareoffice@gmail.com">fairsquareoffice@gmail.com</a>
29	At-Large Representative:	Vince Wilczek	2021	X				X		<a href="mailto:vwilczek@rangelco.gov">vwilczek@rangelco.gov</a> <i>Wilczek</i>
	<i>At-large Appointments from above members</i>			Jan, 11	Mar, 8	May, 10	Jul, 12	Sep, 13	Nov, 8	Signature/email
30	Green River Basin Representative	T. Wright Dickinson	2021					X		<a href="mailto:twrightdickinson@vermillionranchlp.com">twrightdickinson@vermillionranchlp.com</a>
31	Non Voting that live outside the Basin that hold water rights in the Basin		2021							
32	Non Voting that live outside the Basin that hold water rights in the Basin		2021							
33	Non Voting that live outside the Basin that hold water rights in the Basin		2021							
34	Non-Voting Colorado Water Conservation Board Representative	Jay Gallagher	no term	X	X	X	X	X	X	<a href="mailto:jaygalla@comcast.net">jaygalla@comcast.net</a> <i>JG</i>



# Guest Sign-In Sheet

Name	Affiliation	Email Address
CRAIG GODBOUT	CWCB	craig.godbout@state.co.us
JUAN GARCIA	Colorado / A LARGE APPARENT	JUAN.GARCIA@TRISTATEGT.ORG
FRANK AUFONF	M. WERNER MARTIN	FAUFONF@WWW.WATER.COM
ERIN LIGHT	C.D.W.R	HAVE IT ALREADY
Will Myers	Headwater Engineering	Like Erin said
JEFF MEYERS	COYOTE CREEK RANCH	coyotecreek@comcast.net
Marsha Daughenbaugh	can	you have
Brian Hodge	Trout Unlimited	bhodge@tu.org
Kaitlyn Vaux	Trout Unlimited	kvaux@tu.org
Kelly Beal	TSET	kbeal@tristategt.org
Michelle Garrison	CWCB	michelle.garrison@state.co.us
Lisa Wade	Wilson Water Group	Lisa.Wade@wilsonwatergroup.com
Steve Jamieson	W.W. Wheeler Associates, Inc.	steve.jamieson@www.wheeler.com
Danielle Hannes	W.W. Wheeler & Assoc.	Danielle.Hannes@www.wheeler.com
Brad McCloud	EIS Solutions / RBWCD	brmccloud@eisolutions.com
Alan Tipton	W.W. Wheeler & Assoc.	alan.tipton@www.wheeler.com
Nicole Seltzer	RiverNetwork	nseltzer@riversnetwork.org
Reed Kelley	Pio Blanco Herald Times	josephine.baslin@gmail.com
Hunter Causey	CRWCD	hcausey@awcd.org



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**Yampa-White Green Rivers Basin Round Table  
PEPO Committee Report – November 8, 2017**

**New since the July 12 report is in yellow**

PEPO Committee Meeting prior to Round Table Meeting

January 11, March 8, May 10, July 12, Sept 13, November 8

2017 Events

Feb 17: Collaboration Meeting for organizations involved with Water Education in Routt County  
Attendees: YWG RT, CAA, Yampatika, Extension, City of Steamboat, Trout Unlimited, Friends of the Yampa,

YV Sustainability Council, River Network

Feb 18: Forum on water issues in Rangely – 60 people attended

Speakers: Jim Pokrandt, State of the Colorado River

Alden Vanden Brink, Issues that Affect the Lower White River

Marsha Daughenbaugh, YWG Water Education Update

Feb 28: Forum on water issues in Craig – 70 people attended

Speakers: Kevin Rein, “Use or Lose” Water Policies

Marsha Daughenbaugh, YWG Water Education Update

March 22: Colorado Ag Water Alliance Workshop in Steamboat – 102 people attended

Speakers: Greg Peterson, CAWA, Motivations for Ag Producers to Use Their Water

Differently

Phil Brink, Colorado Cattlemen’s Assn, What Colorado Ag Producers Think

About Water Leasing

Dan Birch, CRWCD, Colorado River Compact

Kevin Rein, Colorado Dep’t of Water Resources, “Use it or Lose it”

Erin Light, Colorado Dep’t of Water Resources, Water Waste

Zach Smith, Colorado Water Trust, Collaborating with CWT

Brian Hodge, Trout Unlimited, Collaborating with TU

Geoff Blakeslee, The Nature Conservancy, Water Leasing Pilot Project

Mike Camblin, Maybell Ditch, Challenges of Ditch Renovations

May 23: Residential Water Efficiency Workshop in Steamboat – 25 people attended

Speaker: Kevin Reidy, Colorado State Water Conservation Technical Specialist

June 1: Friends of the Yampa River Festival in Steamboat: 150 people attended

Speakers: Kent Vertrees, FOY, History of the Yampa River Partnerships

Kevin McBride, UYWCD, 2017 Reservoir Levels and Yampa River Flows

Charlotte Overby, Colorado Lands Foundation, Antiquities Act and Public

Lands

Tim Corrigan, Routt County Commissioner, Yampa River Leafy Spurge Program

Eric Kuhn, CRWCD, The Yampa’s Place in the Colorado River Basin

**Sept 11: Maybell Ditch Tour and Water Leasing Workshop: 54 people attended**

**Speakers: Mike Camblin and Bruce Barnes, Maybell Irrigation District**

**Geoff Blakeslee and Aaron Derwingson, The Nature Conservancy**

**Mark Harris, Grand Valley Water Users**



### YWG Website

Planning Meetings: Feb 13 and March 16

PEPO Committee reviewed and offered suggestions: May 10, July 12, Sept 13, November 8

The website development initial work is completed and the contract with Kaffeinated

Kodemonkey has been terminated

Initial oversight and guidance provided by Jeff Devere

Content and Photographs have been solicited from RT members

Website Maintenance: April McIntyre is serving as the webmaster

### Public Outreach

Round Table Meeting Announcement – Meetings Held Jan 11, March 8, May 10, July 12, Sept 13, November 8

Print Announcements in Craig Daily Press, Steamboat Pilot/Today, Rio Blanco Herald

Times

Posted on YWG Website; Email Distribution through Routt County Ag Journal

Round Table Vacancy Announcement for positions to be filled November 8

Print Announcements in Craig Daily Press, Steamboat Pilot/Today, Rio Blanco Herald

Times

Posted on YWG Website

Article titled “CAWA to Hold Water Workshop in Steamboat” written by Greg Peterson in Steamboat Pilot: January

Article titled “If Not You – Who?” written by Marsha Daughenbaugh in Steamboat Pilot, Craig Press and RB Times: March

Article titled “Stream Management Planning” written by Kelly Romero-Heaney in Steamboat Pilot: June

Article titled “Yampa-White-Green Rivers Basin Round Table Seeking Board Members” written by Marsha Daughenbaugh

Steamboat Pilot and Craig Daily Press; submitted to Rio Blanco Herald Times – rewritten by staff and printed: Sept

YWG Basin Information Series: “YWG Basin Facts” ad in 4 local papers in September

“Goals and Measurable Incomes from the YWG BIP” ad in 4 local papers in November

### YWG Grant

YWG grant application and instructions approved by YWGRT – March 8

Information, application and instructions posted on YWG Website

April McIntyre is the point person for grant management, contract has been negotiated with CAA

### Conferences/Workshops Attended

IBCC/CAWA Workshop – January 31; Marsha Daughenbaugh  
CAWA Workshop – March 22; Mary Brown, Dan Birch, Geoff Blakeslee, Mike Camblin, Doug  
Monger, Kelly Romero-Heaney,

Kevin McBride, Bill Badaracca, Jackie Brown, Marsha Daughenbaugh

Friends of the Yampa River Festival – June 1: Kent Vertrees, Kelly Romero-Heaney, Kevin  
McBride, Marsha D

Working Wetlands and Flood Irrigation Teleconference – Sept 7: Marsha D

#### CWCB WSRA Grant

Application for \$150,000 approved by CWCB December 8, 2016; Expires January 31, 2020

Funds Allocated: \$150,000      Used to date: \$12,507      Balance: \$137,493

#### PEPO EAP Outreach Funds

Available for 2017FY: \$6500      Used to date: \$6500

Available for 2018FY: \$6500      Used to date: \$1490      Balance Available: \$5010

#### UPCOMING

State of the River Workshop – Date and Location TBD

Water Leasing Workshop – Date and Location TBD

Social Media Posts

Additional Newspaper Ads explaining the scope and purpose of YWG Basin RT

Submitted to Kelly Romero-Heaney, PEPO Chair    October 30, 2017

Marsha Daughenbaugh

# Yampa River Health Assessment & Streamflow Management Plan



## Update for Yampa/White/Green Basin Roundtable

November 8, 2017

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# Project Overview

Develop a long-term strategy for improving health and resiliency of the Yampa River in the face of changing future climatic conditions and water use demands.

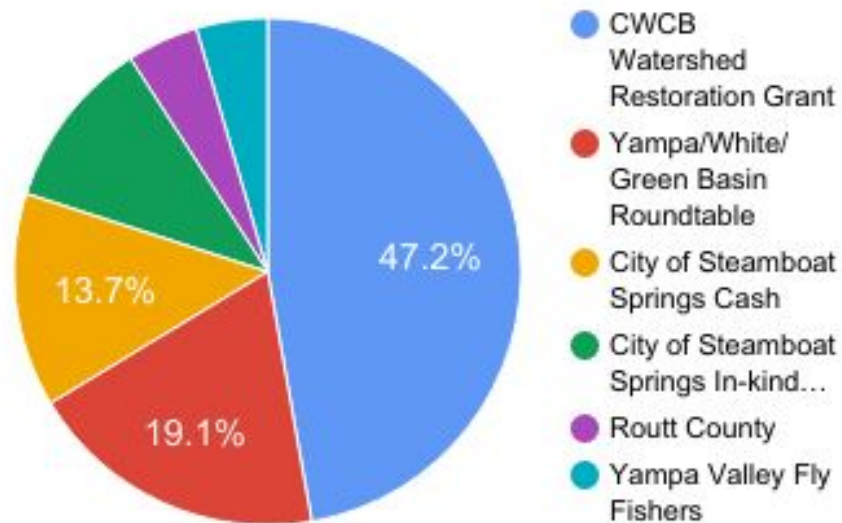
## Objectives

- Identify target flows to support river health and community needs
- Prioritize actions and projects to achieve measurable progress toward targets

## Outcomes

- Data-driven analysis and recommendations
- Stakeholder and community buy-in
- Actionable implementation plan

## Project Funding



COLORADO'S  
WATER PLAN

# Project Scope

## Plans for stream reach through town

...also benefits upstream and downstream conditions.

## Assesses river health holistically

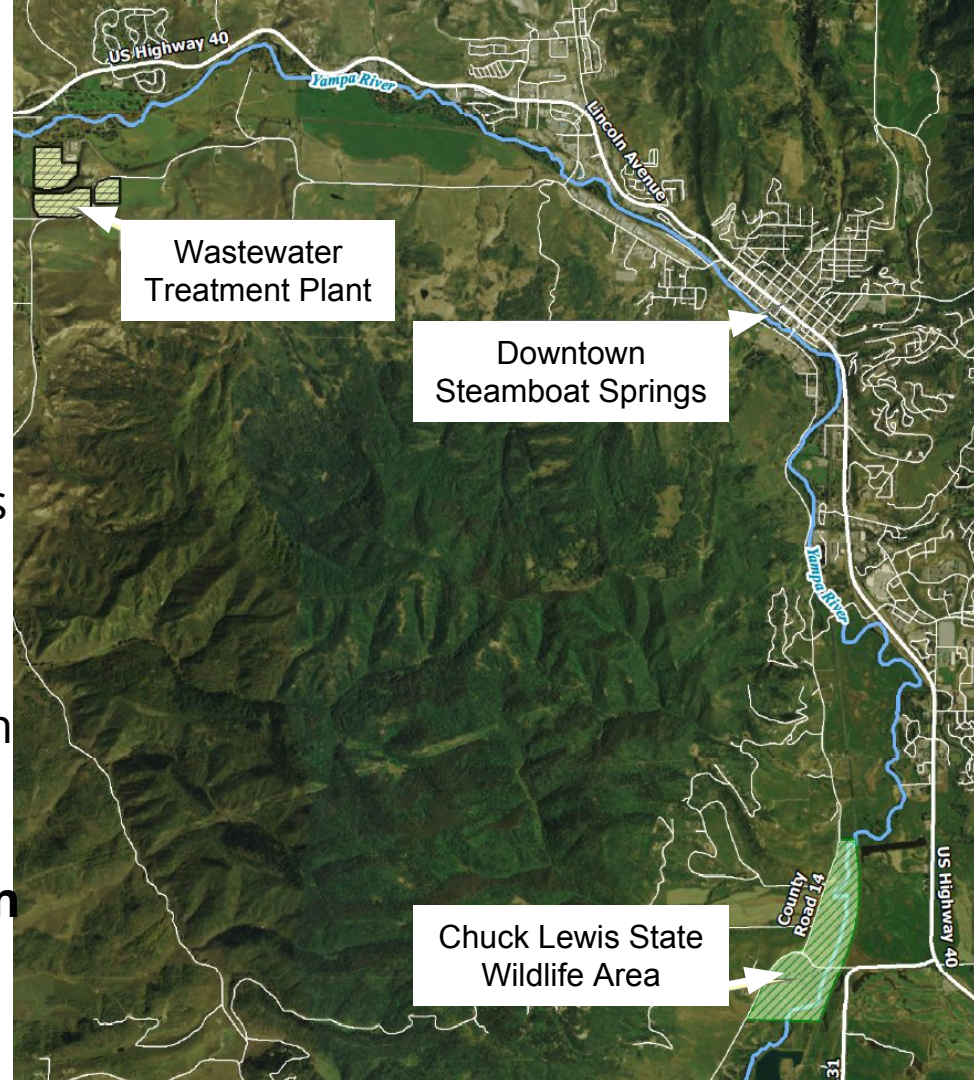
...specifically identifies targets/strategies for flows.

## Focuses on flows not tubers

...provides data for Parks and Recreation Master Plan update.

## Prioritizes actions for implementation

...focuses on incentivizes not regulation.





# Planning Steps

## Yampa River Health Assessment & Streamflow Management Plan

May  
2017

November  
2017

December  
2017

February  
2018

April  
2018

**Community  
Engagement  
Strategy &  
Plan Goals**

**Yampa River  
Health  
Assessment**

**Management  
Objectives  
and Targets**

**Alternative  
Actions**

**Implementation  
Strategy**



# Community Engagement Strategy

Yampa River Health Assessment &  
Streamflow Management Plan



# Advisory Committee

- City of Steamboat Springs Parks and Community Services
- City of Steamboat Springs Public Works
- Routt County Environmental Health
- Colorado Parks and Wildlife
- Colorado Water Trust
- Community Agriculture Alliance
- Trout Unlimited, Colorado Water Project
- Yampa Valley Fly Fishers
- Friends of the Yampa
- The Nature Conservancy
- Upper Yampa Water Conservancy District
- Upper Yampa Watershed Group

# Plan Goals

1. Preserve and enhance healthy aquatic and riparian habitat.
2. Meet regulatory responsibilities including water quality and temperature standards.
3. Build upon existing information to develop a science-based assessment of river system conditions to inform decision-making and long-term monitoring.
4. Establish integrated and flexible management strategies that align with other planning efforts and strengthen resilience and sustainability.
5. Protect a strong local economy, particularly the agriculture and recreation sectors.
6. Foster a culture of shared stewardship of the Yampa River among stakeholders and community members.

# Alignment with Roundtable/BIP Goals

- Identify and address Municipal and Industrial (M&I) water shortages.
- Quantify and protect non-consumptive water uses.
- Maintain and consider the existing natural range of water quality that is necessary for current and anticipated water uses.
- Develop an integrated system of water use, storage, administration and delivery to reduce water shortages and meet environmental and recreational needs.



# Planning Steps

May  
2017

November  
2017

December  
2017

February  
2018

April  
2018

**Community  
Engagement  
Strategy &  
Plan Goals**

**Yampa River  
Health  
Assessment**

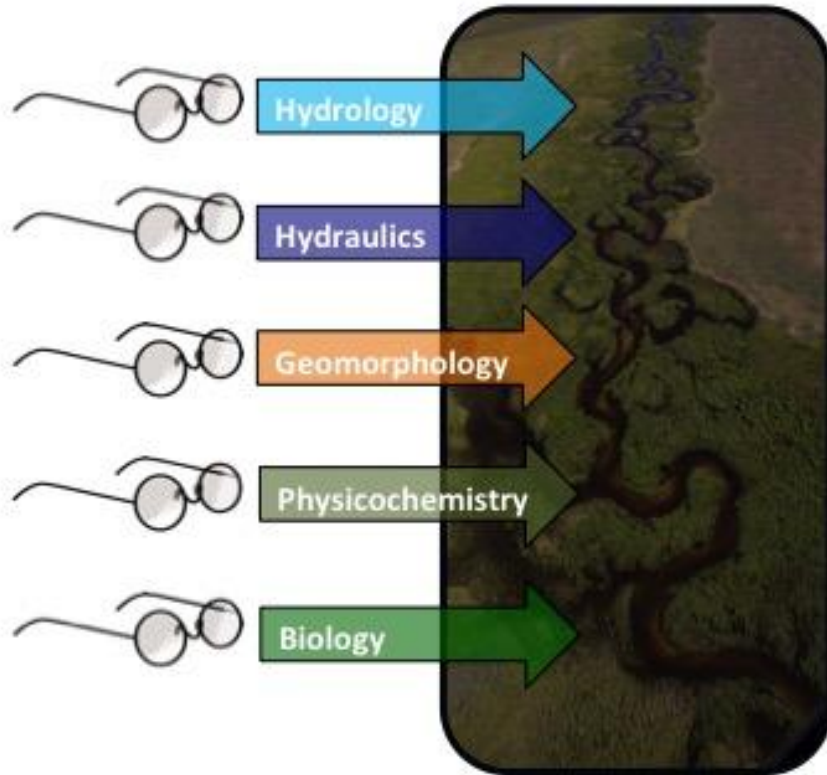
**Management  
Objectives  
and Targets**

**Alternative  
Actions**

**Implementation  
Strategy**



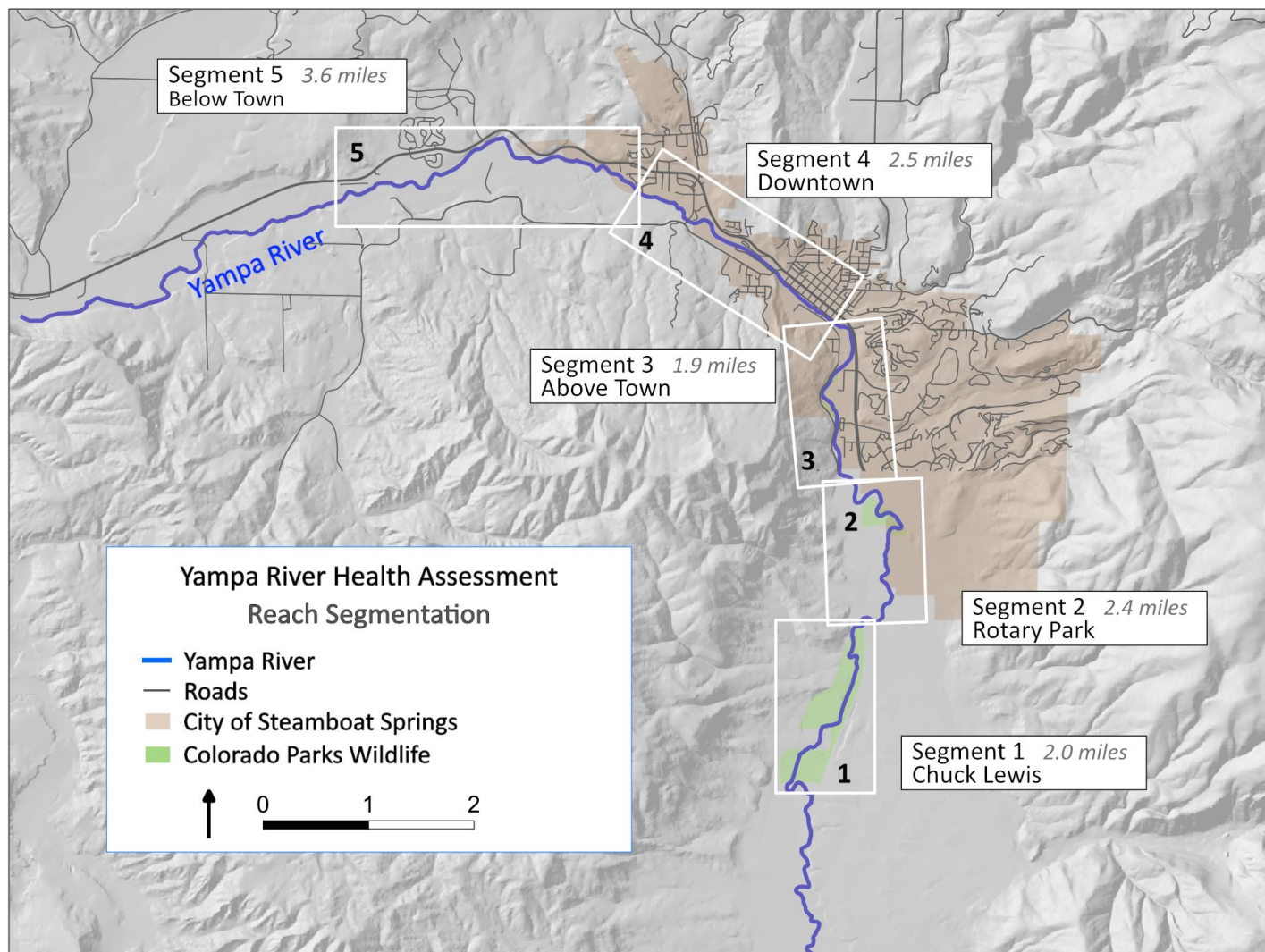
# River Health Assessment (FACStream Method)



Flow regime	A
Sediment regime	A
Water chemistry	A
Floodplain conn.	A
Riparian condition	A
Organic material	A
Morphology	A
Resilience	A
Physical structure	A
Biota	A
Reach condition	A

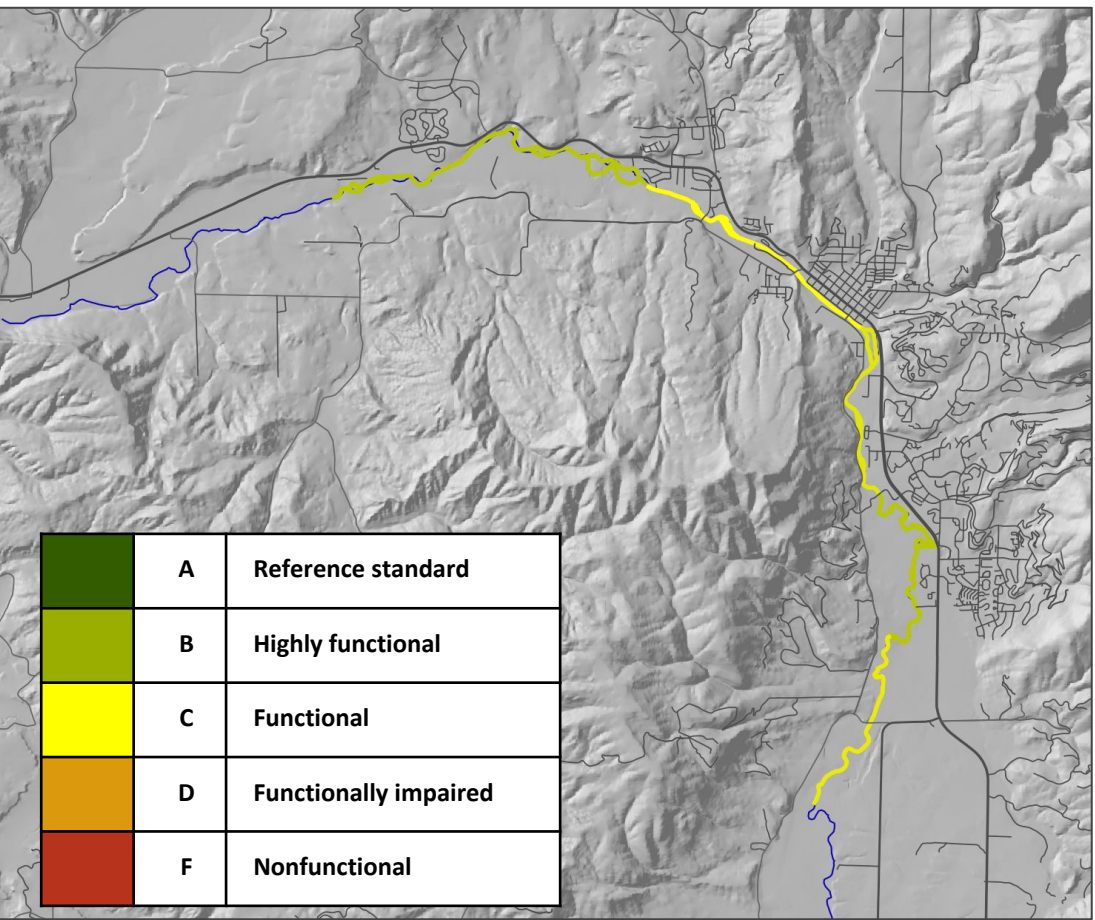


19 reaches in 5  
river segments





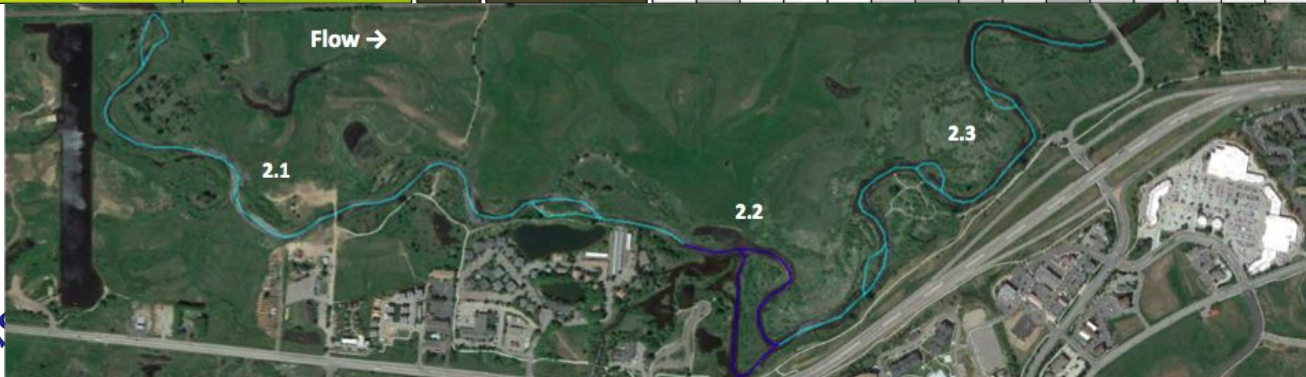
# Assessment Results



Yampa River Stream Health Report Card: Reach Summaries							
Scale	Variable	Subvariable	Assessment Reach				
			1	2	3	4	5
Watershed	Flow regime	Total volume	A	A	A	A	A
		Peak flow	B	A-	A	A	A
		Base flow	A-	A-	A-	A-	A-
		Rate of change	B	B+	A-	A	A-
	Sediment regime	Land sources	A-	A-	B	B-	B-
		Channel sources	A-	A-	A-	A-	A-
		Continuity	C+	B-	B+	B	B
	Water quality	Temperature	D	D	D	D	D
		Nutrients	C+	B	B	B	B
		Chemical Condition	B	B	B+	B+	B+
	Landscape	Buffer capacity	B	C+	C+	D	C+
		Terrestrial connectivity	B-	B	C-	D	B-
		Aquatic connectivity	B	B+	C+	C	B
Riparian	Floodplain connectivity	High Frequency	D+	C+	D	D	C+
		Medium Frequency	C-	B	D	D	B-
	Riparian Condition	Riparian Condition	B-	B-	C	D	B-
	Organic material	Wood	B-	B	B	C	B-
		Detritus	B-	B	B	B-	B-
Stream	Morphology	Planform	D	B-	C	D	C+
		Dimension	C	B-	C+	D+	B-
		Profile	C+	B	C+	C	B
	Stability	Resistance	B-	B-	B	B-	B
		Equilibrium	C+	B-	B	B-	B
		Resilience	D+	B-	D-	D	C
	Physical structure	Macrohabitat	C-	C+	C	C	B-
		Microhabitat	C+	B-	B	B-	B
	Trophic Structure	Trophic structure	C	B-	C+	C	B-
Overall River Health			C	B-	C+	C	B-

Upper Yampa River, Rotary Park Segment			Causes of Impairment (Estimated Contribution of Stressors)																	
River Health Assessment																				
<div> <div> <div>A</div> <div>B</div> <div>C</div> <div>D</div> <div>F</div> </div> <div>Reach Condition →</div> </div> <div> <div>None</div> <div>Low</div> <div>Moderate</div> <div>High</div> <div>Extreme</div> </div> <div>Stressor Contribution</div>			<div> <div>Water use/management</div> <div>Dams/reservoirs</div> <div>Watershed land use</div> <div>Watershed channel erosion</div> <div>Irrigation runoff/ return flows</div> <div>Riparian development</div> <div>Riparian land conversion</div> <div>Aggregate mining</div> <div>Road/bridge</div> <div>Levees/ channelization</div> <div>Bank/channel armor</div> <div>Channel structures (dams/weirs)</div> <div>Woody material recruitment/removal</div> <div>Exotic plant species/weeds</div> <div>Exotic aquatic species</div> </div>																	
2.1	2.2	2.3																		
6100 ft	1580	5160 ft																		
			B+	Flow Regime																
			B	Sediment Regime																
			C-	Water Quality	Anthropogenic causes of temperature impairment unknown															
			C+	Landscape																
			B-	Floodplain																
			B-	Riparian Condition																
			B	Organic Material																
			B-	Morphology																
			B-	Stability																
			B-	Physical Structure																
			B-	Trophic Structure																
			B-	River Health																

Rotary Park





# Assessment Results

## The Good

- Patterns of streamflow closely resemble natural conditions, despite presence of reservoirs
- Watershed scale delivery of sediment to Yampa near Steamboat fairly unaltered

## The Bad

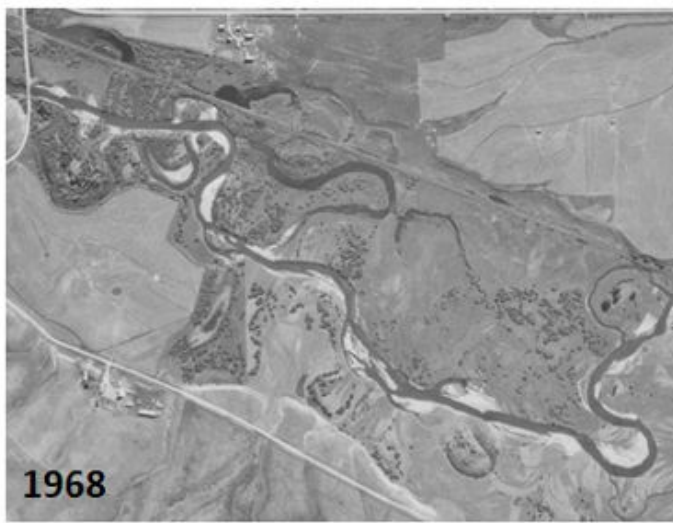
- River access to floodplain above Steamboat altered by diking and historical mining activities
- Non-native fish species alter aquatic food webs and outcompete native and sport fish

## The Ugly

- Riparian community severely limited by rural land conversion and urbanization
- Channelization in downtown reach reduces structural resiliency of streambed
- Yampa River fails to meet water quality temperature standards in many years

# Long-term Impacts of Aggregate Mining

River channelized in embankments altering shape, connectivity, sedimentation, and riparian condition.



# Reduced Connection to Floodplain & Landscape

Buildings, paved  
surfaces, and levee-like  
embankments, i.e.  
roads and railways  
prevent flow of water,  
sediment, species  
migration





# Loss of Native Riparian Vegetation

Loss of native riparian vegetation due to development and agricultural and industrial uses affects aquatic and riparian habitat, channel stabilization and morphology, water temperature, and filtering of pollutants to water quality



# Reduced Stability and Resilience

Encroachment in the channel migration zone, engineered in-stream structures, and bank armoring degrade river's ability to move and adjust, to transport water and sediment, and to recover from severe disturbance, such as large flood or wildfire.





# Non-Native Species Are Biological Stressors

Invasive and exotic aquatic species are a concern throughout particularly northern pike.





# Warm Temperatures Remain a Mystery

Temperature is impaired compared to State standards throughout but the causes/stressors are not clear.



# Planning Steps

May  
2017

November  
2017

December  
2017

February  
2018

April  
2018

**Community  
Engagement  
Strategy &  
Plan Goals**

**Yampa River  
Health  
Assessment**

**Management  
Objectives  
and Targets**

**Alternative  
Actions**

**Implementation  
Strategy**



# Preliminary Management Objectives

1. Preserve and enhance areas of natural riparian vegetation and wetlands
2. Promote a self-sustaining sport fishery
3. Protect native fish populations from further decline and promote range expansion where possible
4. Maintain and improve floodplain connectivity above and below downtown
5. Maintain the natural flow regime to protect many aspects of river health
6. Protect undeveloped areas and natural conditions in the upper watershed

# Types of Management Actions

## Land & Stream Restoration

Channel restoration

Riparian restoration

Wetland restoration

Floodplain  
reconnection

Exotic/nuisance  
species control

## Water Management

Permanent dedication  
of water rights for river  
health

Long-term water leases  
(5+years)

Short-term water  
leases (annual)

Non-diversion  
agreements & other  
flexible/informal  
arrangements

## Land Use Planning

Incentive programs

Open space acquisition

Conservation  
easements

Zoning, floodplain, and  
setback ordinances

Water conservation  
measures

## Infrastructure Improvements

Nature-based/green  
infrastructure  
techniques

Stormwater  
management

Ditch lining

Removing in-stream  
obstructions

Reservoir/outlet  
improvements

## Education & Outreach

Public events

Field trips

Outreach to elected  
officials

Web-based materials

Citizen advisory  
committee

Monitoring and  
evaluation program

# Project Schedule

Yampa River Health Assessment &  
Streamflow Management Plan

<http://steamboatsprings.net/yampariver>

## 1. Advisory Committee and Objectives

## 2. Community Engagement Plan

## 3. River Health Assessment

## 4. Objectives and Targets

## 5. Water Management Strategies

## 6. Restoration Project Opportunities

## 7. Final Report and Presentation

Technical  
Report

Technical  
Report

Technical  
Report

Technical  
Report

Final  
Plan

1

2

3

4

5

6



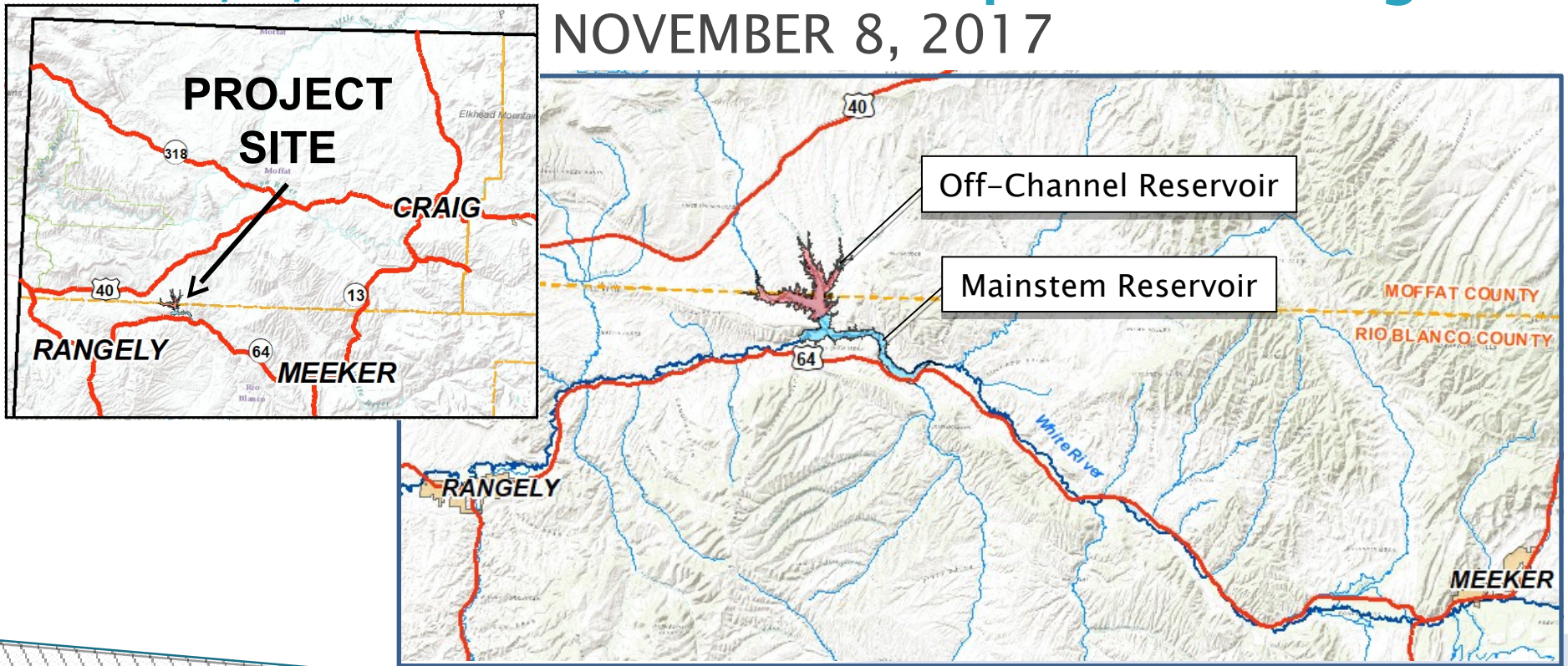
Advisory Committee Meetings

Community Workshops



# White River Storage Project W/Y/G Basin Roundtable Update Meeting

NOVEMBER 8, 2017



**W. W. WHEELER**  
& ASSOCIATES, INC.

Water Resources Engineers



**EIS** | A PATH TO VICTORY





# Agenda

- ▶ Summary of the White River Storage Feasibility Study  
*(2013 – March 2015)*
- ▶ Summary of work completed following the Feasibility Study  
*(March 2015 – June 2017)*
- ▶ White River Storage Project Phase 2A Work Plan  
*(June 2017 – September 2018)*
- ▶ Preliminary Engineering Results
- ▶ BRT Basin Implementation Plan (BIP) Phase III Modeling Update of Wolf Creek Reservoir (Information from Wilson Water Group)
- ▶ Next Steps, Comments, Questions, and Concerns



# White River Feasibility Study Summary

## Key Project Tasks:

- ▶ Purpose & Need Evaluation
- ▶ Map Study for Reservoir Location
- ▶ Course Screening of Alternatives
- ▶ Feasibility Designs & Costs for 3 Sites
- ▶ Alternative Evaluation & Selection
- ▶ Development of a Finance Plan
- ▶ Filed a 2014 Water Right

## STAKEHOLDER MEETINGS INCLUDED:

- ▶ Public Workshop Meetings (7)
- ▶ Y/W/G Roundtable Meetings (5)
- ▶ Other Stakeholder Meetings (50)





# White River Feasibility Study Summary

## PURPOSE & NEED

### ► Future Water Demands – Harvey Economics

	Near-Term (through 2030) (acre-feet)	Intermediate-Term (through 2045) (acre-feet)	Long-Term (through 2065) (acre-feet)
Municipal and Industrial (M&I)	1,050 – 2,100	1,250 – 2,500	1,600 – 3,150
Natural Gas	0	500	3,500
Oil Shale	0	3,500 – 17,600	8,500 – 42,300
Recreation	Recreation Design Criteria		
Environmental	3,000 – 42,000	3,000 – 42,000	3,000 – 42,000
Other	?	?	?
TOTAL	4,050 – 44,100	8,250 – 62,600	16,600 – 90,950

**Note:** The Energy Demands from this study are being used in the BIP Phase III Modeling of the White River by Wilson Water Group.

### ► Recreation Design Criteria:

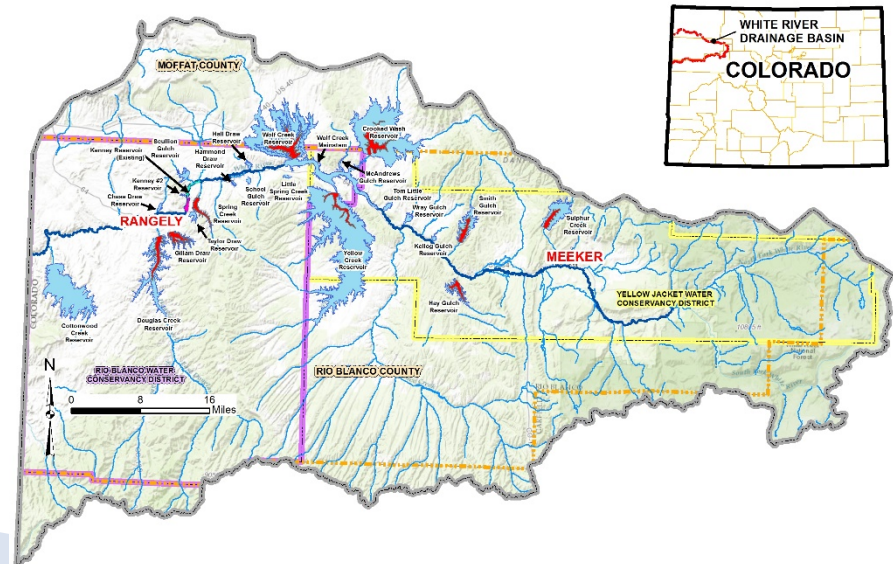
- A minimum of 700 to 1,500 acres of surface area;
- An elongated shape;
- Minimum depth of 50 feet in some areas of the lake;
- Variable bottom shelving;
- Interesting and variable lakeside topography;
- Good road access for visitors with boats and other equipment.



# White River Feasibility Study Summary

## MAP STUDY FOR RESERVOIR LOCATION

- ▶ 23 Initial New Reservoir Sites Identified in the White River Basin
- ▶ Two Reservoir Sizes based on 2065 Demands
  - 20,000 acre-feet
  - 90,000 acre-feet
- ▶ Other Alternatives:
  - Taylor Draw Dam Enlargement → Significant 404 permitting concerns
  - Dredging Kenney Reservoir → Economically Unfeasible





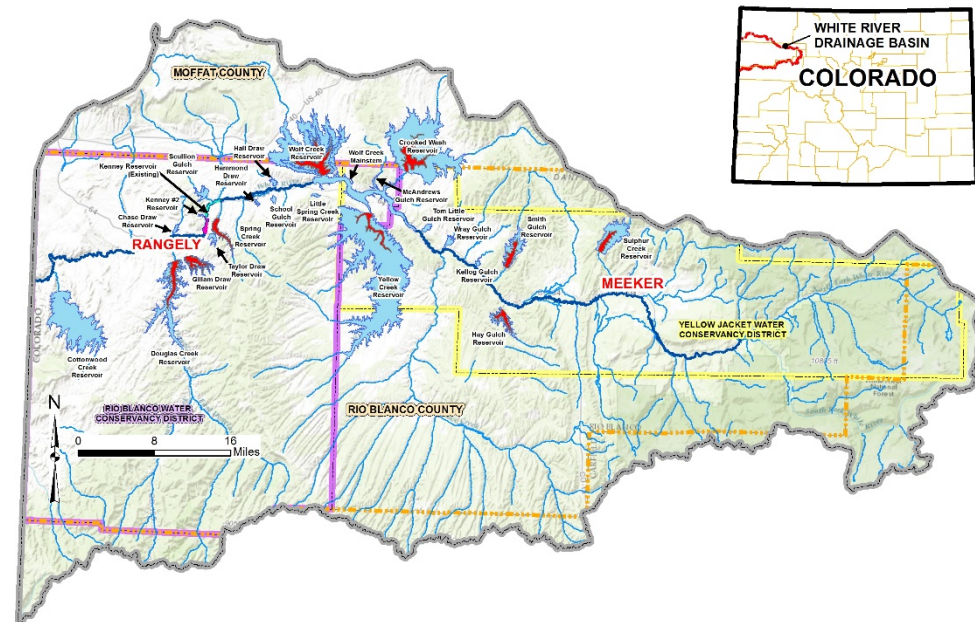


# White River Feasibility Study Summary

## COURSE SCREENING

- ▶ Preliminary Screening for Reservoir Sites based on:
  - Maximum Storage Possible > 20,000 Acre-Feet
  - Recreation Surface Area > 700 Acres
  - Location
- ▶ Secondary Coarse Screening:
  - Environmental Impacts (Using National Wetland Inventory)
  - Infrastructure Impacts (Roads & Energy)
  - Property Impacts
  - Within the RBWCD Service Area

*Engineering Evaluations on:*  
*Gillam Draw*  
*Spring Creek*  
*Wolf Creek (off-channel)*

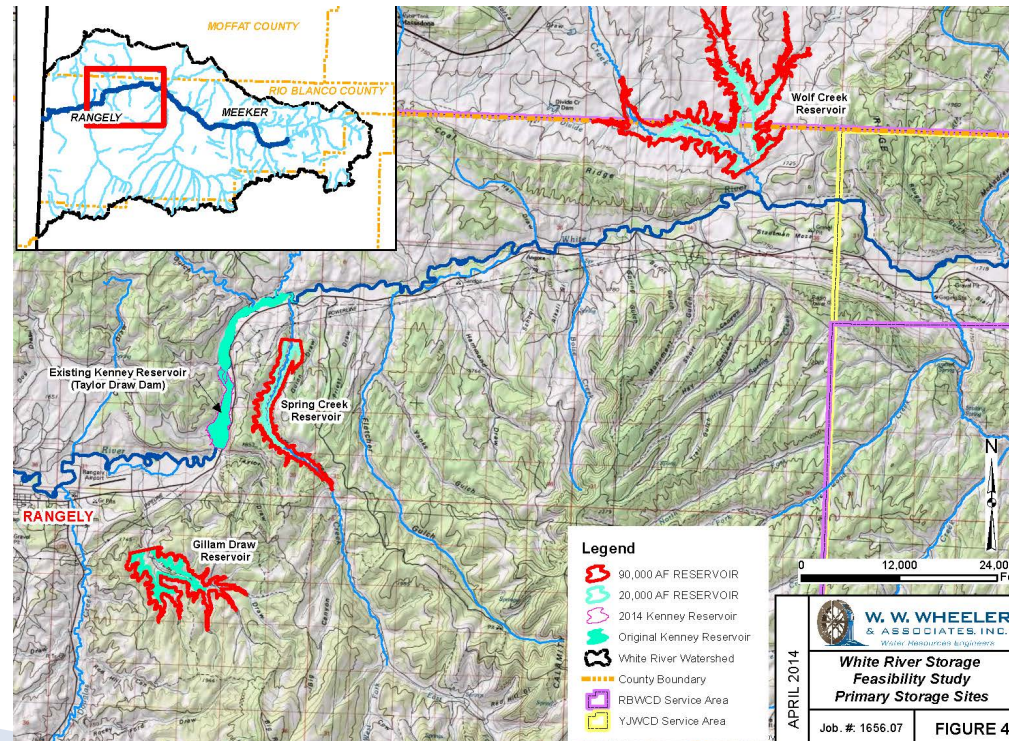




# White River Feasibility Study Summary

## FEASIBILITY DESIGNS

- ▶ For Wolf Creek Off-Channel, Gillam Draw, and Spring Creek
  - Feasibility Designs
    - ◻ Spillway Locations & Layout
  - Feasibility Reservoir Operations
    - ◻ Fill line locations
  - Constraint Evaluations
    - ◻ Geology
    - ◻ Environmental – Habitat and wetlands
    - ◻ Cultural Resource Impacts
  - Preliminary Costs





# White River Feasibility Study Summary

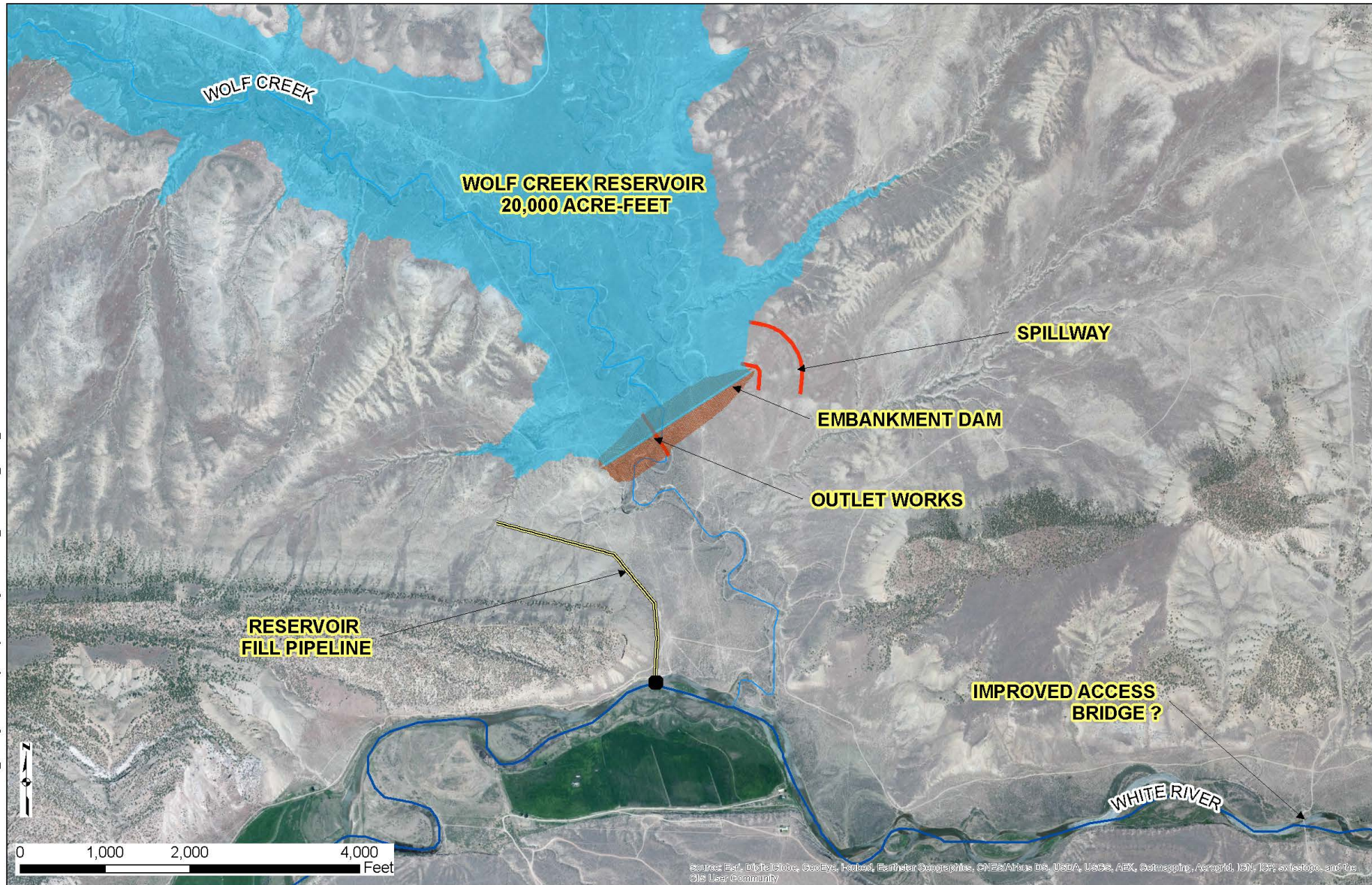
## ALTERNATIVE EVALUATION

- ▶ Selected Site → **WOLF CREEK OFF-CHANNEL** based on:
  - Most favorable Capital Costs
  - Most favorable pumping conditions for the O&M Costs
  - No identified fatal flaws (geologic, habitat, or wetlands)
  - Recreation access for Rio Blanco and Moffat County
  - Dam site has additional capacity to increase storage in the future, if needed.
- ▶ Alternative Site → **WOLF CREEK MAINSTEM**
  - Significantly lower operations costs (no pumping)
  - Maybe feasible with Practicability Test → Could be the least environmentally damaging, practicable alternative.
- ▶ Secondary Alternative Site → **SPRING CREEK**  
(IF A FATAL FLAW IS IDENTIFIED AT WOLF CREEK )
  - ▶ *It is not recommended to proceed with the Gillam Draw Site primarily due to a fault located within the dam axis and oil & gas well impacts observed during the site visit.*



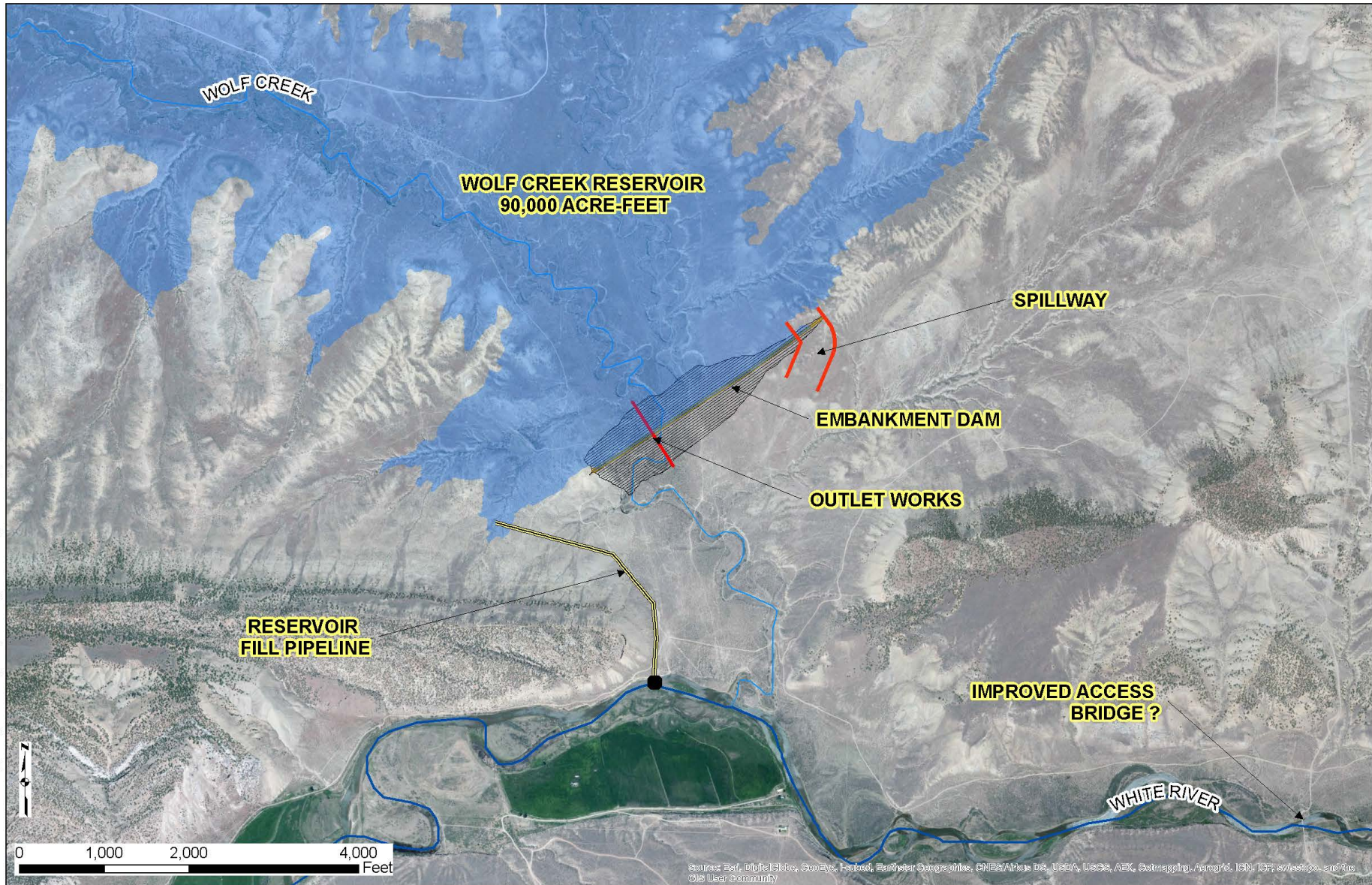
# White River Feasibility Study Summary

## OFF-CHANNEL WOLF CREEK DAM – 20K ACRE-FEET





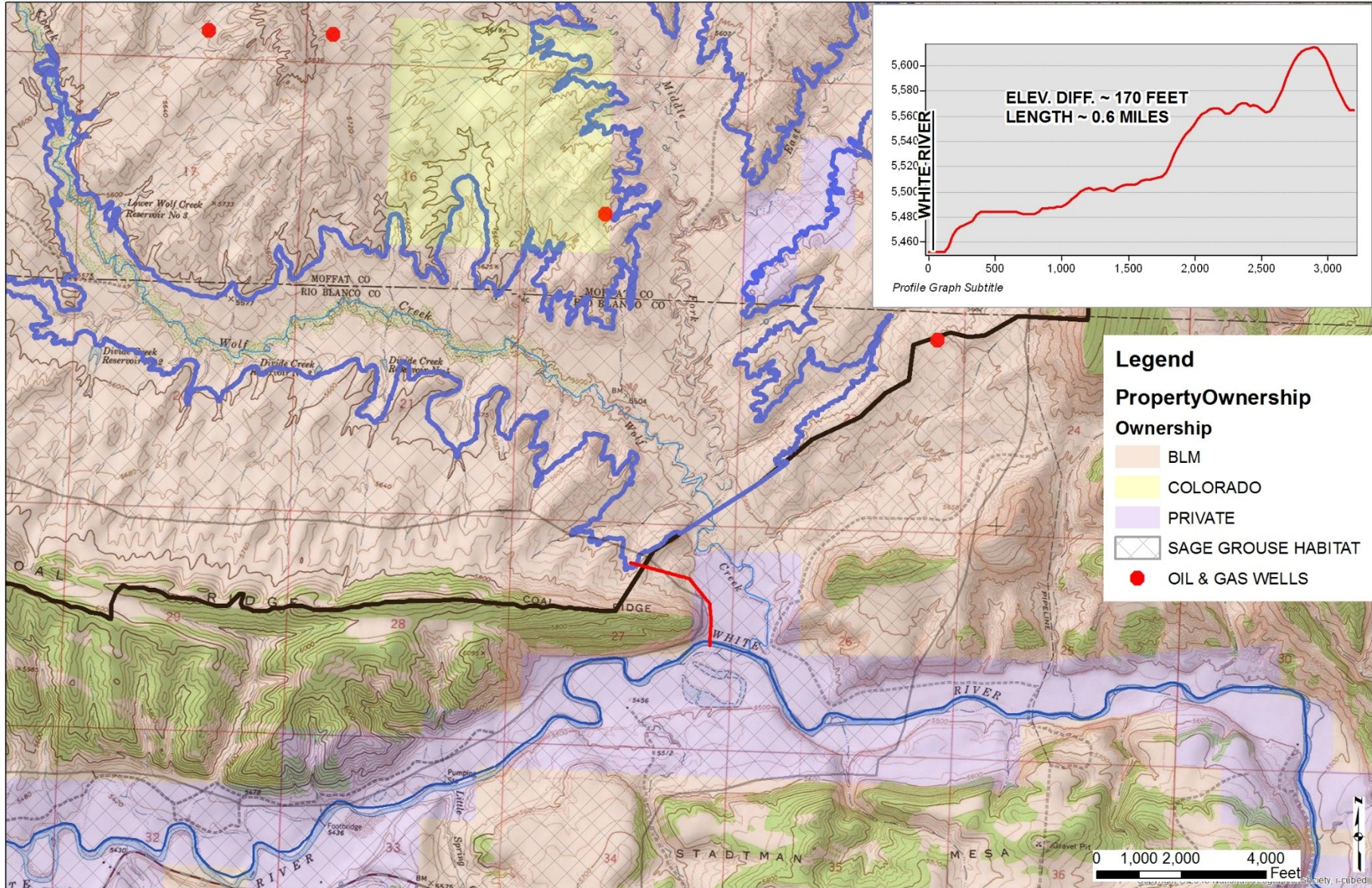
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# White River Feasibility Study Summary

## OFF-CHANNEL WOLF CREEK DAM – PUMP STATION





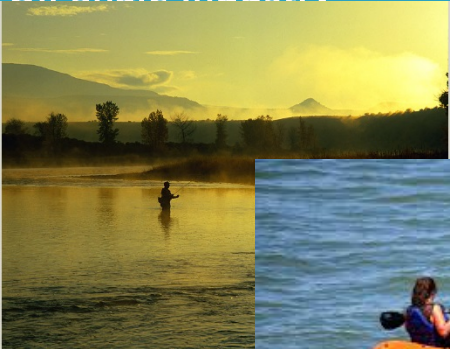


# White River Feasibility Study Summary

## BENEFITS OF WOLF CREEK RESERVOIR

Beneficiaries	Benefits			
	Recreation	Water Supply	Hydroelectric Generation	Environmental
Rangely	X	X		
Meeker	X			
Rio Blanco County	X			
Moffat County	X			
Rio Blanco Water Conservancy District	X	X	X	
Agricultural Water Users		X		
Oil and Gas Industry		X		
Oil Shale Industry		X		

Program



# White River Feasibility Study Summary

## FINANCIAL PLAN

### Additional Sales Tax Revenue for Rio Blanco and Moffat County Jurisdictions from the Wolf Creek Project

	Wolf Creek 20KAF					
	Project Construction (one time) *	Recreational Spending (annual)		Recreational Spending (annual)		
Rangely	\$286,000	\$77,928	\$168,970	\$509,080	\$99,645	\$216,060
Meeker	\$286,000	\$77,928	\$168,970	\$509,080	\$99,645	\$216,060
Rio Blanco County	\$245,000	\$66,795	\$144,832	\$436,100	\$85,410	\$185,195
Craig	\$75,000	\$25,333	\$54,930	\$133,500	\$32,000	\$69,386
Moffat County	\$37,000	\$12,667	\$27,465	\$65,860	\$16,000	\$34,693
State of Colorado	\$4.4M	\$272,600	\$591,079	\$7.7M	\$350,900	\$760,856

**Total Annual Tax Revenues: \$1.1 to \$1.4 million** *Values are in 2014 dollars.*





# Work After the White River Feasibility Study (prior to Phase 2A Study)

## Key Project Tasks:

- ▶ Work towards finalizing 2014 Water Right
- ▶ Meetings & Coordination for Phase 2A Study
- ▶ Involvement with the Basin Implementation Plan modeling of the White River and Programmatic Biological Opinion (PBO)



# White River Storage Project (Phase 2A) Objective

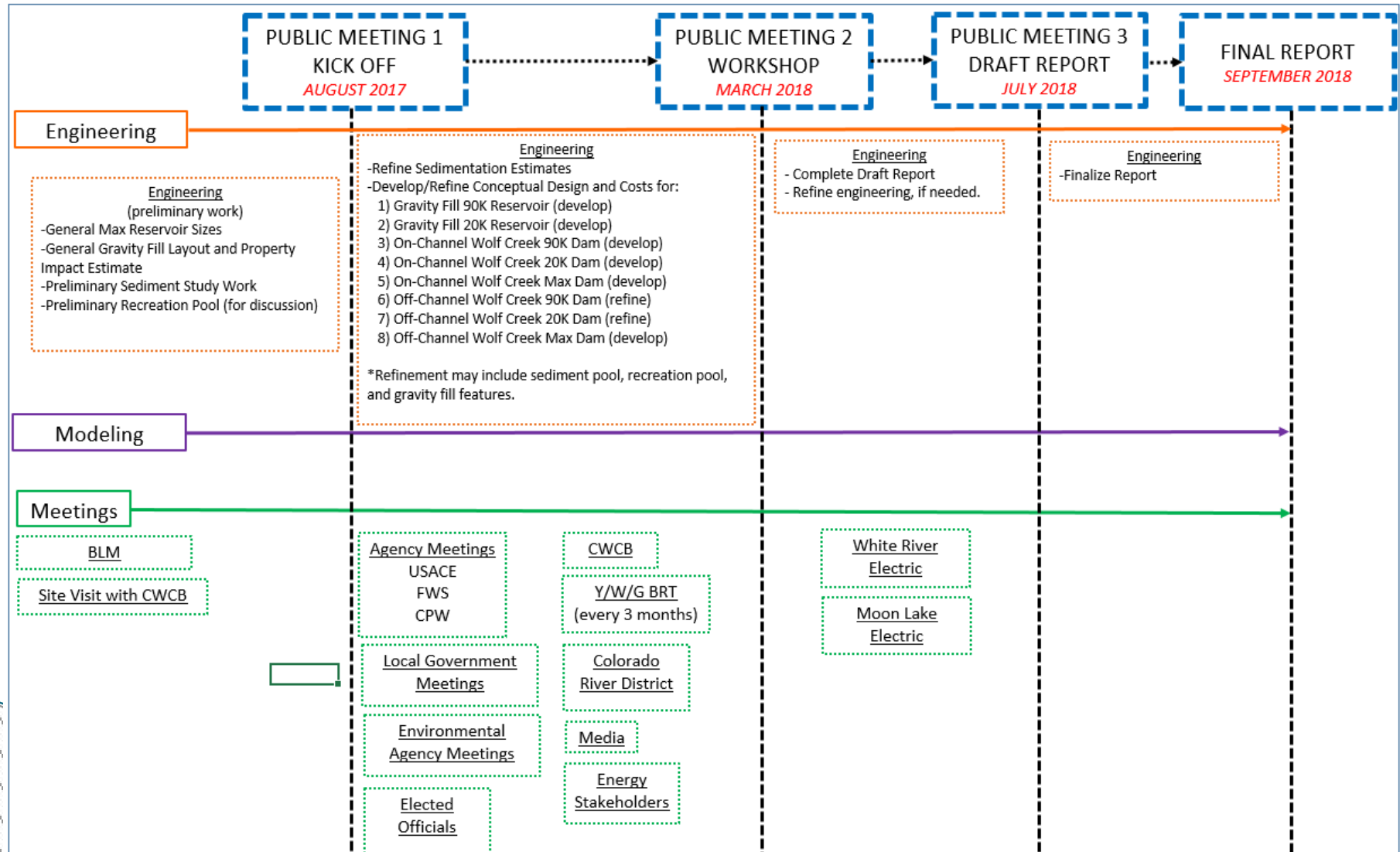
**The objective of this Phase 2A study is to continue to refine the Wolf Creek alternatives to meet the many important water conservation needs within the Rio Blanco Water Conservancy District.**

**Our goal is to initiate project permitting in 2018**



# White River Storage Project (Phase 2A)

## Milestones & Work Plan





# White River Storage Project (Phase 2A) Milestones & Work Plan

► **Some of the key stakeholder update meetings that are anticipated include meetings**

- The BLM
- White River Electric Association
- The Colorado River District
- The U.S. Fish & Wildlife Service
- Colorado Parks and Wildlife
- The Yampa/White/Green Basin Roundtable
- Colorado Water Conservation Board
- Moon Lake Electric Association
- Rio Blanco County
- Moffat County
- Town of Rangely
- Town of Meeker
- City of Craig
- Upper Colorado River Endangered Fish Recovery Program (Implementation Committee)
- Yellow Jack Water Conservancy District
- Bureau of Reclamation
- Western Area Power Administration
- State legislators
- ~~Moffat County Land Use Board~~
- Nature Conservancy District
- White River Conservation District
- Douglas Creek Conservation District
- Colorado Department of Natural Resources and the Governor's office
- Congressional delegation
- Colorado Water Congress members
- Colorado River Water Users Association members
- Club 20
- AGNC (Associated Governments of Northern Colorado)
- Mesa and Garfield Counties
- Media and Editorial boards (Daily Sentinel, Denver Post)
- NW Colorado newspaper and radio reporters
- Area Chambers of Commerce and Economic Development organizations
- Various environmental organizations
- Other identified stakeholders
- Additional civic groups
- Additional energy development partners

**...ANYONE ELSE?**





# White River Storage Project (Phase 2A) Milestones & Work Plan

## ENGINEERING TASKS:

- ▶ **Primary Alternative Refinements:**
  - On-Channel Wolf Creek Dam Development of Feasibility Design & Costs
    - For 90K Acre-Foot, 20K Acre-foot, and Maximum Reservoir Size
  - Off-Channel Wolf Creek Dam Refinements
    - Gravity Fill Options for the 90K and 20K Acre-Foot Reservoirs
    - Maximum Reservoir Size Development
- ▶ **Refine Sedimentation Estimates & Options**
- ▶ **Continued involvement with the White River Modeling and Management Plan**



# White River Storage Project (Phase 2A)

## Preliminary Engineering

### WOLF CREEK OFF-CHANNEL – GRAVITY FILL

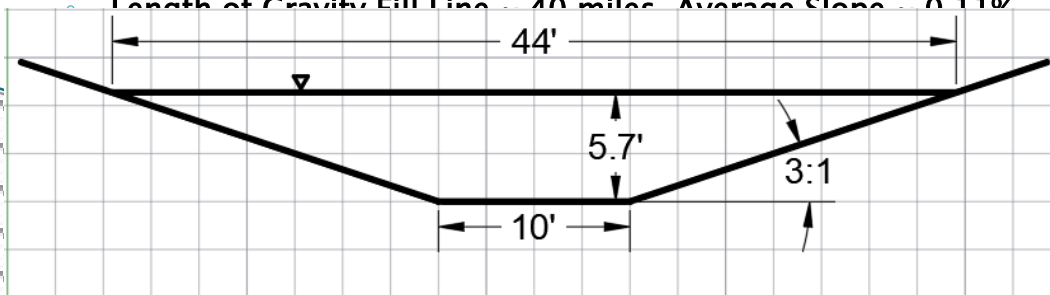
Pump Costs: Reservoir (acre-feet)	Construction Costs	Annual O&M Costs
20K	\$5.5M	\$260,000 (\$180K–\$400K)
90K	\$18.2M	\$640,000 (\$150K – \$1.1M)

*A gravity fill canal is being evaluated to see if it would minimize O&M and pumping costs.*

\$ in 2014 dollars.

### GRAVITY FILL PRELIMINARY DESIGN

- Preliminary alignment for the 90K acre-foot reservoir.
- Design Criteria assumed 400 cfs (consistent with pump station)
- Diversion is approximately 28.3 miles upstream of the Wolf Creek Confluence on the White River.
- Length of Gravity Fill Line – 40 miles. Average Slope – 0.11%



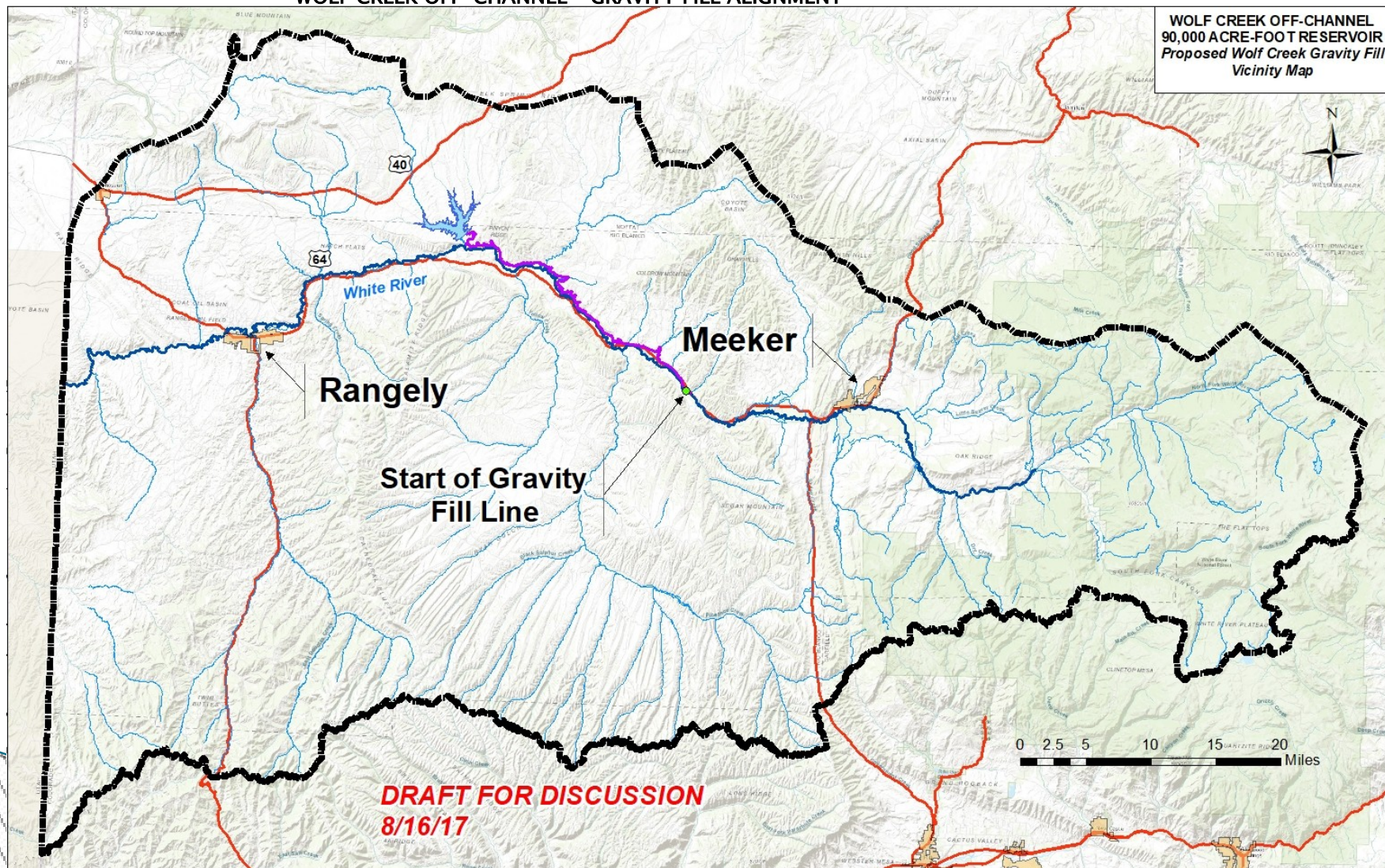
**THIS WORK IS PRELIMINARY AND SUBJECT TO FURTHER REVISION AND REFINEMENT.**





# White River Storage Project (Phase 2A) Preliminary Engineering

## WOLF CREEK OFF-CHANNEL - GRAVITY FILL ALIGNMENT



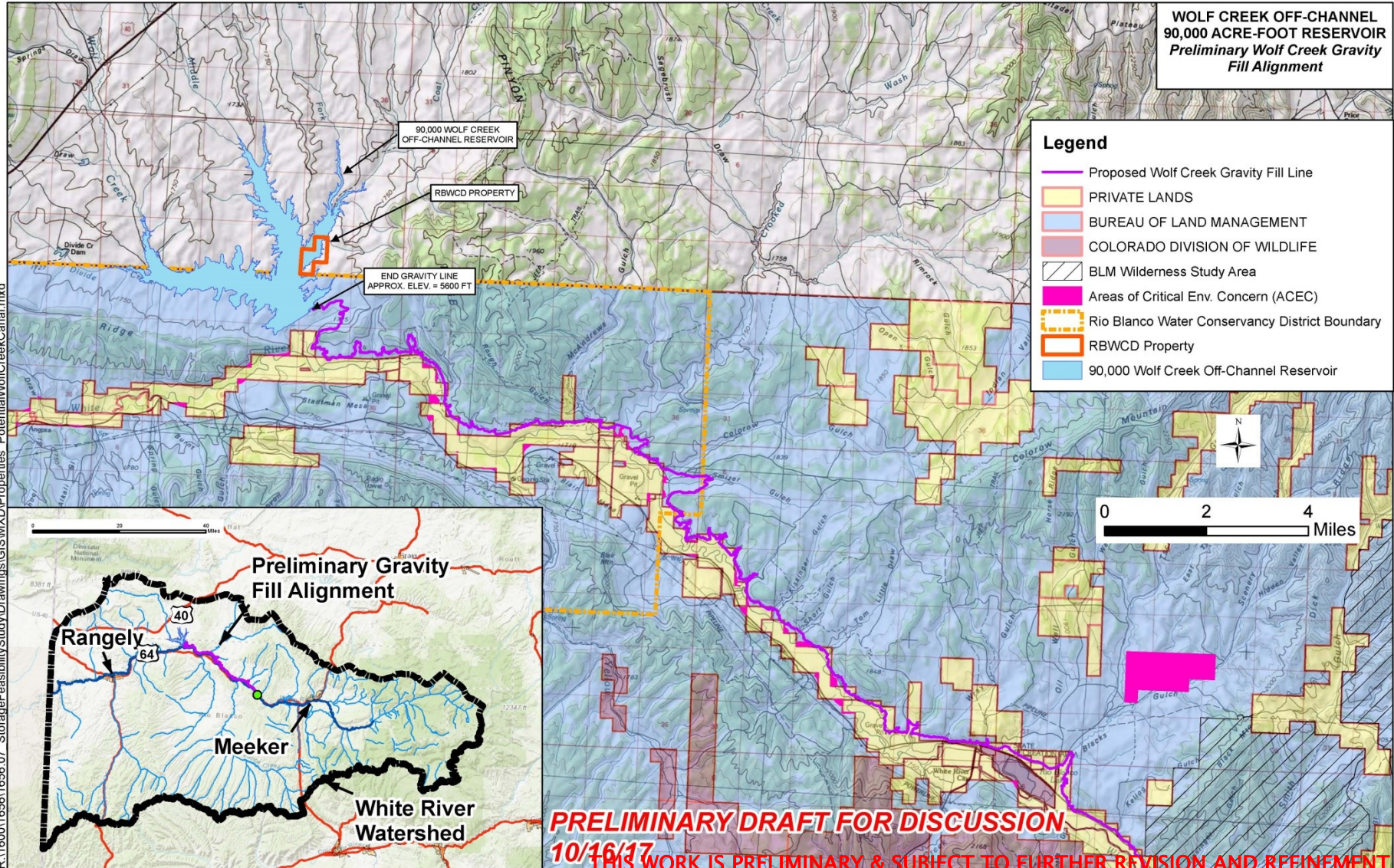
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# White River Storage Project (Phase 2A) Preliminary Engineering

## WOLF CREEK OFF-CHANNEL - GRAVITY FILL ALIGNMENT







# White River Storage Project (Phase 2A)

## Preliminary Engineering

### WOLF CREEK OFF-CHANNEL - GRAVITY FILL ALIGNMENT WITH SIPHONS

WOLF CREEK OFF-CHANNEL  
RESERVOIR  
Proposed Wolf Creek Gravity Fill  
Channel Segments

12 Siphons

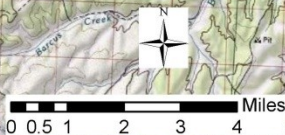
~60% of channel is not lined

~40% of channel is lined with geomembrane

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#### Legend

- Channel\_NOT\_Lined
- Lined\_Channel\_Geomembrane
- Siphons
- WC\_WaterLine\_90000AF
- White\_River



THIS WORK IS PRELIMINARY & SUBJECT TO FURTHER REVISION AND REFINEMENT.



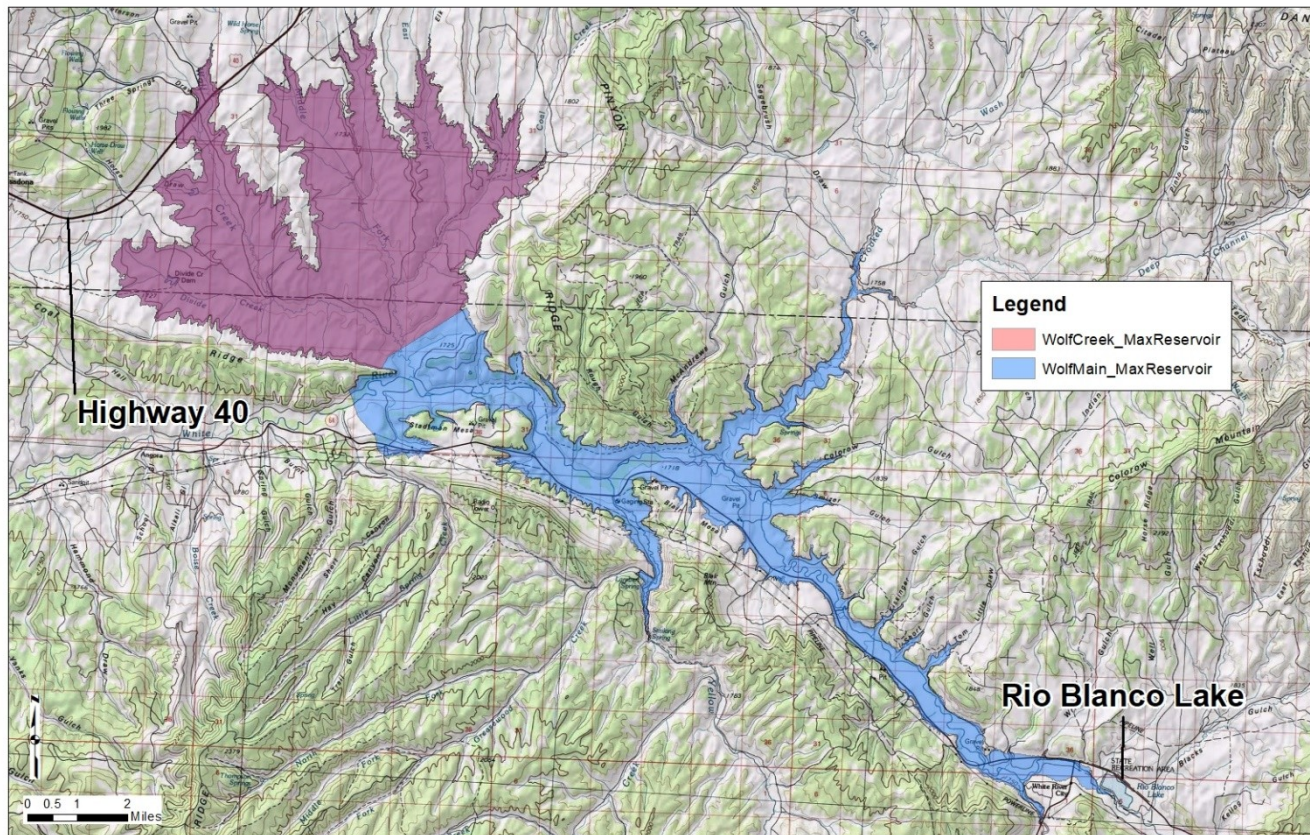


# White River Storage Project (Phase 2A)

## Preliminary Engineering

### MAXIMUM RESERVOIR SIZE

Max Reservoir Size (acre-feet)	
Off-Channel	On-Channel
1.58M	2.92M



THIS WORK IS PRELIMINARY & SUBJECT TO FURTHER REVISION AND REFINEMENT.





# White River Storage Project (Phase 2A)

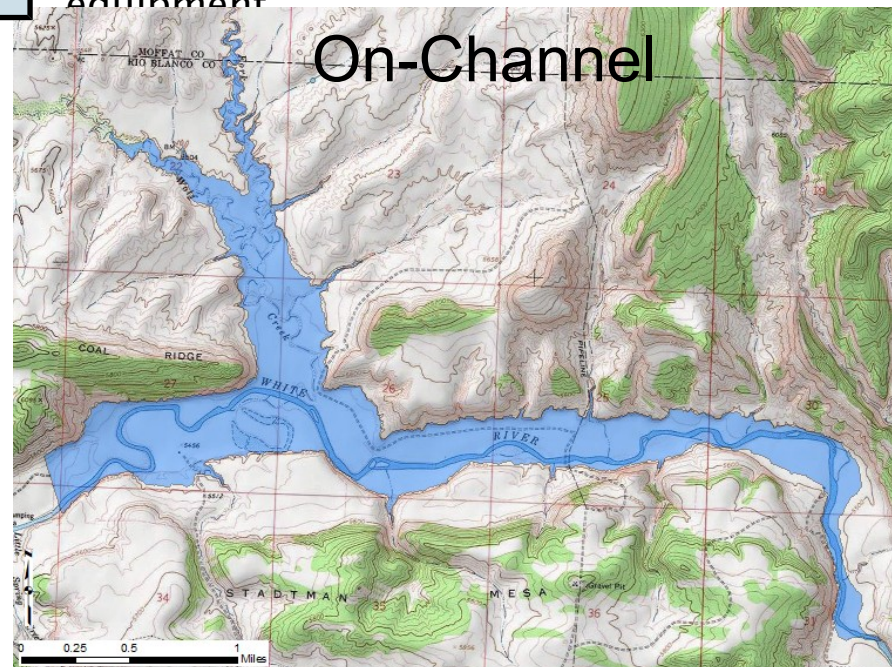
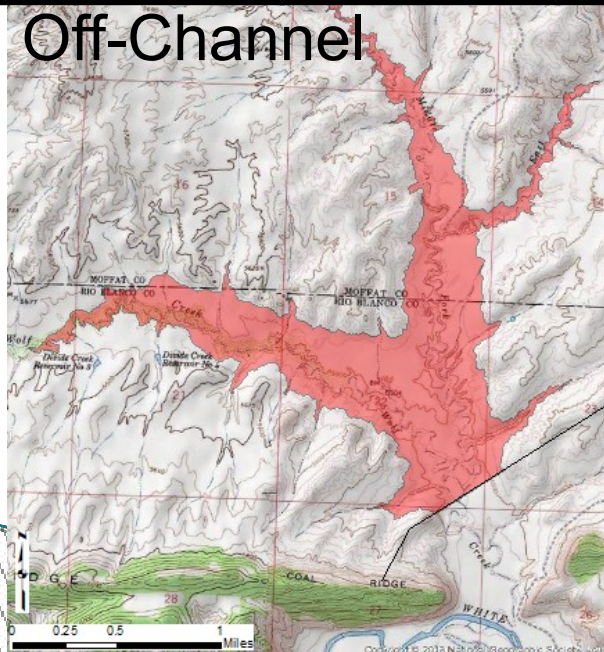
## Preliminary Engineering

### PRELIMINARY RECREATION POOL

	Off-Channel	Mainstem
Volume (acre-feet)	15,000	24,000
Maximum Depth (feet)	55	50
Surface Area (acres)	700	946

#### Recreation Design Criteria:

- A minimum of 700 to 1,500 acres of surface area;
- An elongated shape;
- Minimum depth of 50 feet in some areas of the lake;
- Variable bottom shelving;
- Interesting and variable lakeside topography;
- Good road access for visitors with boats and other equipment



**THIS WORK IS PRELIMINARY & SUBJECT TO FURTHER REVISION AND REFINEMENT.**





# White River Storage Project (Phase 2A)

## Preliminary Sedimentation Estimates

- ▶ Used various sources to estimate the loss of capacity due to sedimentation.
- ▶ Accounted for the storage losses over 50 years with a silt pool.

	Off-Channel	Mainstem
Annual Estimated Sedimentation (ac-ft/yr)	57	472
Silt Pool (ac-ft)	3,000	24,000

THIS WORK IS PRELIMINARY & SUBJECT TO FURTHER REVISION AND REFINEMENT.



# White River Storage Project (Phase 2A)

## Preliminary Engineering

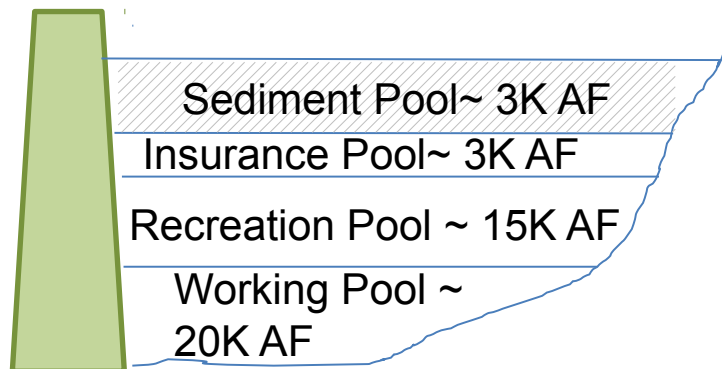
### ADDITIONAL POOLS FOR PROJECTS

Note: Recreation & Insurance pools are a one-time diversion.

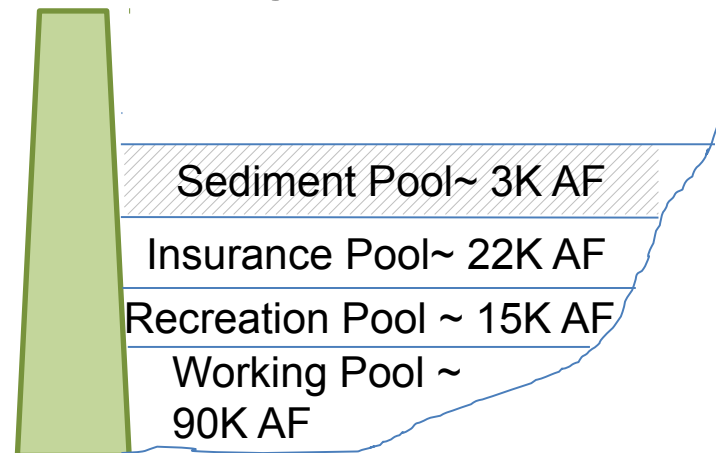
Note: Sediment pool is used to size dam, not actually diverted.

Off-Channel

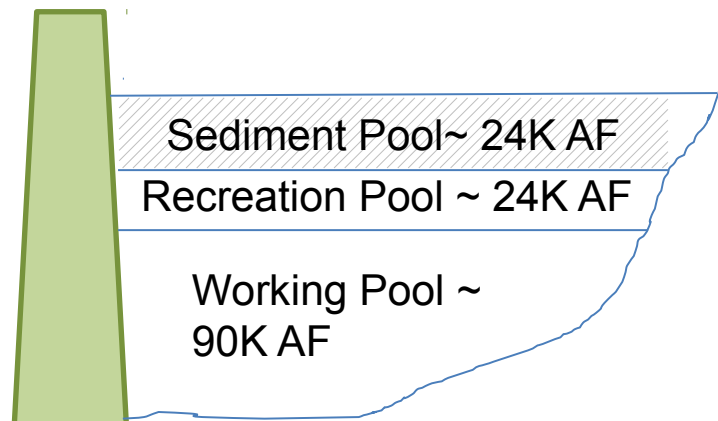
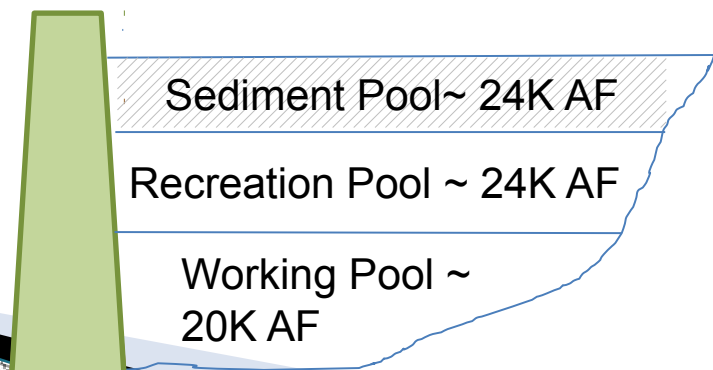
20K acre-foot  
“working pool”



90K acre-foot  
“working pool”



On-Channel



THIS WORK IS PRELIMINARY & SUBJECT TO FURTHER REVISION AND REFINEMENT.



# White River Storage Project (Phase 2A) Modeling Coordination

## BRT BIP Phase III

**White River modeling presented by Wilson Water Group on October 19, 2017**

What combination of IPPs best meets future consumptive and non-consumptive demands based on historical hydrology?

- ▶ 90,000 acre-feet Wolf Creek Reservoir (Off-Channel)

Does the IPP meet full demands?

- ▶ Future municipal and industrial consumptive demands are met.
- ▶ 300cfs flows at Watson are met more than 90% of the days year-round.
- ▶ There is a minor decrease in boatable days in June due to reservoir filling.

How resilient is the IPP under future climate conditions?

- ▶ Future municipal and industrial consumptive demands are met.
- ▶ Shortages to 300cfs flows at Watson under Hot and Dry climate conditions are similar to historical hydrology shortages without IPP (reservoir storage).
- ▶ Boatable days may be similar, but shift to earlier in the year.

How much additional storage is necessary to fully meet consumptive demands (current)?

- ▶ 30,000af additional storage to meet demands every year except 1977. (driest year in study period)
- ▶ 47,000af additional storage to meet full demand in 1977.

***Bottom Line – Storage is needed on the White River  
to meet future demands.***

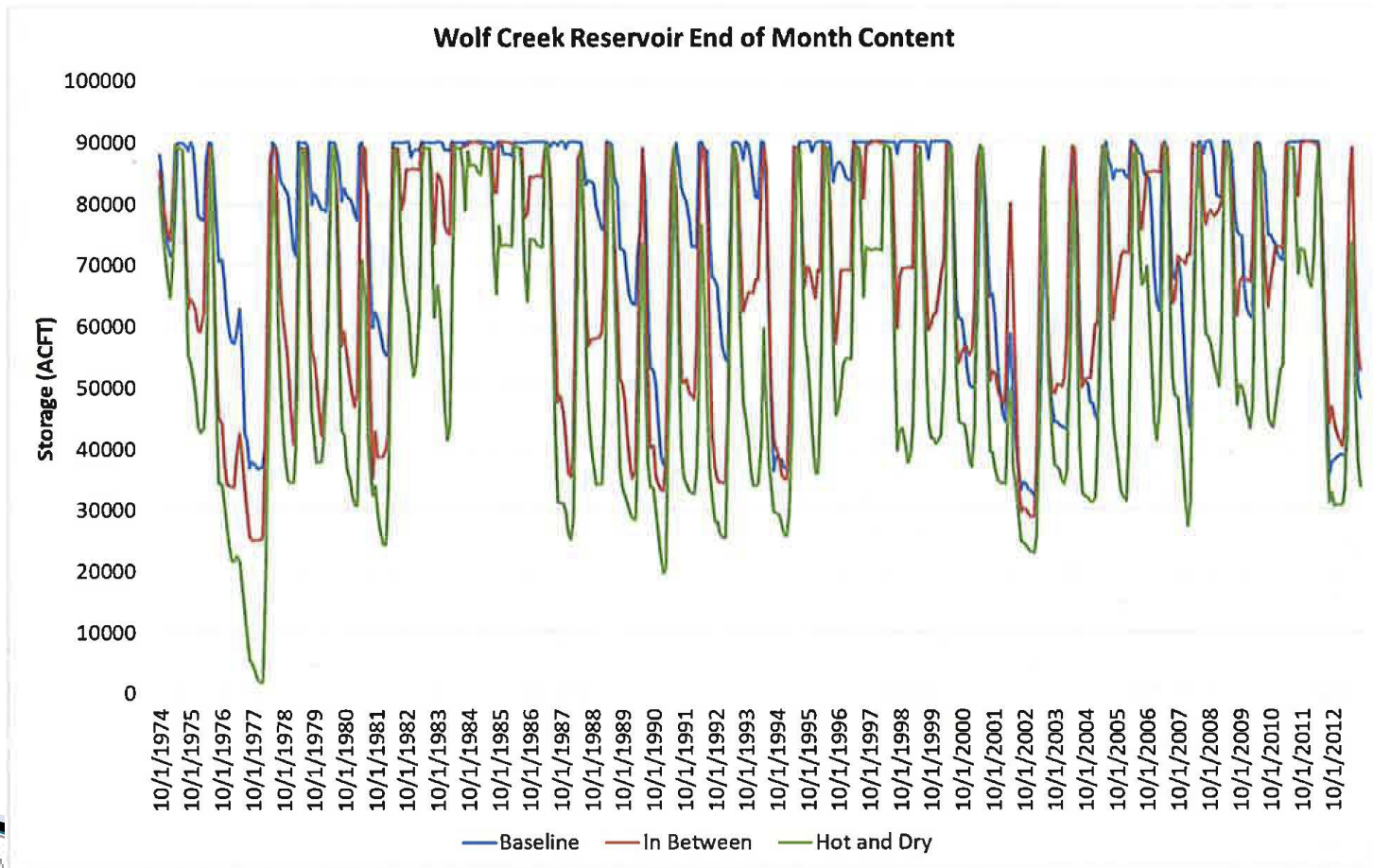
**THIS WORK IS PRELIMINARY & SUBJECT TO FURTHER REVISION AND REFINEMENT.**



# White River Storage Project (Phase 2A) Modeling Coordination

## BRT BIP Phase III

White River modeling presented by Wilson Water Group on October 19, 2017



THIS WORK IS PRELIMINARY & SUBJECT TO FURTHER REVISION AND  
REFINEMENT





# White River Storage Project (Phase 2A)

## SOME KEY COMMENTS FROM STAKEHOLDERS

- ▶ The study should include all impacts including (but not limited to):
  - Recreation Plan (Facilities, Campgrounds, Roads, etc.)
  - Construction Impacts (Borrow areas, etc.)
  
- ▶ Consider setting up a “Permitting Task Force” to improve the efficiency of the permitting process (“lean” process from CWCB) including:
  - US Fish and Wildlife Service
  - US Army Corps of Engineers
  - Environmental Protection Agency
  - Colorado Parks and Wildlife
  - Colorado Department of Health and Environment



# White River Storage Project Phase 2A Contributions

The following entities have been instrumental in keeping this project moving forward providing financial commitment and preliminary support for the studies. This project has many potential benefits for the local community, environmental community, and for the entire State of Colorado.

- ▶ Rio Blanco Water Conservancy District
- ▶ Rio Blanco County
- ▶ Town of Rangely
- ▶ Town of Meeker
- ▶ White/Yampa/Green Basin Roundtable
- ▶ Colorado Water Conservation Board





# White River Storage Project (Phase 2A) Questions or Comments ?

## ► Follow-up Comments after the Meeting:

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