Beaver Creek Watershed Level I Study

Project Meeting #5

Tuesday, April 24, 2018

Weston County NRD Office
1225 Washington Blvd.
Newcastle, WY 82701

WELCOME!!!

Watershed Meeting Topics

- Brief Watershed Study Introduction
- Current Status
- Surface Water and Water Storage Opportunities
- What's next?

- Wrap up
  - Question/Answer and Open House Style

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What is a watershed study?

The objective of a Watershed Study is to

- *Evaluate an individual watershed's existing conditions*

And from collaboration with landowners, stakeholders, and public outreach

- *Develop a Watershed Management and Rehabilitation Plan*
- *To identify projects that are eligible for funding that may improve or maintain watershed function and systems*

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Who is completing the study?

- Wyoming Water Development Office
  - *Funding and Project Management*
- Weston County Natural Resource District
  - *Project Sponsor*
- Olsson Associates and Steady Stream Hydrology
  - *Engineering Support*

Holistic Approach to Watershed Management

- Collect watershed information
- Document and map conditions
- Identify improvements
- Develop costs and funding options

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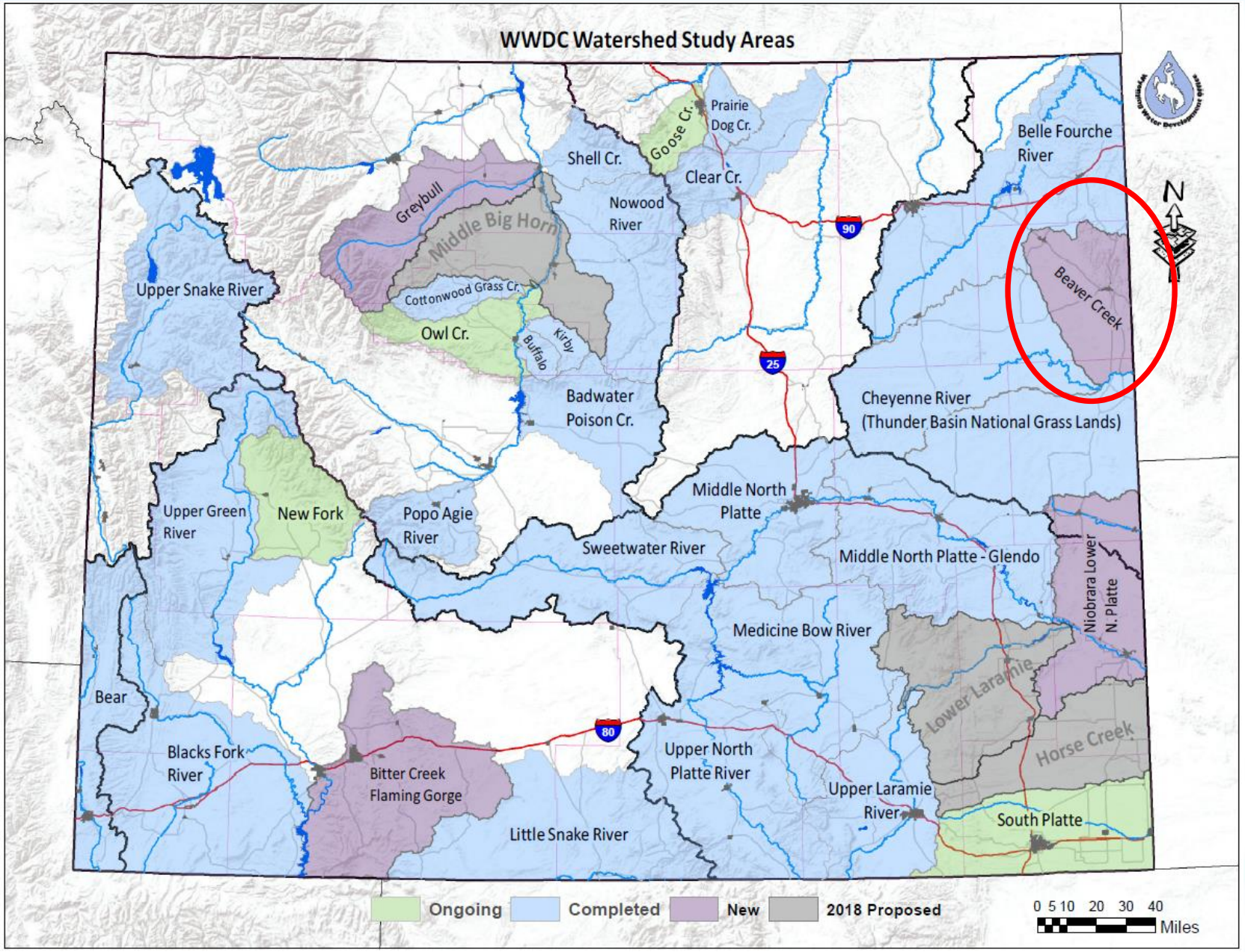

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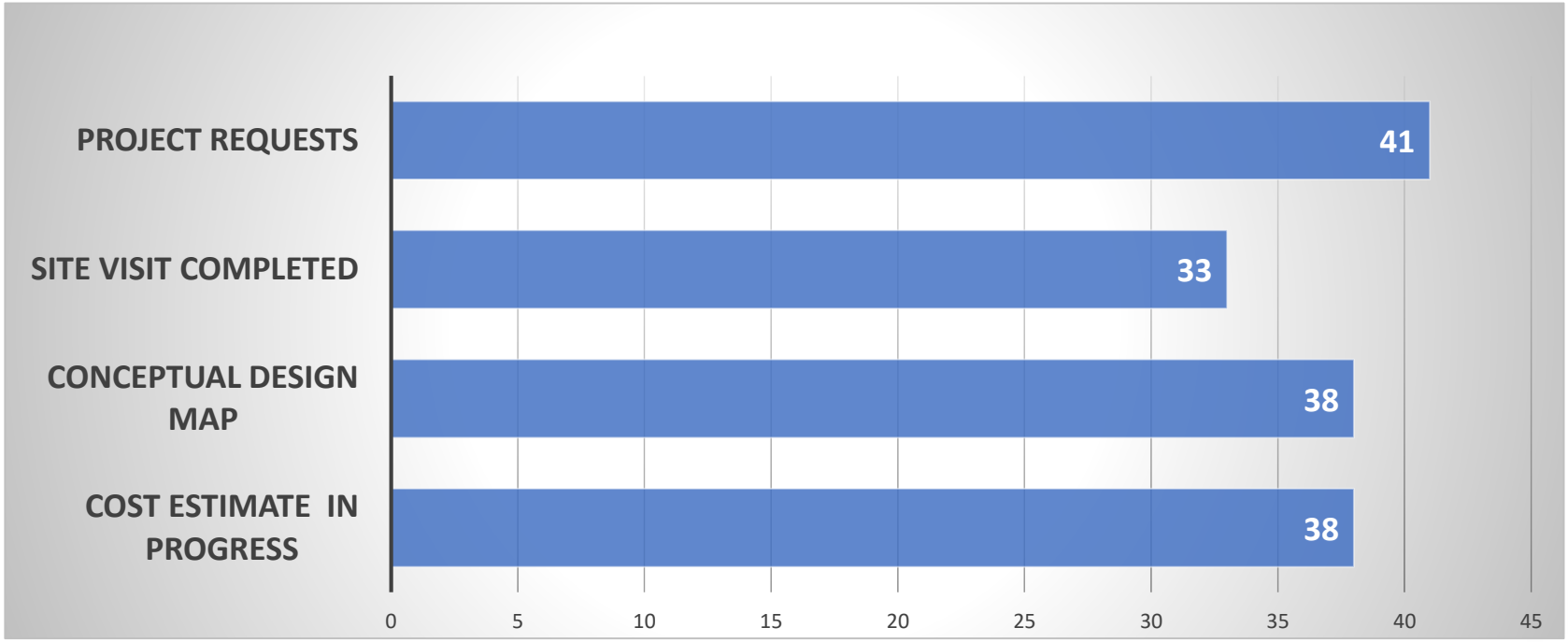
Current Tally of Project Evaluations



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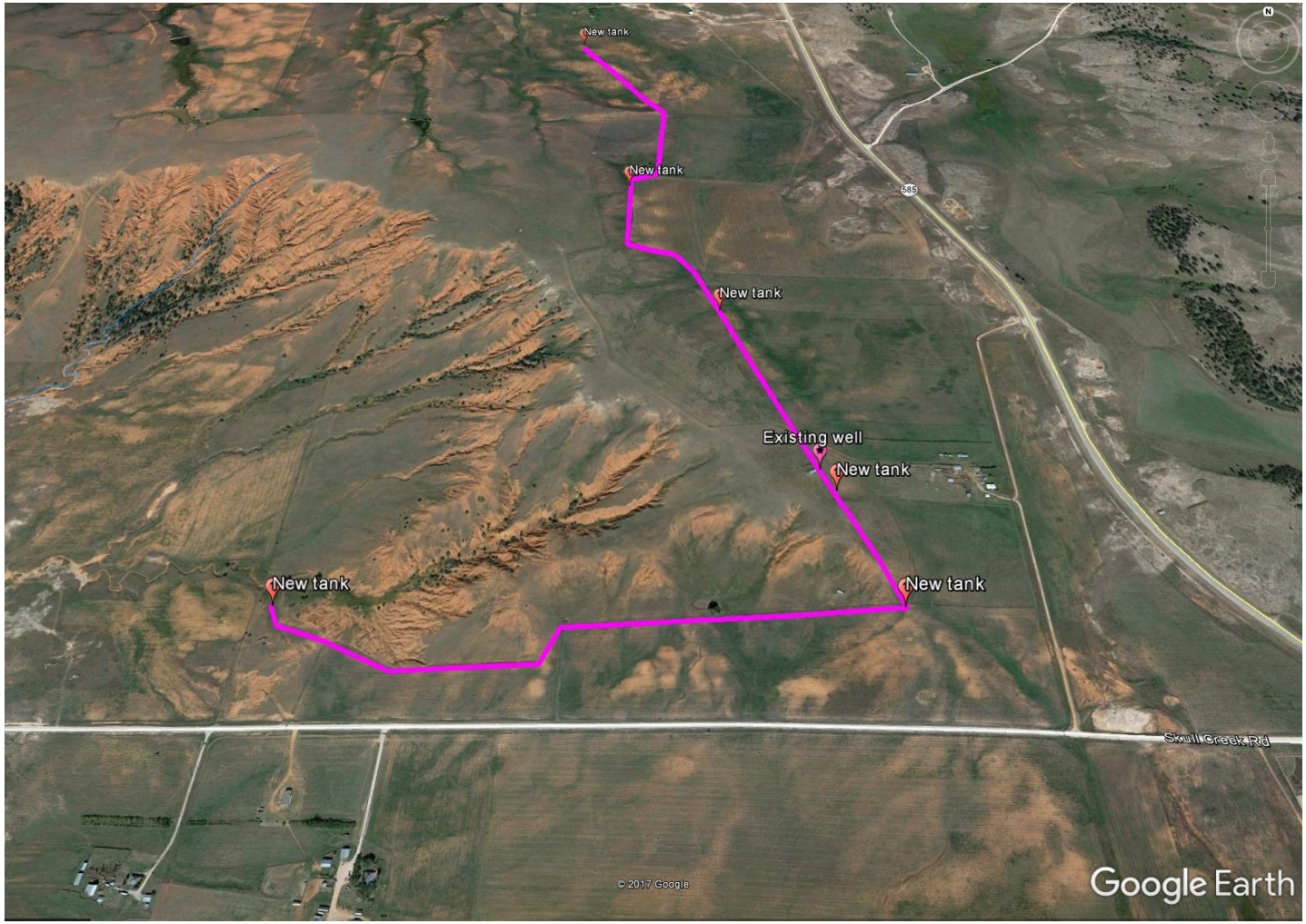
Site Visit and Conceptual Designs



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Cost Estimates – In Progress

ITEM	UNIT	QUANTITY	UNIT PRICE	TOTAL
Hay Field Irrigation				
Irrigation Pivot (approx 1000' radius)	LS			$-
Level Field Ditches	LF	6000		
Pipeline and Stock tanks				
1.5" pipeline	LF	1500	$3.00	$ 4,500.00
Bore 1.5" pipeline under highway	LF	100	$45.00	$ 4,500.00
Stock Tank	EA	1	$1,000.00	$ 1,000.00
Blacktail Creek Headgate/ pond?				
			SUBTOTAL	$ 10,000.00
			15% CONTINGENCIES	$ 1,500.00
			TOTAL	**$ 11,500.00**

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Goals of Storage Evaluation

Identify potential water storage sites that could provide agricultural, wildlife, flood control, recreational, and/or environmental benefits.

Site selection based on:

- ✓Available water
- ✓Previously identified sites
- ✓Sponsor suggested sites
- ✓Storage evaluation requests

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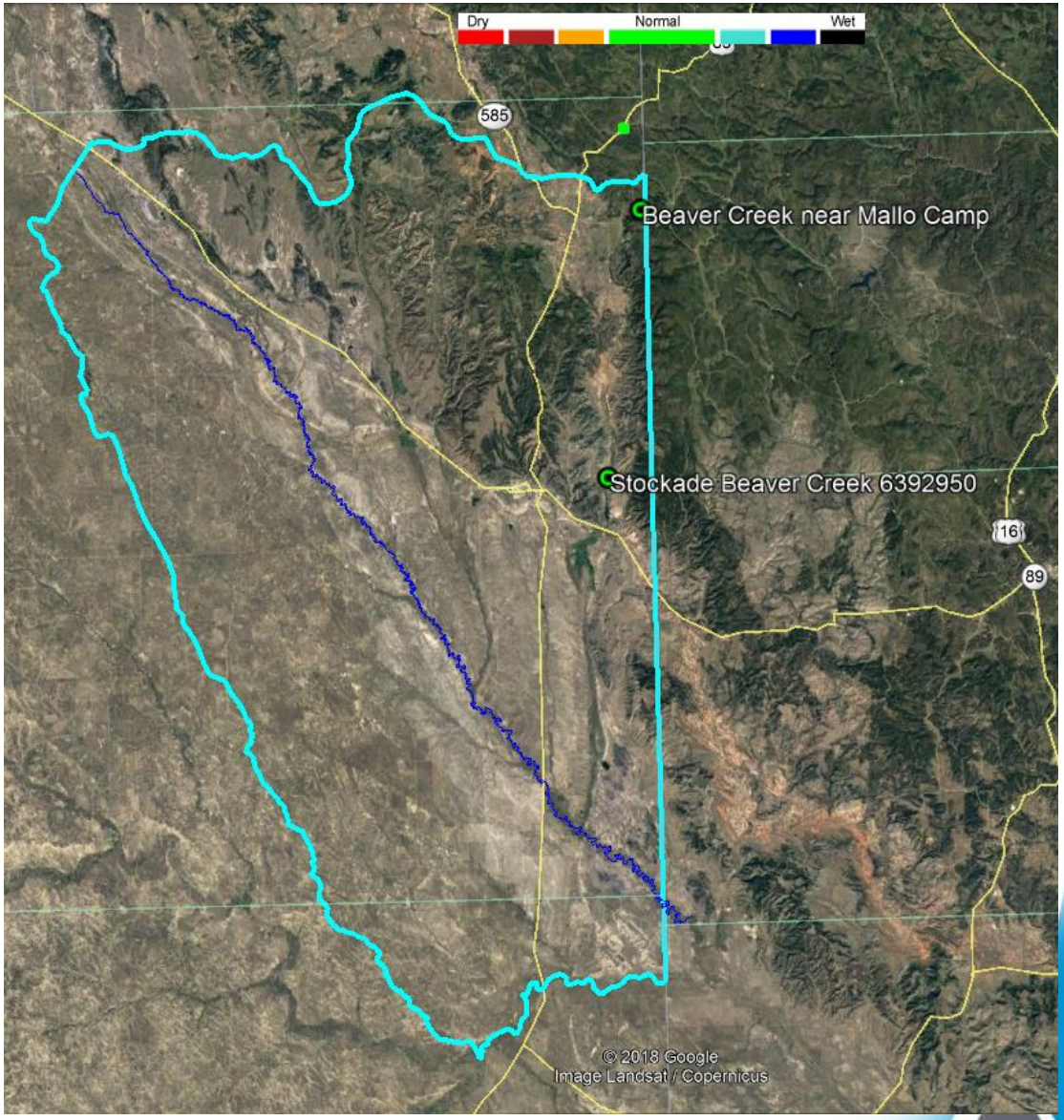
Hydrology

- Hydrology update underway: Northeast Wyoming River Basins Report
- Will provide surface water availability
- Anticipated May 2018
- 2 active gages



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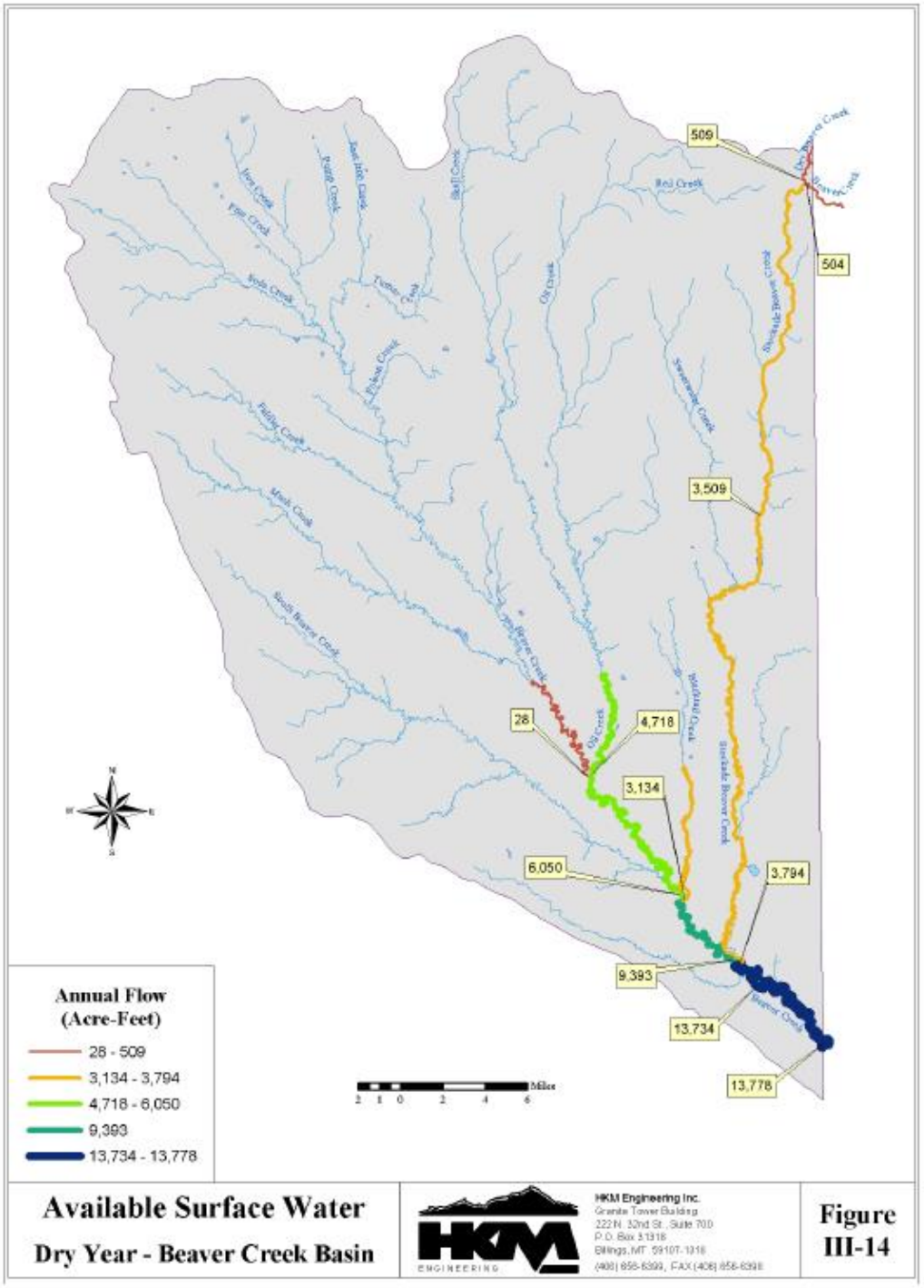
Surface Water Availability

- Dry year water availability from 2002 Northeast Wyoming River Basins Report
- Total annual surface water that flows from Beaver watershed:
  - 14,000 ac-ft in a dry year
  - 20,000 ac-ft in a normal year (14.5 ac-ft/mi^2)
  - 30,000 ac-ft in a wet year



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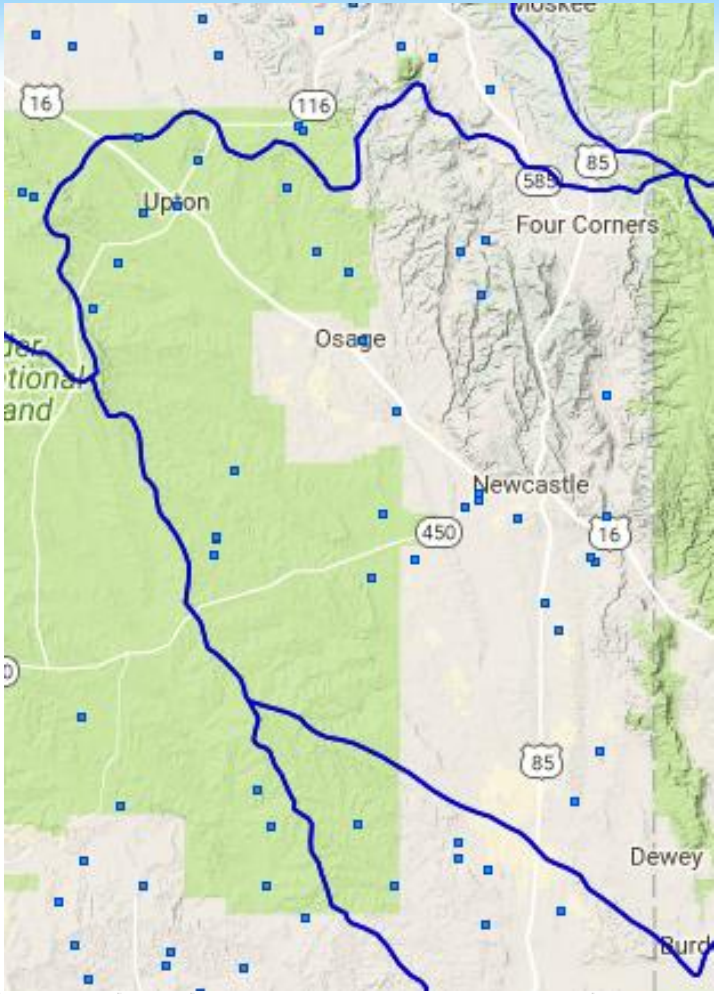
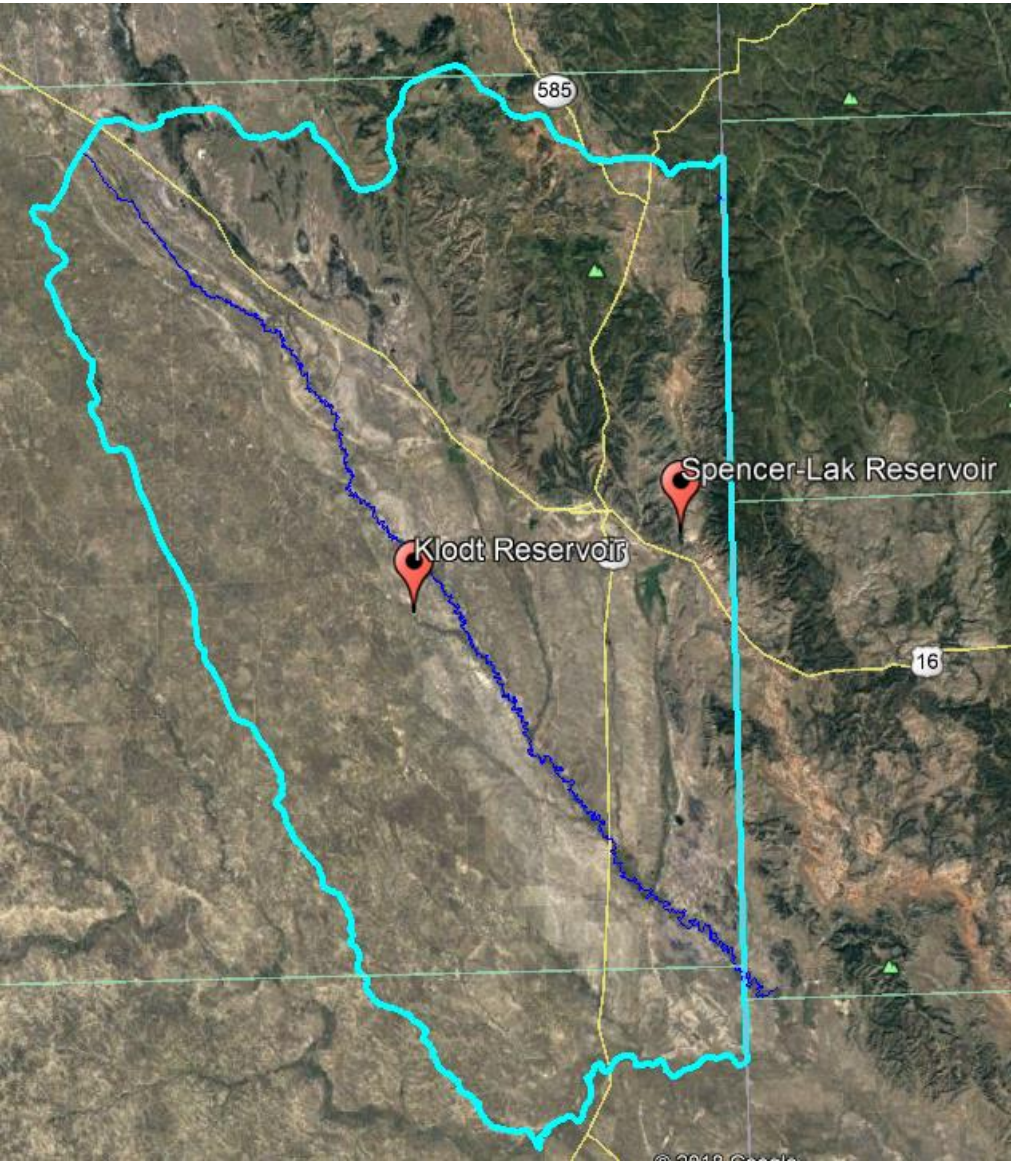
National Inventory of Dams



Name	Owner	County	State	River	Year Completed	Inspection Date
BIG DELANEY	MARK J. PIELOCH	WESTON	WY	WELL DRAW	1970	09/18/2012
LEO	GENEVIEVE AIMONETTO	WESTON	WY	PETE DRAW	1958	-
MICHAELS	MELVIN PERINO	WESTON	WY	MICHAELS DRAW	1950	04/09/2014
V. E. LISSOLO IRRIGATION	ELIZEBETH MILLET & WYO. STATE LAND OFF.	WESTON	WY	W PLUM OR BIG PLUM CREEK	1955	09/18/2012
ROSEAN	AGNES K. MORGAN	WESTON	WY	ROSEAN DRAW	1955	10/18/2010
SPENCER	TRUE RANCHES, INC. (TONY FERELLA)	WESTON	WY	STOCKADE BEAVER CREEK	1952	08/26/2013
HOWELL	CRAIG DEVENAUX	WESTON	WY	BLACK TAIL CREEK	1946	06/07/2011
STATE	D & W LIVESTOCK COMPANY, INC.	WESTON	WY	SHOSTAK DRAW	1953	07/21/2010
MARTIN-THOMPSON	DOUBLE TRIANGLE RANCH	WESTON	WY	STOCKADE BEAVER CR	1939	09/20/2012
SLIDE	TRUE RANCHES, INC. (TOBY WINGERT)	WESTON	WY	STOCKADE BEAVER CREEK	1961	09/20/2012
SPENCER NO. 2	TRUE RANCHES, INC. (TOBY WINGERT)	WESTON	WY	STOCKADE BEAVER CREEK	1961	09/20/2012
~~BUTTE~~	~~ROBERT & GALE STODDARD~~	~~WESTON~~	~~WY~~	~~SPRING CREEK~~	~~1963~~	~~03/20/2013~~
PERINO	BOB PERINO	WESTON	WY	SPRING DRAW	1953	05/22/2014
TWIN FORKS	TURKEY TRACK RANCH	WESTON	WY	NORTH FORK DEER DRAW	1959	07/27/2011
KLODT	TOWNSEND CO.	WESTON	WY	MUSH CREEK	1920	09/20/2012

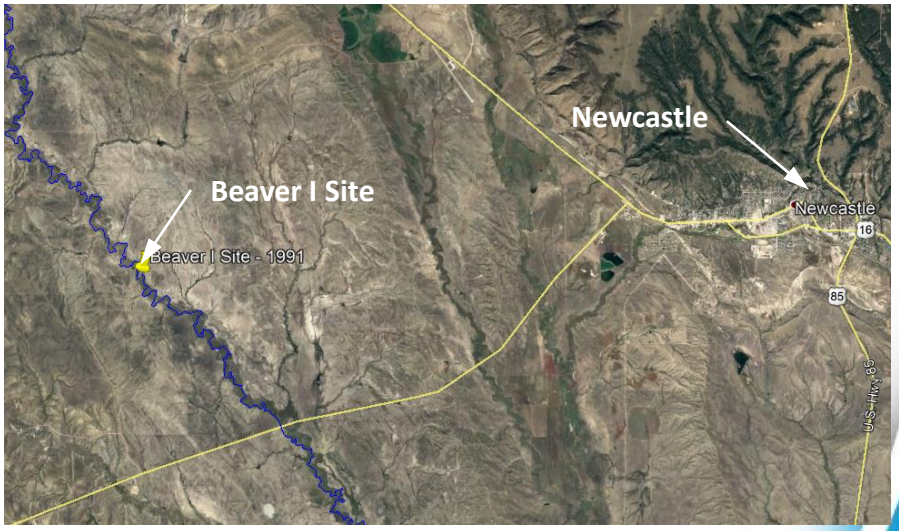
Storage – Larger Existing



- Spencer-Lak
  - 2,162 acre-feet
  - 126 acres
- Klodt
  - 980 acre-feet
  - 124 acres

Storage – Previous Recommendations

- Three locations - Level I and II studies
- Beaver 1 – 1991:
  - 8,000 acre-feet for recreation
  - 1,800 acres
  - $7.3 million in 1991 dollars
  - ~$16.3 million based on general index – will update
- Feasible new sites?



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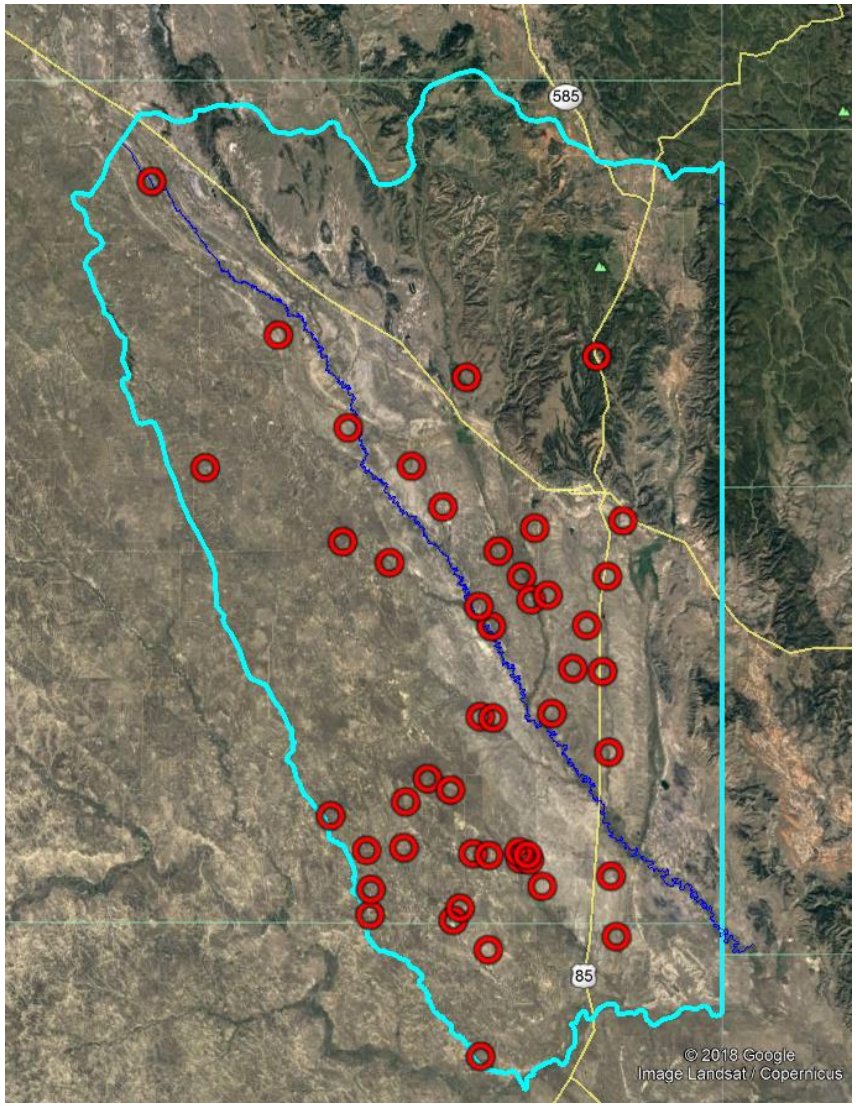
Surface Water Storage - Breached Dams



- 47 identified locations
- Permitting is potentially easier for an existing structure
- Compare to stock pond locations to find desirable locations

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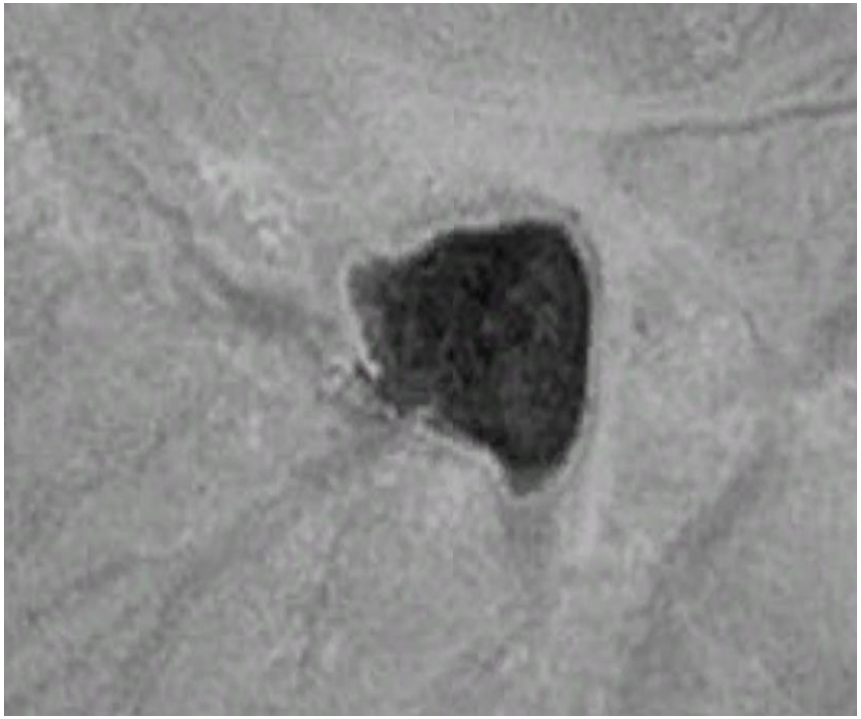
Surface Water Storage - Breached Dams



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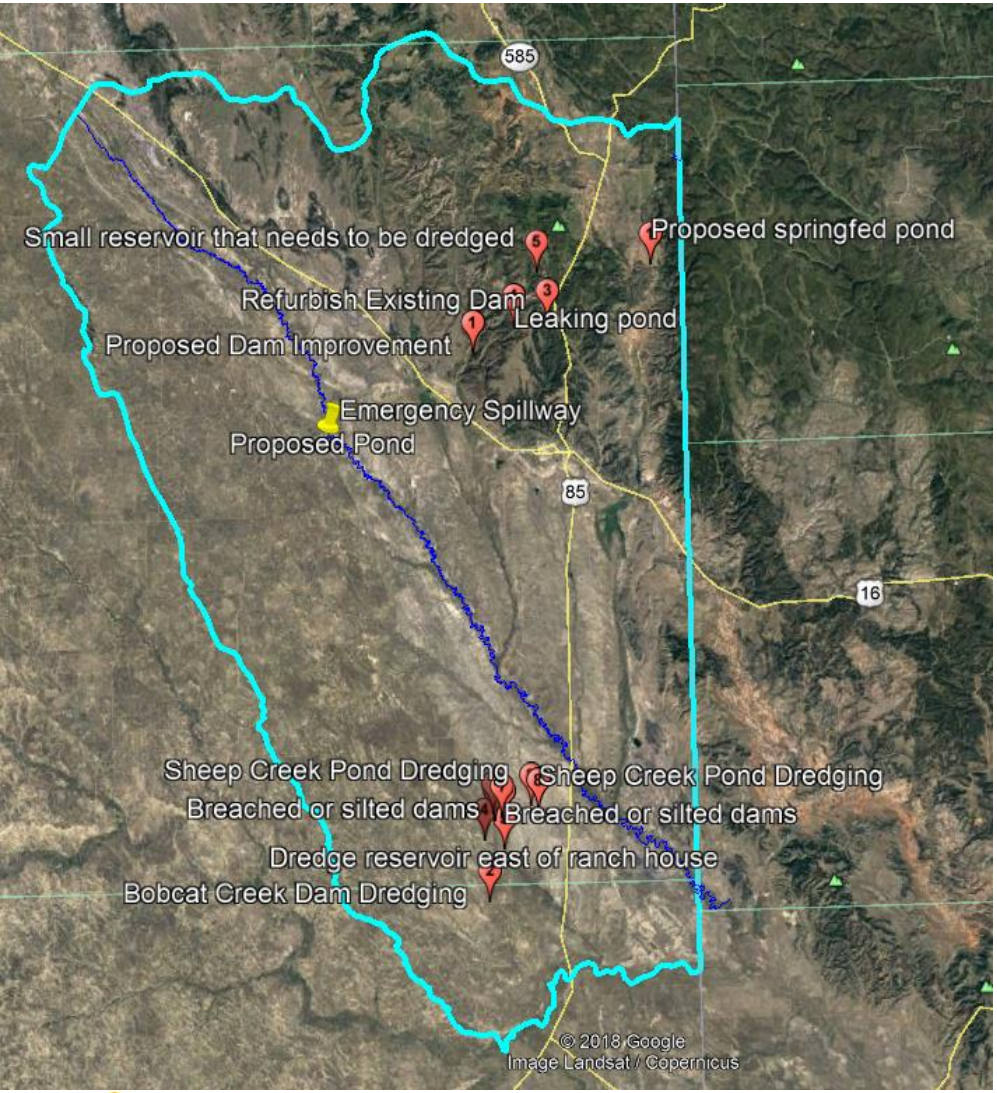
Surface Water Storage – Project Requests



- Site visits/discussions
- Capacity, surface area, and drainage area estimates – underway
- Cost estimates – underway
- Compare to water availability for a normal year

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WDEQ Stream Classifications

- Beaver Creek and East Fork Beaver Creek = 2AB
- Tributaries = 3B

	Drinking water	Game Fish	Non-Game Fish	Fish Consump-tion	Other Aquatic Life	Recreation	Wildlife	Agriculture	Industry	Scenic Value
1*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	Yes	Yes	Yes	Yes	Yes
2AB	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2A	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
2B	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2C	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3A	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
3B	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
3C	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
4A	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
4B	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
4C	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes

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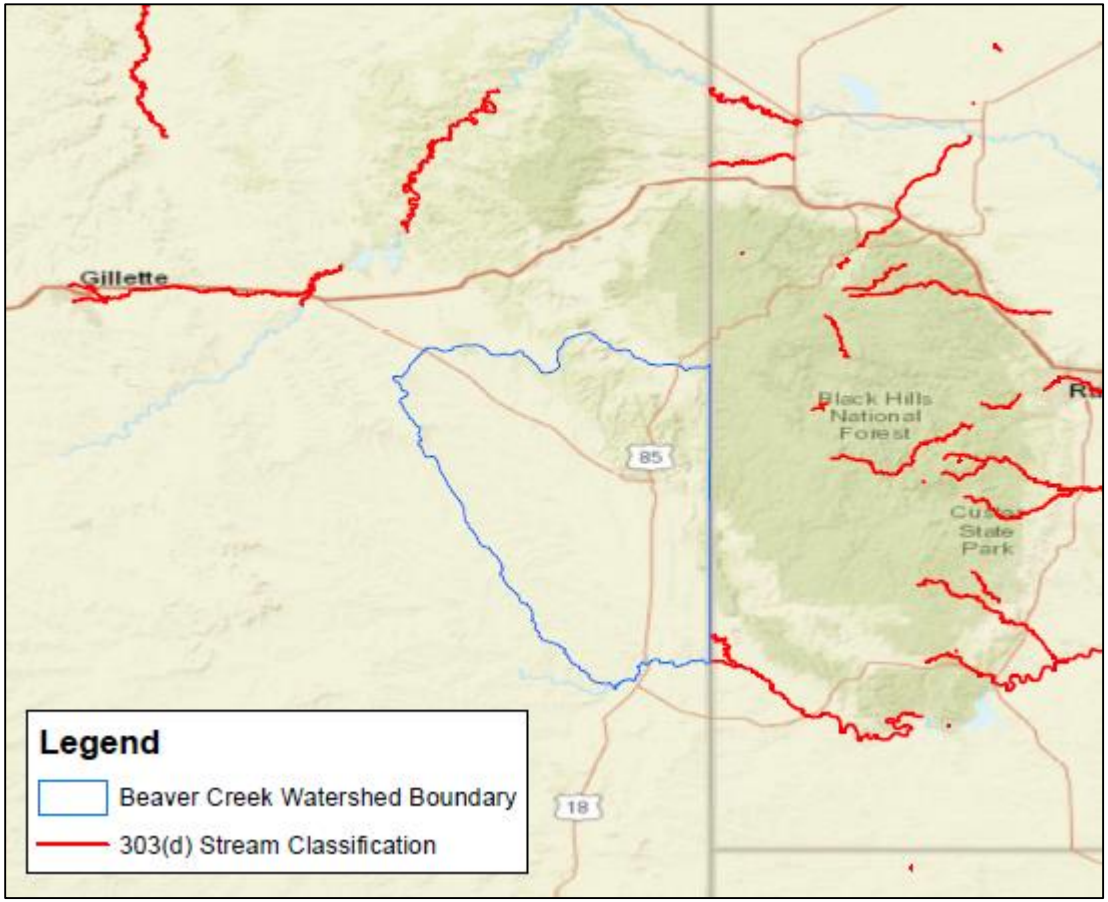
Water Quality

- No 303(d) listed impaired waters in Wyoming



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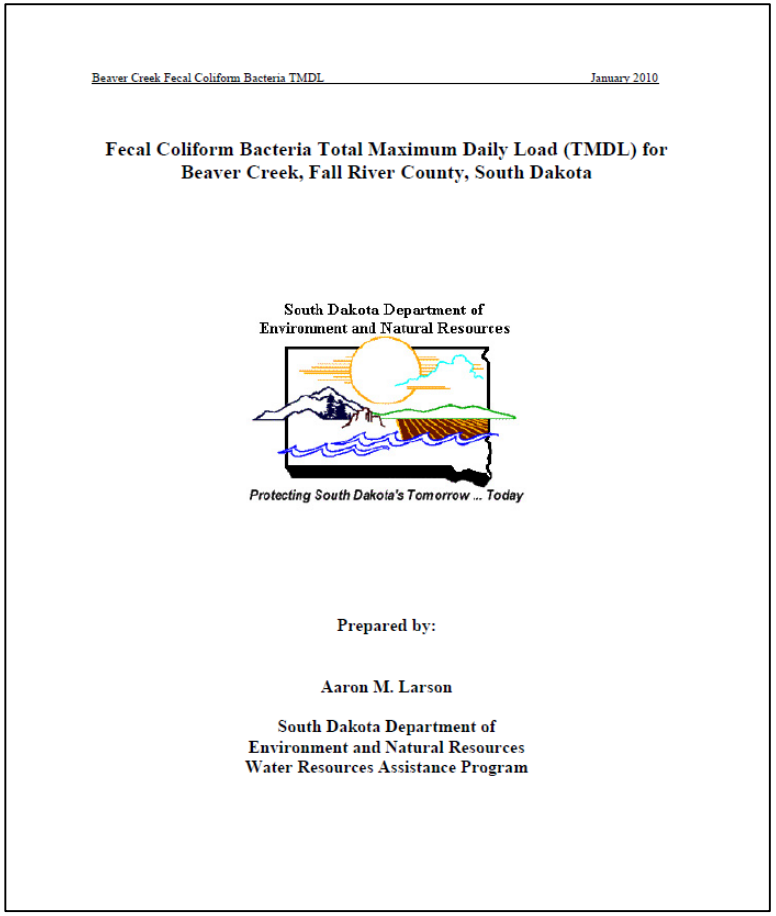
TMDL in South Dakota



Beaver Creek Fecal Coliform Bacteria TMDL January 2010

Fecal Coliform Bacteria Total Maximum Daily Load (TMDL) for Beaver Creek, Fall River County, South Dakota

South Dakota Department of Environment and Natural Resources

Protecting South Dakota's Tomorrow ... Today

Prepared by:

Aaron M. Larson

South Dakota Department of Environment and Natural Resources
Water Resources Assistance Program

- Fecal coliform bacteria
  - Livestock
  - Human (septic systems)
  - Wildlife
- Modeling showed Wyoming uses are not a significant contributor
  - Livestock exclusion and grazing management in South Dakota
- None of 5 Wyoming samples exceeded South Dakota standards

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Burn Area BMPs

- Seeding
- Mulching
- Weed control
- Contour log terraces where trees are available
- Straw wattles
- Silt fences

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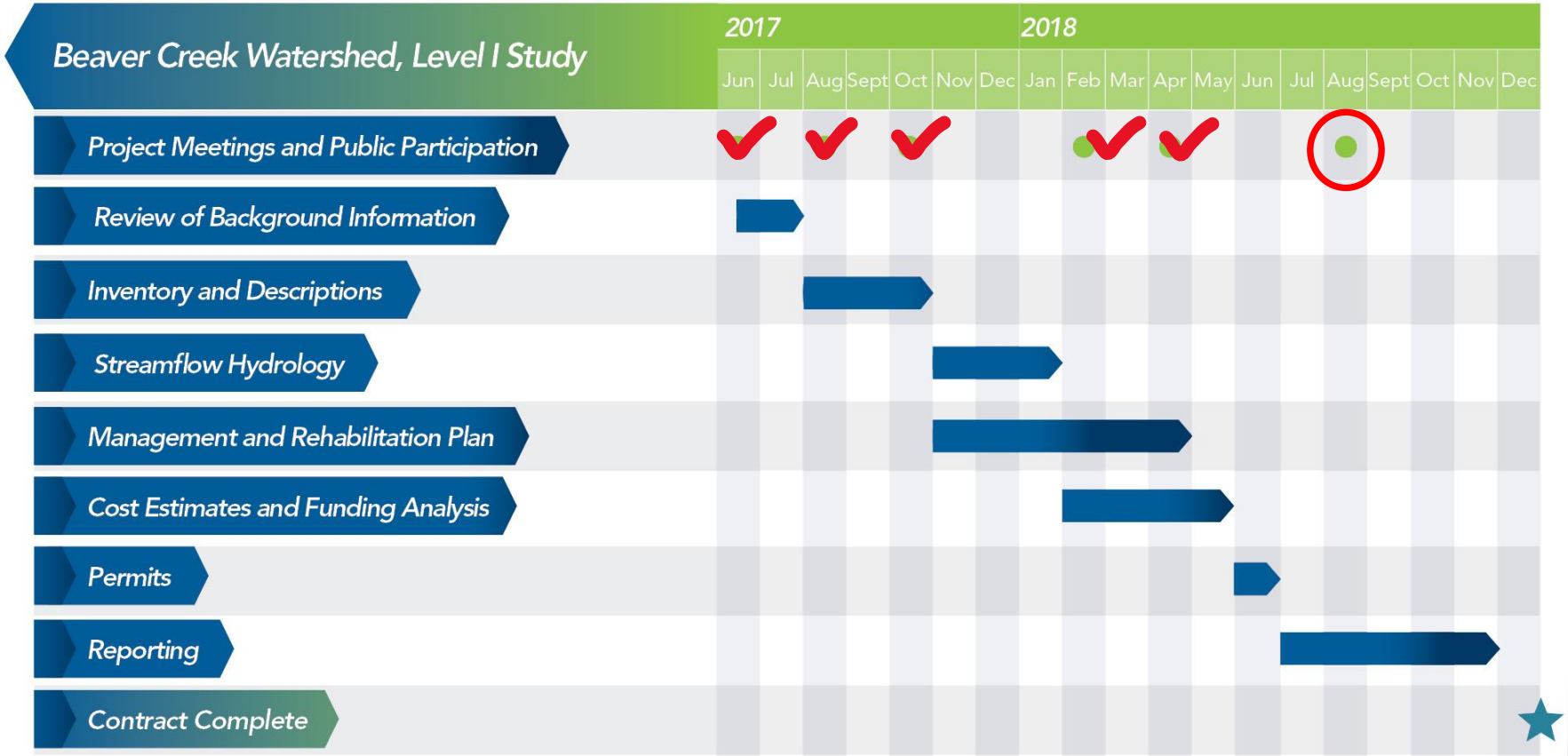
QUESTIONS?

What's Next



Project Schedule = June 2017 – December 2018

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What's Next

- Report Preparation
- One More Project Meeting
  - Mid-September, 2018
    - Watershed Study Results Presentation

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Quotes for the WWDC Report

What is your biggest water issue?

- Quality, quantity, or something else

How would you fix it?

- Be specific, if possible

Example from a recent watershed study:

- Fire suppression water supply in remote areas was needed
- Tourism drove the economy of the area
- With access roads closed, economy severely impacted

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