Beaver Creek Watershed Level I Study

Project Meeting #3

Tuesday, October 3, 2017

Weston County NRD Office

1225 Washington Blvd.

Newcastle, WY 82701

WELCOME!!!

Watershed Meeting Topics

- Brief Watershed Study Introduction
- Current Status
- Geomorphology – Stream Restoration
- What's next?

- Wrap up
  - Question/Answer and Open House Style

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*

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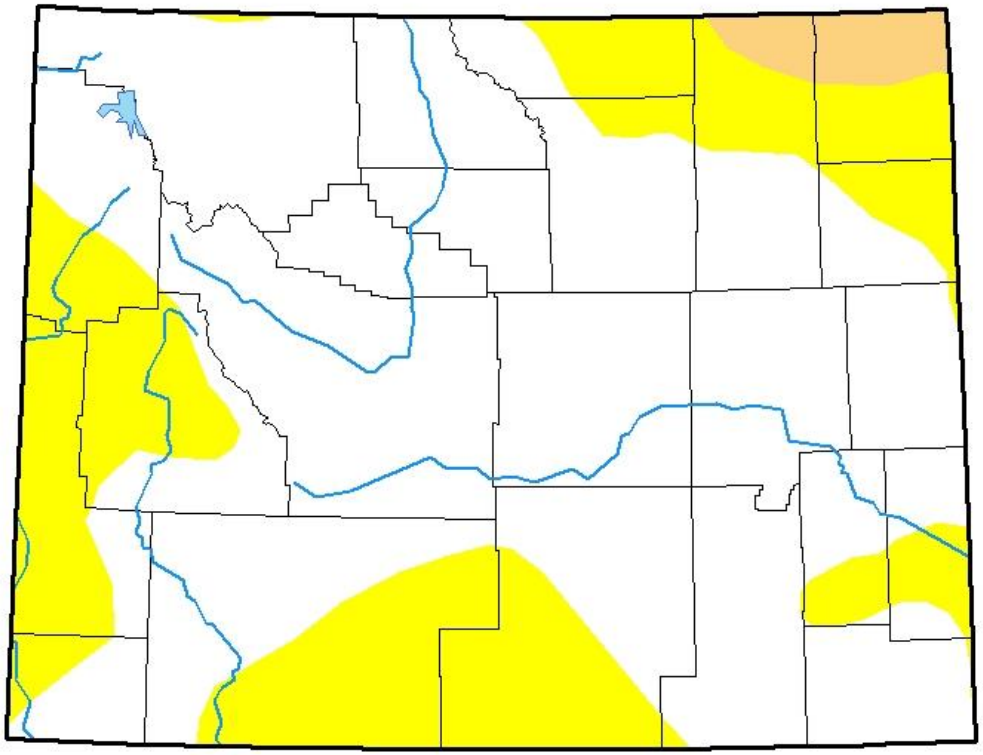
U.S. Drought Monitor

Wyoming

September 19, 2017

(Released Thursday, Sep. 21, 2017)

Valid 8 a.m. EDT



Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

Brad Rippey
U.S. Department of Agriculture

http://droughtmonitor.unl.edu/

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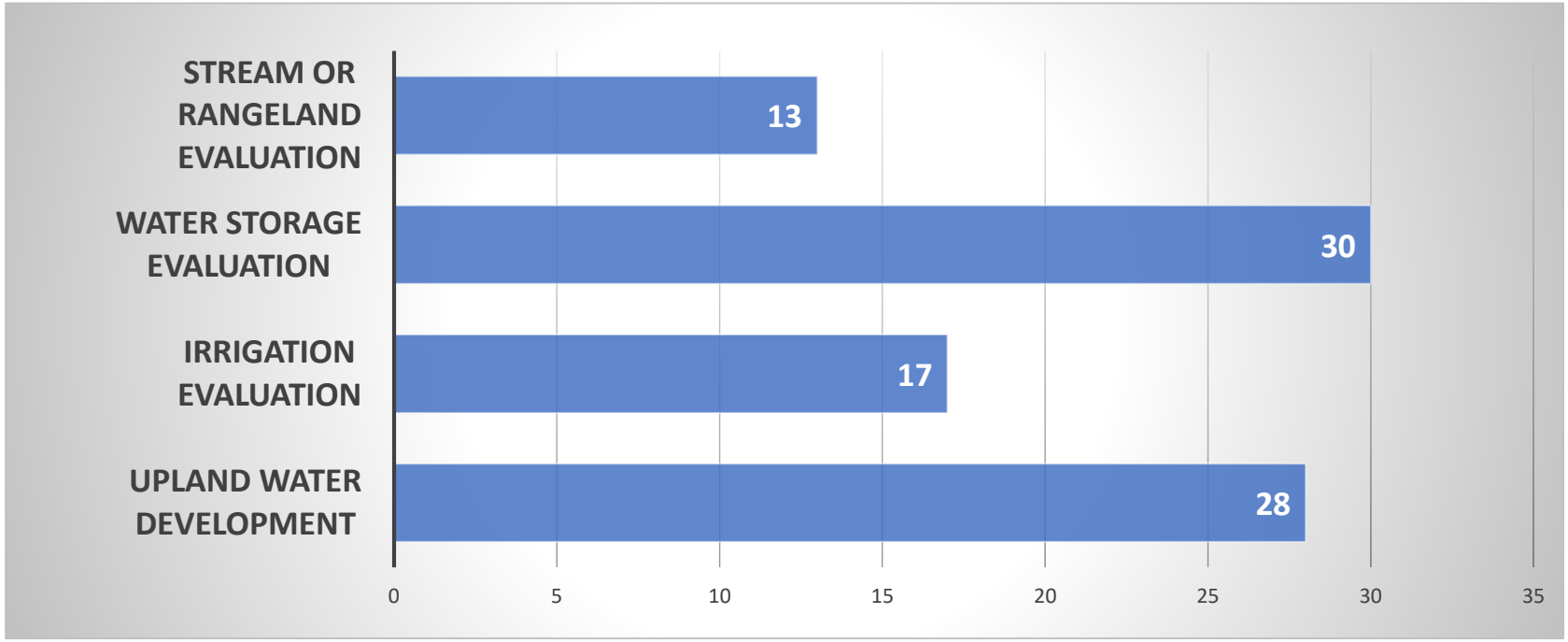
Current Tally of Project Evaluations



Tally as of September 29, 2017

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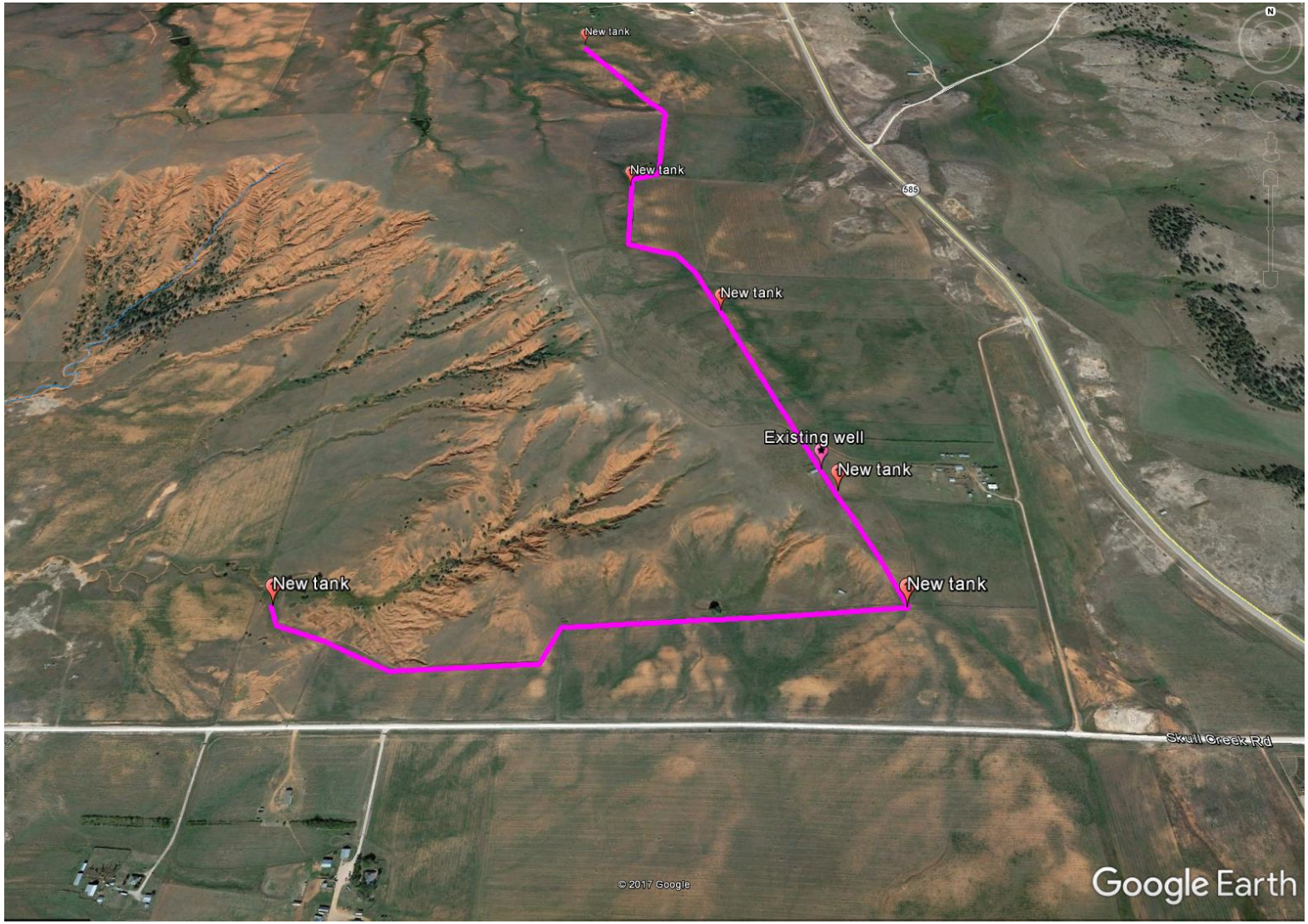
GoogleEarth Site Maps



Cost Estimates – In Progress

Project Number		1	2	3
Mobilization		$1,000	$3,000	$3,000
Well Construction/ Spring Development	Units (each)	NA	NA	2
	Depth (feet)			450
	Unit Cost ($/LF well or $/EA spring)			$66
	Component Subtotal			$59,400
Solar Pump	Units (each)	NA	5	2
	Unit Cost (each)		$10,734	$10,734
	Component Subtotal		$53,668	$21,467
Pipeline	Low Pressure Pipe Diameter (inches)	1.0	NA	1.5
	Units (linear feet)	10560		5260
	Unit Cost (each)	$5.89		$5.89
	Component Subtotal	$62,172		$30,968
Stock Pond Rehabilitation	Units (each)	NA	7	NA
	Earthwork (cubic yards)		5000	
	Unit cost earthwork		$4.30	
	Agri-Drain Installation		$4,800	
	Component Subtotal		$155,307	
Livestock / Wildlife Water Tanks	Units (each)	6	NA	NA
	Size (gallon)	1,000		
	Unit Cost	$0.00		
	Component Subtotal	$0		
Other Components	Item	NA	NA	Fencing (linear feet)
	Units (each)			1000
	Unit Cost ($/ea)			$4.59
	Component Subtotal			$4,588
Construction Subtotal		$63,172	$211,975	$60,023
Engineering (10%)		$6,317	$21,197	$6,002
Construction and Engineering Subtotal		$69,489	$233,172	$66,025
Contingency (15%)		$10,423	$34,976	$9,904
Total Construction Cost		$79,913	$268,148	$75,929
Final Plans and Specs		$1,000	$1,000	$1,000
Permitting/Legal Fees/Access		$2,000	$2,000	$2,000
Total Project Cost Estimate		**$82,913**	**$271,148**	**$78,929**

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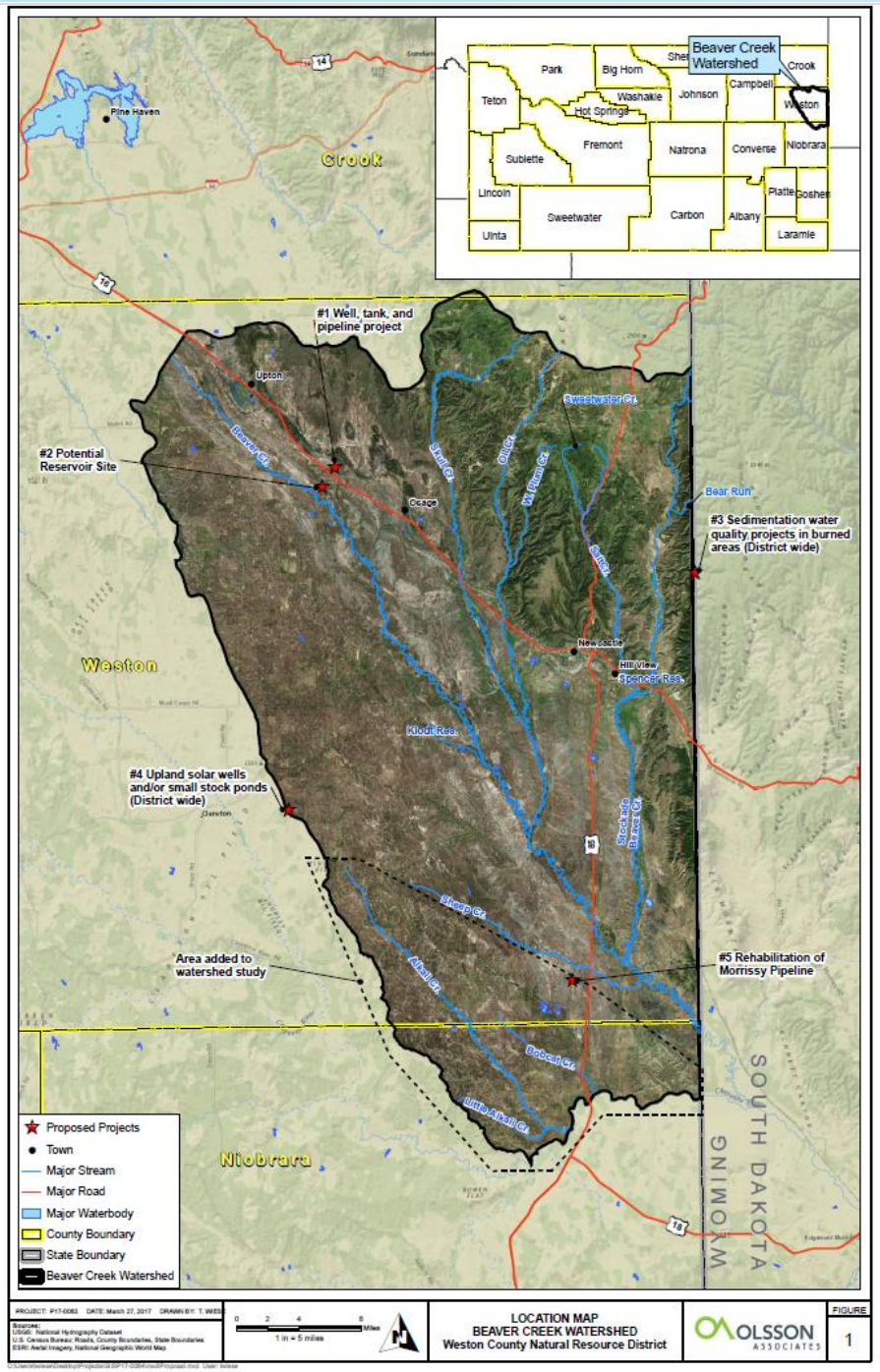
Notes: *All estimates based on EQIP Practice payment rate Guidance Document FY2015 inflated by 25%.*



Beaver Creek Watershed

760,029 AC

<u>Classification of Streams</u>:

- Beaver
- Stockade Beaver
- Parmalee
- Bear
- Salt
- Sweetwater
- Freshwater
- Oil
- West Plum
- Big Plum
- Skull
- Alkali
- Little Alkali
- Bobcat

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2) Overlay the river system on the fluvial landscape to get the following:

- General channel slope (steep/flat)
- Channel bed features (step/pool or riffle/pool)
- Estimate of channel shape (general width/depth ratios categories <12, 12-40, >40)
- Pattern and profile to show floodplain extent
- Plan view pattern (single or multiple channels)
- Confinement (entrenchment slight, moderate, entrenched) or lateral containment (yes or no)

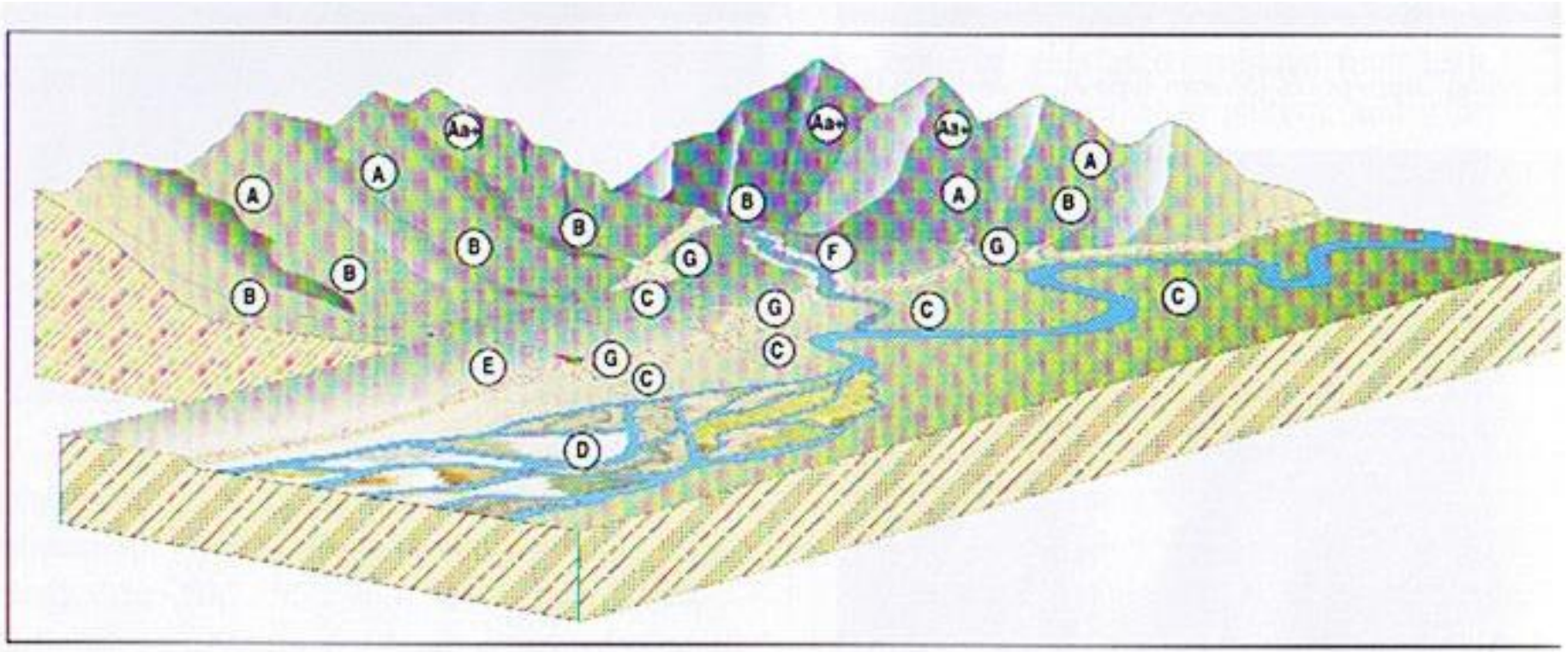
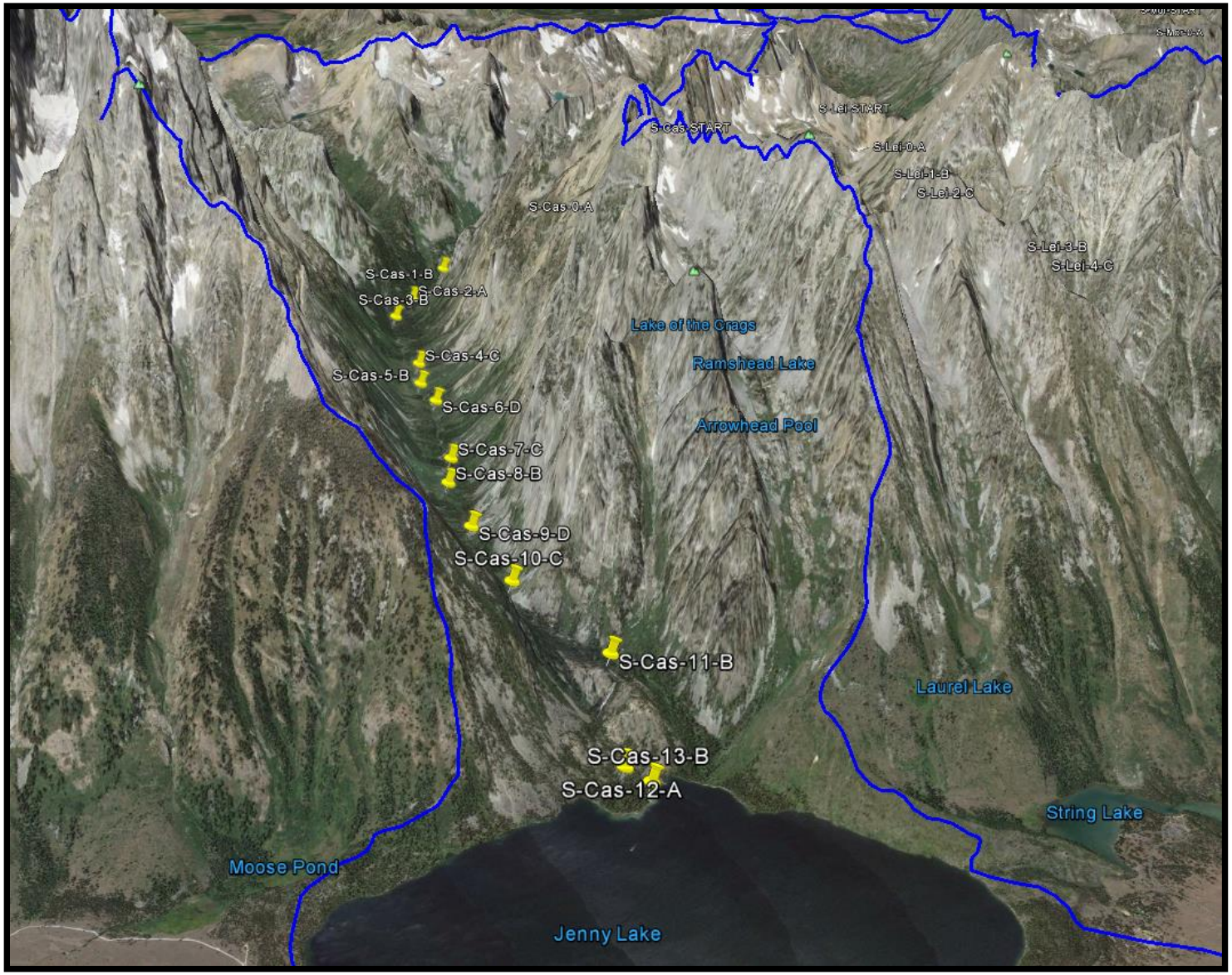


FIGURE 4-22. Example of broad level delineation of stream types at Level I.

Example – Upper Snake River



Example – Upper Snake River

REACH ID	WATERSHED	REACH NAME	REACH NUMBER		LANDFORM	VALLEY TYPE
S-Cas-0-A	Snake River	Cascade Creek	0		glacial/fluvial terrace	I
S-Cas-1-B	Snake River	Cascade Creek	1		glacial/fluvial terrace	II
S-Cas-2-A	Snake River	Cascade Creek	2		glacial/fluvial terrace	I
S-Cas-3-B	Snake River	Cascade Creek	3		glacial/fluvial terrace	II
S-Cas-4-C	Snake River	Cascade Creek	4		glacial/fluvial terrace	VIII
S-Cas-5-B	Snake River	Cascade Creek	5		glacial/fluvial terrace	VIII
S-Cas-6-D	Snake River	Cascade Creek	6		glacial/fluvial terrace	V
S-Cas-7-C	Snake River	Cascade Creek	7		glacial/fluvial terrace	VIII
S-Cas-8-B	Snake River	Cascade Creek	8		glacial/fluvial terrace	VIII
S-Cas-9-D	Snake River	Cascade Creek	9		glacial/fluvial terrace	V
S-Cas-10-C	Snake River	Cascade Creek	10		glacial/fluvial terrace	VIII
S-Cas-11-B	Snake River	Cascade Creek	11		glacial/fluvial terrace	VIII
S-Cas-12-A	Snake River	Cascade Creek	12		glacial/fluvial terrace	I
S-Cas-13-B	Snake River	Cascade Creek	13		glacial/fluvial terrace	VIII

TERRACE FEATURE	CHANNEL SLOPE	BED FEATURES	CHANNEL SLOPE	FLOODPLAIN	PATTERN	CONFINEMENT	LATERAL CONFINEMENT	CHANNEL TYPE
none	steep	step/pool	<12 w:d	none apparent	single	entrenched	yes	A
none	steep	step/pool	<12 w:d	none apparent	single	moderate	yes	B
none	steep	step/pool	<12 w:d	none apparent	single	entrenched	yes	A
none	steep	step/pool	<12 w:d	none apparent	single	moderate	yes	B
none	flat	riffle/pool	12-40 w:d	active apparent	single	slight	no	C
none	steep	step/pool	12-40 w:d	none apparent	single	moderate	yes	B
multiple	flat	riffle/pool	12-40 w:d	active apparent	multiple	slight	no	D
none	flat	riffle/pool	12-40 w:d	active apparent	single	slight	no	C
none	steep	step/pool	12-40 w:d	none apparent	single	moderate	yes	B
multiple	flat	riffle/pool	>40 w:d	active apparent	multiple	slight	no	D
none	flat	riffle/pool	12-40 w:d	active apparent	single	slight	no	C
none	steep	step/pool	12-40 w:d	none apparent	single	moderate	yes	B
none	steep	step/pool	<12 w:d	none apparent	single	entrenched	yes	A
none	steep	step/pool	12-40 w:d	none apparent	single	moderate	yes	B

Progress:

- Level I Stream Channel Classification is in the beginning phases for the entire watershed.

Questions:

Long Term Uses of Level I Stream Classification?

- on going channel restoration and stabilization as projects develop

Needs and wants of the watershed users?

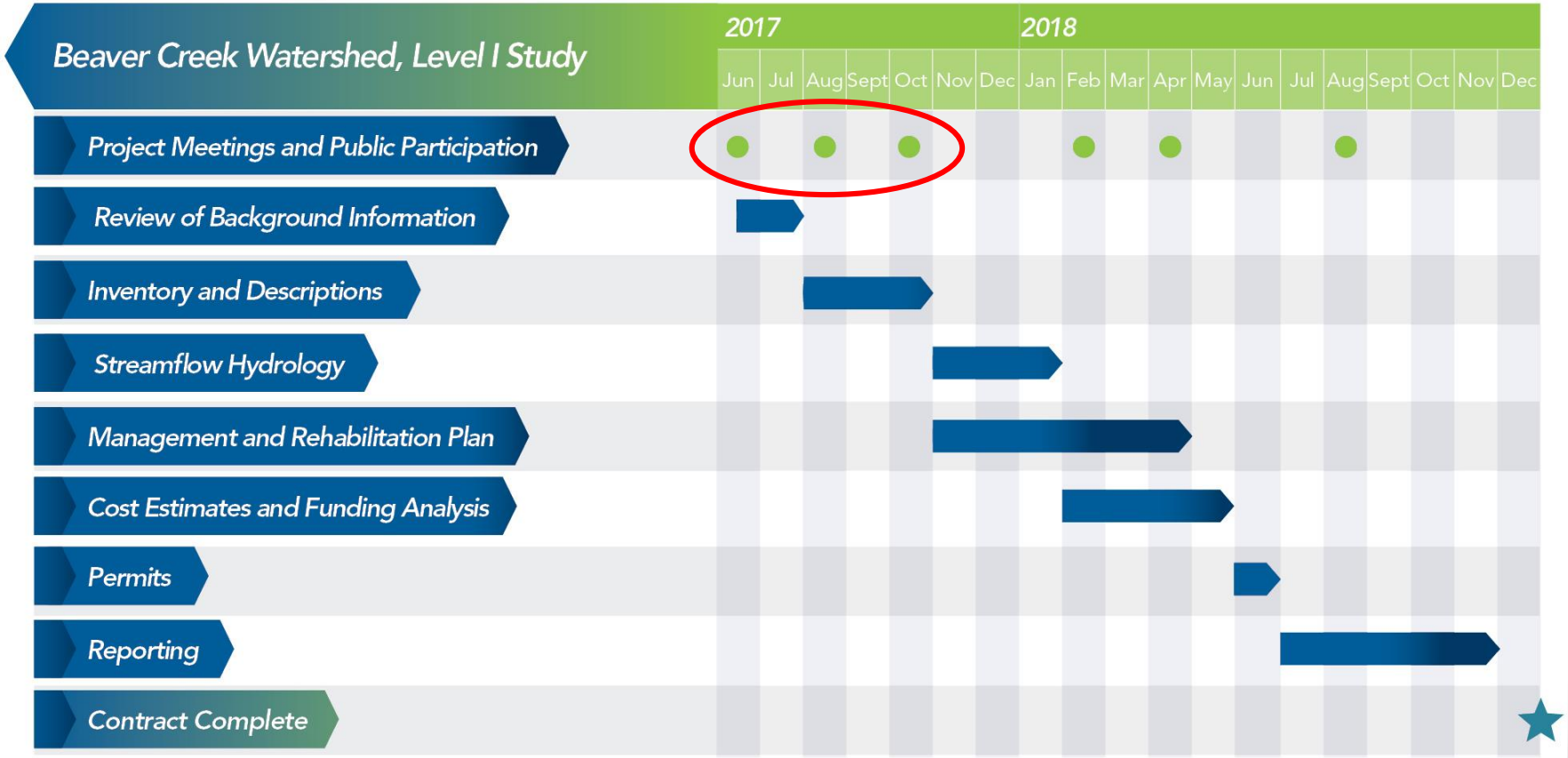
- design and implement water development projects specific to stream channel classification

Why Do We Perform a Level I Study?

- For long term planning, sustainability, and projects

QUESTIONS?

What's Next



Project Schedule = June 2017 – December 2018

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