

Utah Water Quality Task Force Meeting
Minutes

July 20, 2016 9:30 am – 11:45
Utah Division of Water Quality
195 North 1950 West
Salt Lake City, Utah

Name	Representing
Jim Bowcutt	DEQ/DWQ
Mike Luers	SBWRD
Kari Lundeen	DEQ/DWQ
Walt Baker	DEQ/DWQ
Diane Menuz	UGS
Alan Clark	DNR
Paul Dremann	UTU
Marion Rice	Salt Lake County
Nancy Mesner	USU WQ Extension
Carl Adams	DEQ/DWQ
Jay Olsen	UDAF
R.J. Spencer	UDAF
Paul Burnett	Trout Unlimited
Nicole Froula	DEQ/WQ
Linda Gould	DEQ/WQ
Chris (Kris) Kane	UAC

Walt Baker (DEO/DWO) - Welcome and Introductions

Walt Baker – Senate Bill 110, Other Legislative Updates and Algae Blooms

Instream flow is an element to balance nexus between water quality and water quantity

Senate Bill 80 diverts funds from Transportation to two large water development projects: Bear River Development Project and Washington County pipeline project.

Working with Division of Water Resource.

Over 200,000 acre feet diversion – water quality impact

Historic lows for Great Salt Lake water levels.

North arm is two feet higher than South arm. Much more saline in the North arm than South arm.

No fresh water inputs to North arm.

Causeway Project – UPR replacing 2 culverts that allow communications between the north and south arms.

Brine shrimp danger with high saline levels, 14% in South arm.

Mineral extractors love increased saline – want more

The current situation of GSL is outside the model

Air Quality problems with exposing more lake bed

Displacing 200,000 acre feet will enhance problem. It is the flow of the Weber River

Senate Bill 110 – Peer Reviews

WQ embraces Peer Review

Our agency is built upon stakeholder involvement

Concern by stakeholders over POTWs (publically owned treatment works) – what will WQ be doing about nutrients.

Phosphorus reduction strategy – by 1/20/20 all mechanical wastewater treatment plants need to meet a 1mg per liter phosphorus limit. Most plants are not removing phosphorus right now.

No WQ standards for phosphorus and nitrogen right now. Limits right now are placed by conciquence of a TMDL on treatment plants – site specific limits after studies and limits written in permit.

3-5 mg is the spectrum that most treatment plants are producing. It takes chemical treatment to get to 1mg. .1 go to DNR (?) and below that, probably filters. It will be expensive.

Not a science base decision to go to .1 mg per lite but a technological one, “How much are the POTWS capable of achieving.”

We have had secondary treatment standards for plants for 44 years unless water quality dictates.

If you are a permittee that has standing and a permit, you may challenge a ruling or policy that WQ is proposing.

Permittee pays for the cost of the peer review, and the Division of Water Quality director selects 3 independent peer reviewers.

They cannot be contracted with WQ or the challenging party.

Can review policy, rule, TMDL, etc. for up to a year before they arrive at a decision.

Typical peer reviews address risks, unknowns or gaps in knowledge

WQ’s preference is that peer review should inform decision making, not trump decision making.

Some vagaries in peer review and how to implement it will be addressed in the WQ board in August.

EPA has concerns of peer review being in harmony with the delegation agreement we have to implement the NPS (?) program

It excludes people who would otherwise be involved in the public policy and rule making process.

Will try to close gap so there is not an in-congruency in statute

Confident we can close most if not all gaps.

Two other states(California and Minnesota) in nation have peer review. This bill is much more far reaching.

EPA concerned that peer reviews come before the rules/policies/permits/standards are open to the public for debate.

Theoretically, someone from the Netherlands can be influencing our rules and policies without the public's knowledge.

Environmental advocate groups have appealed the EPA to rescind delegation that Utah has to administer the programs under the Clean Water Act.

If there is a rule, policy or standard that has far reaching effect, WQ will pay for the peer review.

Algae Blooms

Algae Blooms are not new. The severity and magnitude is new.

Became aware of it last Wednesday. It began last Tuesday

Worse this week than last week (thicker)

In Utah Lake emanated from Provo Bay, where it is most dense, throughout the lake.

WQ measures the cyanobacteria as to the density and algae present

The magnitude reached 43 million cells per milliliter. Never been seen before.

Earlier than ever before. We do not know why. Some ideas: nutrients to the lake have changed, warmer temperatures, water levels down.

Utah lake is 3rd largest lake in state at 96,000 acres.

Not a closed system. Feeds into Jordan River, which is used for agriculture and eventually leads to GSL.

Algae blooms at the mouth of Little Cottonwood Canyon

Secondary water systems shut down voluntarily.

Reported dead ducks and human illness

EPA can analyze only 3 toxins

Lab in Florida examines more toxins.

Utah Lake is closed.

There may be upstream manage of waters we can control such as controlling the food source (nutrient strategy).

80 percent of the phosphorus problem in Utah Lake is wastewater treatment plants.

Home builders vs. EPA on the amount of storm water detention

Requesting 1 million dollars from the board to study Utah Lake

Three (scons?) to be purchased for use on Utah Lake as a warning system for algae blooms.

Algae blooms in Farmington Bay have a different toxin than Utah Lake.

No study of economic impact yet (recreation, agriculture, health, etc.).

Mike Luers – Protecting In-Stream Flows in East Canyon Creek

East Canyon Creek Water Shed

1960s Park City had water company just for the city. Outside the city culinary water was not available. Developers forced to start individual water companies.

By 2000 there were 16 water companies in the area with no cooperation or consideration of the environment.

There were bankruptcies and lawsuits filed

East Canyon has no protected base flow. If you own the oldest water right, you can take the last drop of water out of the creek and kill native Bonneville trout and it would be perfectly legal.

Park City water comes from mineshafts, springs, and wells. It has had an impact on low flow streams through the years.

1995, salmon (not native) stopped migrating up from East Canyon Reservoir to Park City Kimball Junction area and spawn. They are completely out of the system now.

At this time WQ started studying East Canyon Reservoir and creek. TMDLs completed in April of 2000. Activities such as golf courses, mining, Olympics, wastewater treatment plants highly stressed the water system.

April 2003, creek dried up, water rights holders used all rights and the fish died

East Canyon Watershed Restoration Action Plan by East Canyon Watershed Committee

Flow augmentation feasibility study

People were diverting water that did not have rights

Park City was taking too much water out of the mine shaft that was supplementing water flow in the East Canyon Creek.

Stream flow goals – were goals achievable? Worked with Division of Water Resource

16 water companies not cooperating and filing laws suits against each other – worst case scenario for managing water resources.

Augmentation Alternatives (slide)

When real estate was sold and the creek was dried up, the problem finally got attention

Would like to see creek rise to beat low phosphorus limit.

2007, wrote legislation to present to legislature that would allow POTW to own water rights for purpose of protecting ecosystem.

Only acquire water rights from willing seller at fair market value, no combination

Farm Bureau did not approve, did not want another player in water rights business. They did not understand benefit they would receive from a guaranteed downstream flow to farmers

(hopefully this is correct – hard to hear)

“We” treat such low levels and a good part being treated is municipal rights, meaning no return flow.

We are not being pressured to take water out of wastewater treatment plant and use it for non-sewage purpose. That would be harmful to downstream agriculture. No requirement to put into the stream. We are a harbinger for things to come throughout the state.

The bill was killed.

2007 – study of estrogen, hormones, pharmaceuticals in water system. Low flow exacerbates the problem.

Projected growth – 57% build out in service area based on current zoning.

Once properties are sold and number of properties for purchase are limited, pressures are put on community to start going vertical, ex. Veil, Colorado.

Two plants – East Canyon (03') and Silvercreek construction will be completed in 2019 at a cost of 51 million.

Water companies came together to talk and in 2013 formed the Western Summit City Project Master Agreement.

Requested Weber Basin Water Conservancy District to shepherd the agreement

It forces water companies to come together and cooperate.

Weber Basin is now the go-to organization for additional water

Work with Weber Basin to manage stream flows to some degree, considering everyone's needs.

in 30 days if no rainfall, will test structure that is part of agreement.

Weber Basin owns a water treatment plant on creek, as part of deal, it's not turned on when stream flows are low.

Hire Deputy Commissioner part-time, part of Engineer's office, to enforce water rights.

With cooperation of water companies, flow has not been below 3.5 for last couple of years.

Taken 10 years to recover from debacle of early 2000s

If flow dips below 3.5, ask golf courses and water companies to use wells and within ½ hour the flow is back up.

Additional water for future growth – Rockport Reservoir and/or East Canyon Reservoir.

Paul Burnett – Flow Transaction Program

Since 2008 has the right to lease water for instream flow

Coalition to improve conditions to benefit coldwater fish and their watersheds

Volunteer force that helps w/projects such as planting willows, etc.

Water rights began with conflict when the state was settled. System is antiquated

Ecological and Environmental needs were not originally considered which has set TU back trying to conserve or establish flows.

Restoration and conservation focus on on-the-ground- projects.

Fish are not valued universally

Addressing different value systems between agriculture, water companies, fish biologists and water quality. The need to develop relationships.

Much water goes to a smallish portion of land to produce significant amounts of food.

Irrigation is very productive, but from water perspective, is very inefficient.

Trend – tighter water management, less flexibility in streams.

Building development vs. agriculture

Probably not political will in Utah to change water laws in the near future

Water rights are given appropriation dates and the water rights with the earliest dates have priority over others.

Instream flow rights owned by the Division of Water Rights and Division of Parks often are junior.

Environmental/recreational do have beneficial uses if held by Division of Wildlife and Division of Parks,

however, those water rights have a later date.

Most river basins are over allocated from fish and water quality perspective, challenging to keep water in streams in critical areas.

Much of how we determine water rights is determined by irrigated acreage.

As TU has been involved in restoration, have been better at identifying instream flow needs for fish Utah state models and maps of habitat help identify needs.

In the next 10 years, little opportunity to reestablish instream flow everywhere. Need to prioritize to places with valuable fisheries.

As west grows, just as much needs for humans as ecological systems.

Other states have water transaction programs and instream flow leases surrounding the Columbia and Colorado river basins – driven by endangered species.

Environmental flows are being identified as a need in Utah, not just for fish, but economic factors surrounding the fishing industry.

Trends moving toward water transaction, in state we have developed a flow transaction strategy

The only way it happens is through partnerships, building trust with people that have different needs.

Priority areas (chart) where TU has staff is not necessarily state priorities.

Funding – difficult to price water, not an effective or well developed transaction system or market.

Overall goal of Colorado River pilot program is to provide more water to Lake Powell.

Impact Investing

Infrastructure Funding – instead of funding water lease, directly upgrade system.

Tools (slide)

Direct lease – work w/ land owner , lease water 10 years as instream flow

Fallowing Agreement – not popular with land owners right now

Spilt Season Lease – compensated for not diverting flow, compensation equal to value of crop

Division of Water Rights Change Application is arduous, hence tools can be more effective with flow transaction. Restructure agreement to avoid Change Agreement.

Utah water laws – if you don't use your water for 7 years, you may face foreclosure.

Six of Seven years, you may use tools, one year irrigate as normal.

Does not change underlining of Water Rights

Efficiency Increase – change from flooding to sprinkler irrigation (uses less water)

Right now Div. of Water Rights cannot lease saved water, hoping saved water goes back into the stream flow. Works better with small streams.

Discussion needs to happen regarding land owners being able to lease water downstream.

Triggered non-diversion – East Canyon

Deficit experimental, we have not used.

Lease good until next physical diversion downstream – difficult to shepherd

Gauge on lower Weber River – new this year, has not dropped below 50 cfs this year.

Enables Water Commissioner to have data to make decisions.

Protecting In-Stream Flows in East Canyon Creek Park City, Utah

Utah Water Quality Task Force Meeting

July 20, 2016

mluers@sbwrdd.org









History of Water Companies in the Snyderville Basin

or, how the whole mess started

Why Were So Many Water Companies Created?

- Developers developed isolated properties and needed water for their projects.
- They were forced to develop their own water source and infrastructure. Sixteen water companies were formed.
- They designed their systems to meet just their individual needs with no cooperation or concern for the environment.

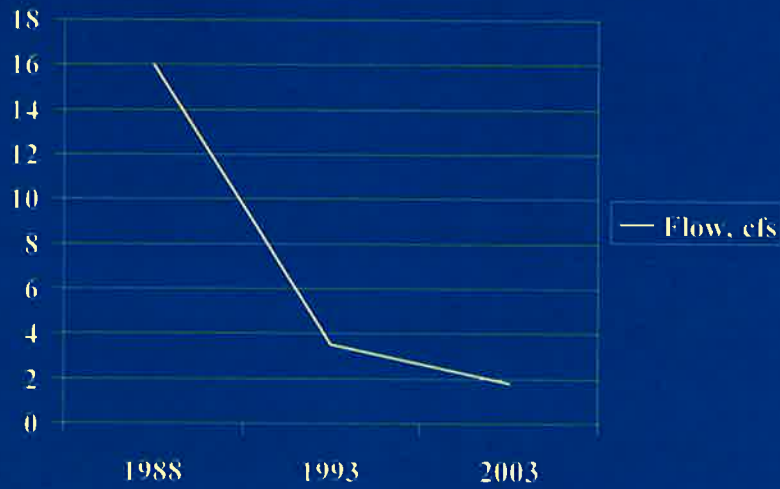
Problems Created By This Practice

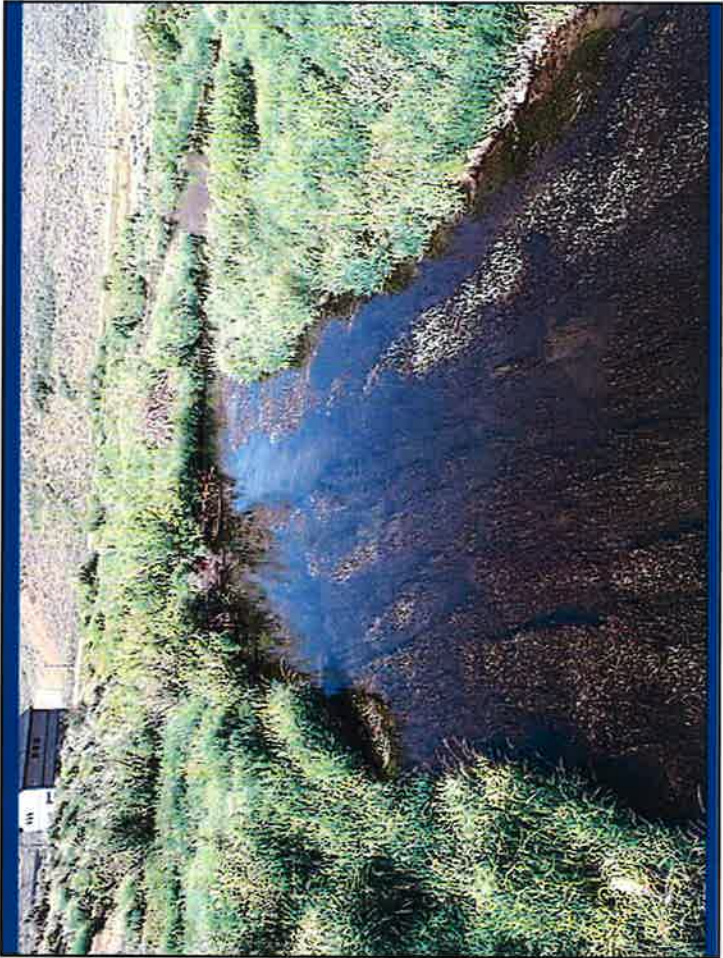
- No thought was given to protect in-stream flows.
- Some developers went bankrupt and the water sources for the development were inadequate.
- Many lawsuits were filed and many attorneys sent their kids to collage!
- There is not a protected base stream flow.





Historical Low Stream Flows (7Q10)

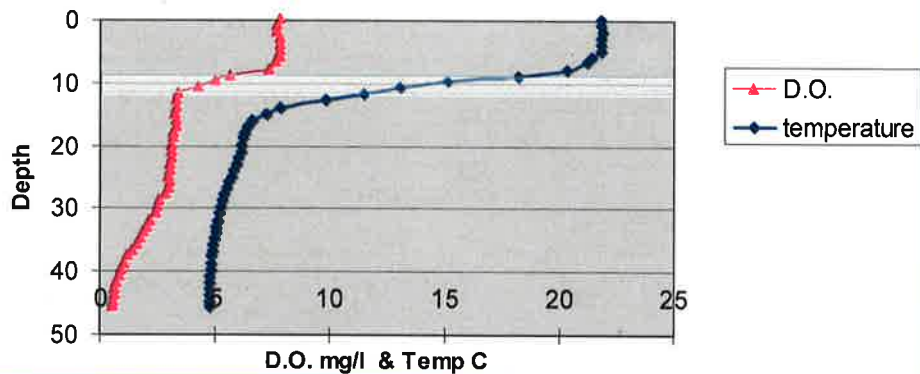


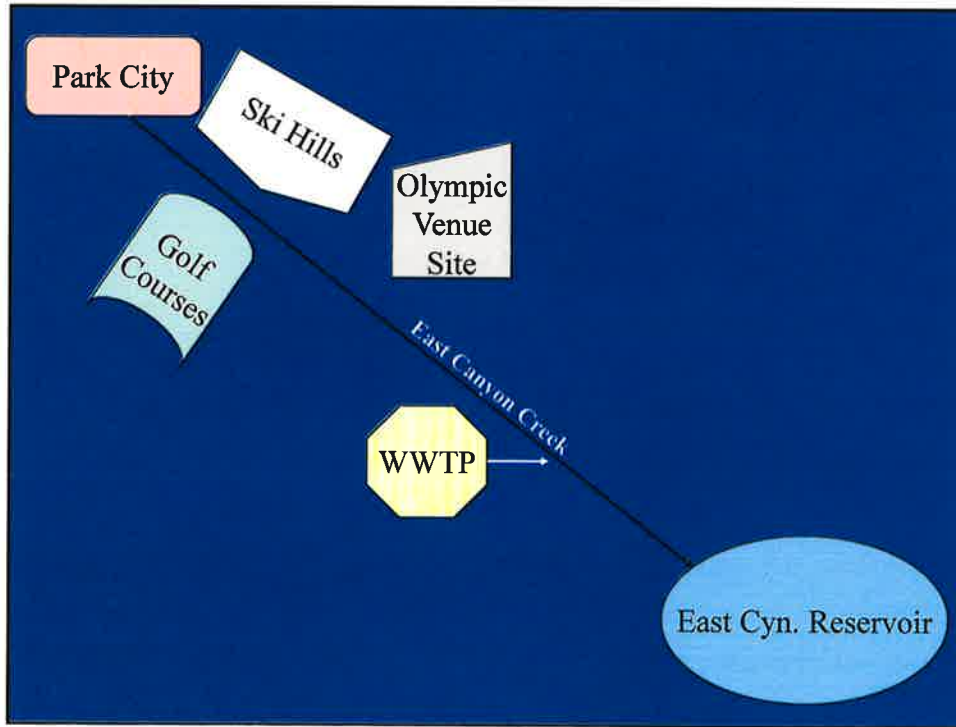


East Canyon Creek & Reservoir TMDL Impairments:

- ☞ Total Phosphorus
- ☞ Dissolved Oxygen
- ☞ High Surface Water Temperature
- ☞ Low Flows

East Canyon Reservoir
August 2000 Profile





East Canyon Water Reclamation Facility





East Canyon Watershed Restoration Action Plan

September 1, 2004



Acknowledgments

This plan was prepared under the direction of the East Canyon Watershed Committee. Individual contributors include Lee P. Duncan, Upper Weber River Watershed Coordinator; Norm Eivanstad, NRCS; Shane Green, NRCS; John Whitehead, Utah DEQ DWO.



Final Report

February 2005

East Canyon Creek Flow Augmentation Feasibility Study Summit and Morgan Counties, Utah

Prepared for: Snyderville Basin Water Reclamation District

 KLEINFELDER

 CALDWELL RICHARDS SORENSEN

 SNYDERVILLE BASIN WATER RECLAMATION DISTRICT

Study Scope

- Establish stream flow goals
- Analyze hydrology
- Assess water uses, diversions and water rights
- Meet with important parties
- Identify and evaluate alternatives

Stream Flow Goals:

- 3.5 cubic feet per second (cfs) in upper McLeod Creek
 - 5.0 cfs (3.5 cfs in extreme conditions) in lower McLeod Creek
 - 6.0 cfs (3.5 cfs in extreme conditions) in East Canyon Creek
- (Based on minimum flows needed for fish habitat as outlined in the Utah Division of Wildlife Resources (1998) aquatic-riparian management plan)

Augmentation Alternatives

- Improve management of water rights and diversions
- Acquire water rights – dedicate to in-stream flow
- Purchase or lease irrigation rights
- Storage in surface impoundments
- Aquifer storage and retrieval (ASR)
- Substitute WWTP reuse water for irrigation
- Importation options

Why is Stream Flow Important?

- Maintain viable ecosystem
- Fishery
- Aesthetics
- Property values
- Wildlife riparian habitat
- Measure of overall quality of life
- Water Reclamation District's discharge permit needs

East Canyon Creek Provides Habitat for Sensitive Trout Species



Brown Trout
(*Salmo trutta*)



Bonneville Cutthroat
(*Oncorhynchus clarki*)



INSTREAM FLOW TO PRESERVE WATER QUALITY

2007 GENERAL SESSION STATE OF UTAH

LONG TITLE

General Description:

This bill authorizes a municipality and certain special districts to change a water right for instream flow to protect water quality.

Highlighted Provisions:

This bill:

- < defines terms;
- < authorizes the Water Quality Board to make rules regarding certification of instream flow change applications;
- < allows a municipality, a special service district, a special service improvement district, a county water and sewer improvement district, a county service area, a water conservancy district, or an interlocal entity to file a change application for an instream flow to:
 - > protect water quality or quantity, or
 - > comply with state water quality standards;
- < requires the Water Quality Board's executive secretary to certify the proposed change to an instream flow, and
- < makes technical changes.

Monies Appropriated in this Bill:

None

Other Special Clauses:

None

Utah Code Sections Affected:

AMENDS: 19-5-104, as last amended by Chapter 179, Laws of Utah 2006 32 19-5-106, as last amended by Chapter 114, Laws of Utah 1995 33 73-3-3, as last amended by Chapter 215, Laws of Utah 2005 34 73-3-12, as last amended by Chapter 58, Laws of

Potential Sources of Endocrine Disrupting Compounds (EDCs)

- Natural Hormones
- Pharmaceuticals and Personal Care Products
- Pesticides
- Detergents
- Industrial Compounds



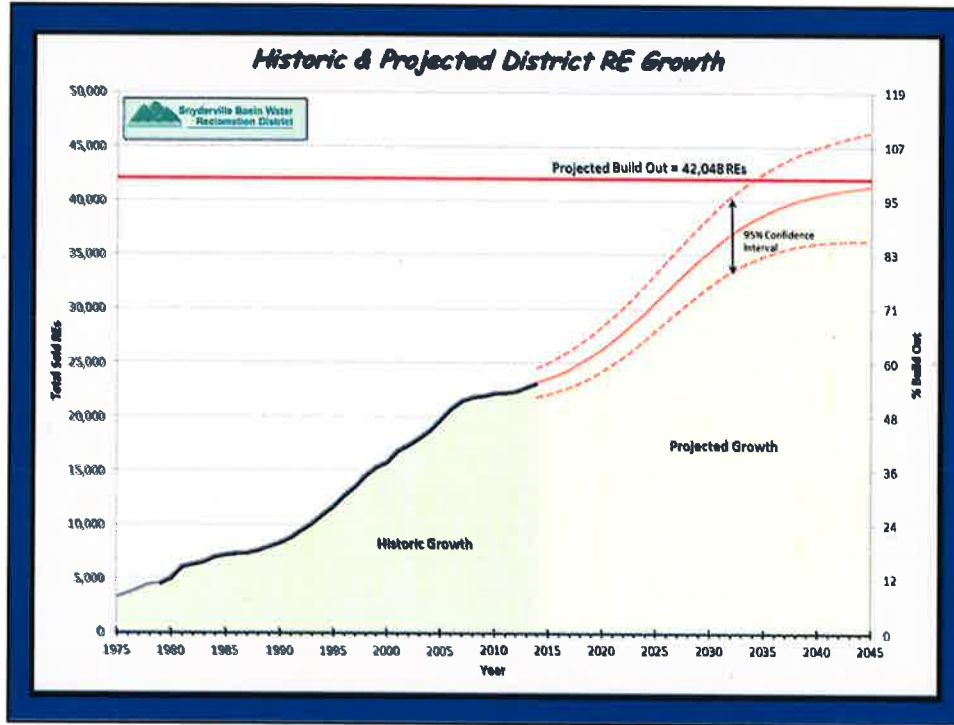
(Natural and synthetic, estrogen based hormones are of greatest concern in our situation)

Summary of Effluent Test Results

Constituent	Samples	Detection Frequency	AVG (ng/L)	MRL (ng/L)
E-Screen Bioassay	18	100%	0.69	0.03
Cotinine	18	100%	29	1.0
Sulfamethoxazole	24	100%	846	1.0
Gemfibrozil	19	89%	85	1.0
Trimethoprim	22	95%	73	1.0
Carbamazepine	34	84%	81	5.0
Triclosan	20	90%	38	5.0
Ibuprofen	19	89%	29	1.0
Caffeine	24	88%	23	3.0
Fluoxetine	24	88%	80	1.0
Diazepam	17	47%	87	1.0
Ethinyl Estradiol- 17 α	34	29%	5.5	1.0
Estrone	34	26%	47	1.0
Estradiol	34	18%	1.6	1.0
Acetaminophen	24	13%	2.6	1.0
Iopromide	20	n/a	12 ¹	5.0
Testosterone	20	n/a	1.2 ¹	1.0

¹Result shown is a single detection (not an average)





WESTERN SUMMIT COUNTY PROJECT MASTER AGREEMENT

THIS WESTERN SUMMIT COUNTY PROJECT MASTER AGREEMENT (this "Agreement"), is made and entered into by and among Weber Basin Water Conservancy District, a water conservancy district organized and existing pursuant to the provisions of §17B-2a-1001 et seq., Utah Code Annotated, 1953, as amended ("Weber Basin"), Park City Water Service District, a local district organized and existing pursuant to the provisions of §17A-2-1201 et seq., Utah Code Annotated, 1953, as amended ("Park City Water"), Mountain Regional Water Special Service District, a local district organized and existing pursuant to the provisions of §17D-1-101 et seq., Utah Code Annotated, 1953, as amended ("Mountain Regional"), Summit Water Distribution Company, a Utah not-for-profit corporation ("Summit Water"), Snyderville Basin Water Reclamation District, a local district organized and existing pursuant to the provisions of §17B-2a-401 et seq., Utah Code Annotated, 1953, as amended ("Snyderville Basin District"), Trilogy Limited, LP, a Georgia limited partnership ("Trilogy"), Leon H. Saunders, an individual ("Saunders"), and Summit County, a county of the State of Utah. Weber Basin, Park City Water, Mountain Regional, Summit Water, Snyderville Basin District and Summit County are hereinafter sometimes referred to individually as a "Party" and collectively as the "Parties."

RECITALS

A. Weber Basin, in part under agreement with the United States Bureau of Reclamation, owns or administers certain water rights and operates an extensive water storage, treatment and distribution system commonly known as the "Weber Basin Project", by means of which Weber Basin Project water and water under other Weber Basin water rights are made available, by contract, to municipalities and other entities and persons within Weber Basin's boundaries, including water supplies developed by Weber Basin subsequent to construction of the original Weber Basin Project in part to supplement water supplies in Summit County, Utah.

B. Park City Water, as a public agency, owns and operates an approved water system to supply water within its service area in Park City, Utah.

C. Mountain Regional, as a public agency created by Summit County, owns and operates an approved water system to supply water within its service area in Summit County, Utah.

D. Summit Water, as a private water company, owns and operates an approved water system to supply water in Summit County, Utah.

E. Snyderville Basin District, as a public agency, owns and operates a wastewater collection and treatment system within its service area in Summit County, Utah.

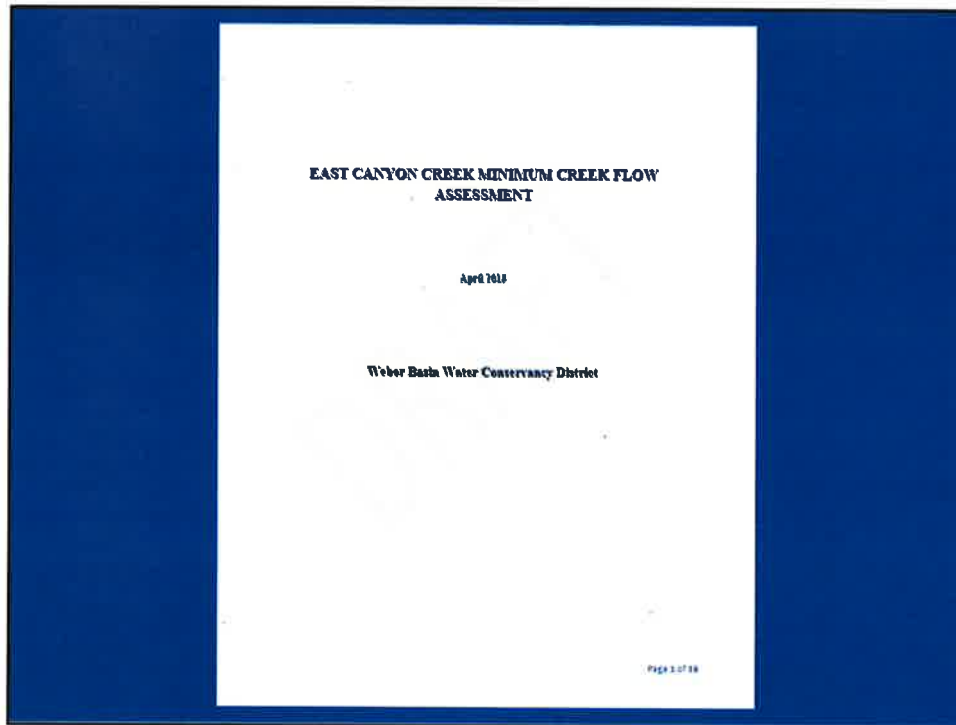
F. Due to growth and complex hydrology in the area, water resources are limited and in high demand in the Snyderville Basin.

Master Agreement Contains The Following Language:

- Future regionalization operations and projects will provide greater stream flows in East Canyon Creek.
- Weber Basin and Snyderville Basin District agree to work cooperatively with each other to establish reasonable minimum stream flows.
- Weber Basin controls future development of water resources ('one bucket approach').

Cooperative Efforts Include:

- Establish a minimum flow rate goal of between 2 and 3 cfs for East Canyon Creek during critical times of the year.
- Establish a minimum flow rate below which Weber Basin will not divert water from East Canyon Creek above East Canyon Reservoir.
- Establish a minimum flow rate goal for East Canyon Creek that is protected as an instream flow right during critical times of the year.
- Weber Basin and Snyderville Basin District will work together to assist the State Engineer in enforcing water rights.



Where Are We Today?

- Parties to the Master Agreement are cooperating.
- Interconnections between various water systems are being made.
- Water Rights are being enforced (Deputy River Commissioner hired).
- Actual stream flows have not dropped below 3.5 cfs in last few years.
- Real test will come during drought years.

Lessons Learned

- Don't wait until you have a 'train wreck' before addressing the situation.
- The Park City area is a harbinger of things to come for others parts of the state.
- Cooperation is critical, talk to the 'enemy'.
- Water laws need to be changed to allow others to hold in-stream flow right, provided AG is made whole.

 Snyderville Basin Water
Reclamation District

Questions?



For more info visit: <http://www.sbwrld.org>

Squeezing water from stones: Developing a flow transaction program in Utah.

Paul Burnett



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What is Trout Unlimited?



- TU is the largest non-profit coldwater conservation group in U.S.
- 215 professional staff
- 150,000 members
- Collaborate with Federal, State, and Private partners to benefit coldwater fish and their watersheds nationwide

Key Staff



- ☛ Jim DeRito – Bear River Project Coordinator
- ☛ Paul Burnett – Utah Water and Habitat Director and Weber River Project Coordinator
- ☛ Jordan Nielson – Price River Project Coordinator
- ☛ Brett Prettyman – Intermountain Communications Director
- ☛ Andy Rasmussen – Sportsman Conservation Project Utah Coordinator
- ☛ Charlie Card – Sportsman Conservation Project Backcountry Coordinator
- ☛ Doug Agee – Web Admin

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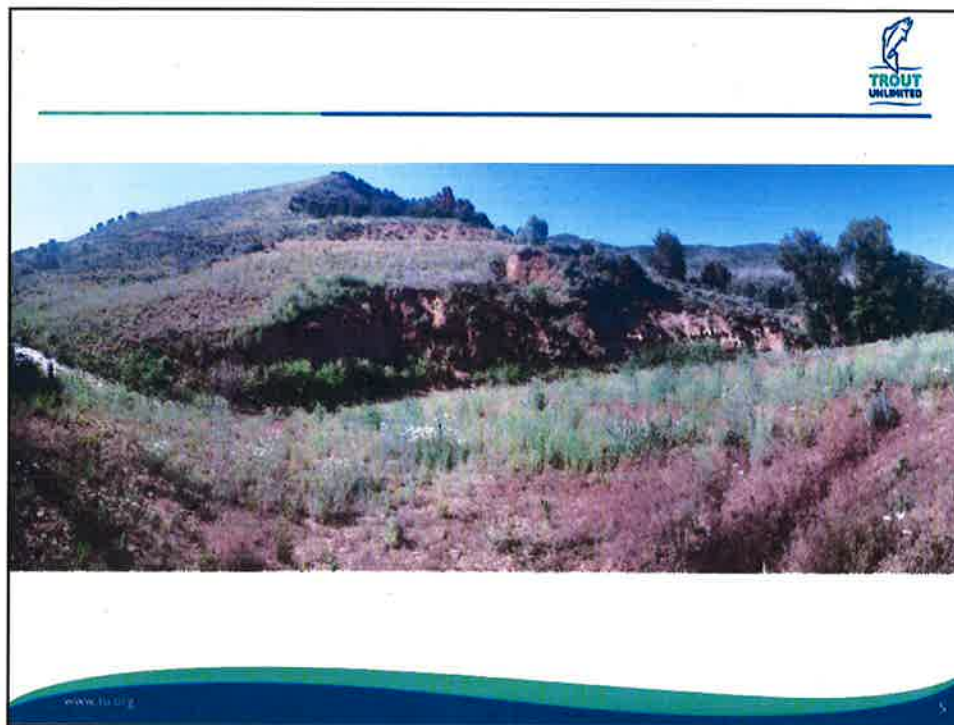
Volunteer Force



- ☛ 1400 Members Statewide
- ☛ 6 Chapters



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First Reactions to Utah Water Rights



- ☛ Complicated
- ☛ Archaic
- ☛ First-in-Time First-in-Right
- ☛ Prior Appropriation
- ☛ Traditional
- ☛ Use it or Lose it
- ☛ OMG

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Restoration – Reconnection is ‘Easy’ – Relatively Speaking



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Establishing and Protecting Environmental Flows is More Difficult



- ☞ Complicated historical context has set intractable policy
- ☞ Working outside our areas of interest and training
- ☞ Water users have different value systems and obligations
- ☞ Relationships are not well-developed



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Scale of Freshwater Use



- ☛ 40% of global food supply is produced by irrigated agriculture
 - 17% of the world's cultivated land
 - Accounts for 70% of abstracted freshwater
 - Irrigation is highly productive (food/unit of land) but inefficient



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Scale of Freshwater Use



- ☛ World water withdrawals for irrigation have increased by over 60% since 1960
- ☛ Over 54% of accessible freshwater runoff is appropriated.
 - 70% by 2025 (Postel et al. 1996)
- ☛ Water demand in the Greater Wasatch Area is projected to increase from 700 AF/Year in 1995 to 954 AF/Year in 2020.



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Key Water Rights Principles in Utah



- ☛ Prior appropriation
- ☛ Beneficial uses
 - Irrigation
 - Livestock
 - M&I
 - Hydropower
 - Mining
 - Aquaculture
 - Environmental/Recreational Uses**
- ☛ Most river basins are overallocated

Key Water Rights Principles in Utah

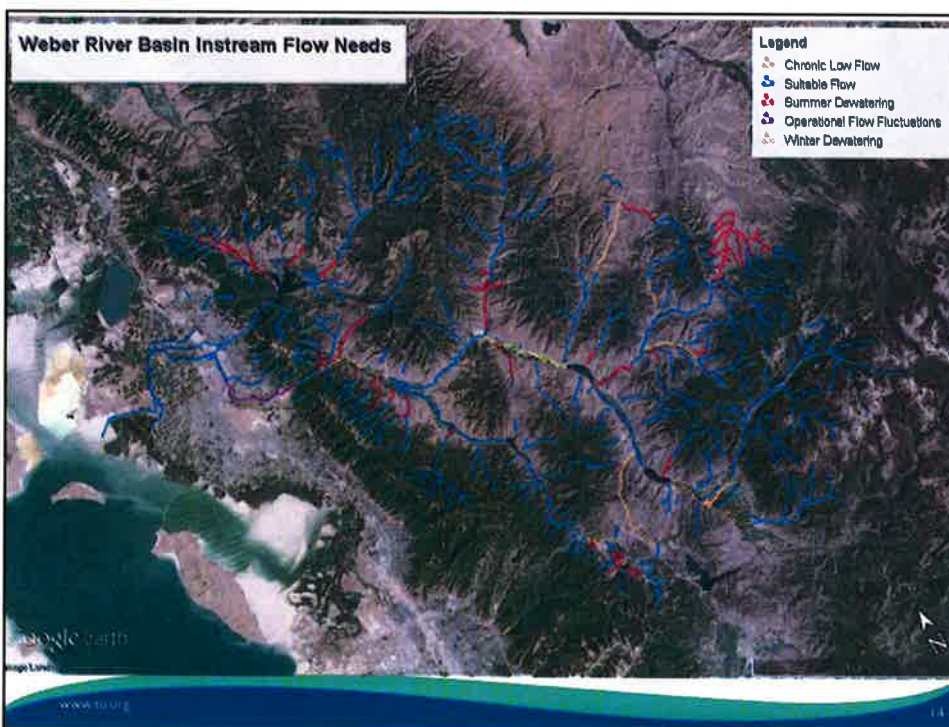


- ☛ Water Right Measurement
 - CFS
 - Acre-Feet
- ☛ # Acre/Feet required to support a crop is the “Duty”
 - 3-4 Acre Feet of Water Per Acre
- ☛ Return to this

Instream Flow Needs in Utah



- Fisheries professionals continue to identify instream flow needs for native fish and valuable fisheries



Increasing Interest in Water for Instream Values



- ☛ Human Population Increases
 - More pressure on freshwater systems
 - Greater value placed in conservation and outdoor water-related recreation
- ☛ Current water resource planning emphasizing future water development
- ☛ Columbia and Colorado River Basins have existing water transactions programs
 - Limited transactions have occurred in Utah
- ☛ Environmental flows identified as a need in the state water strategy

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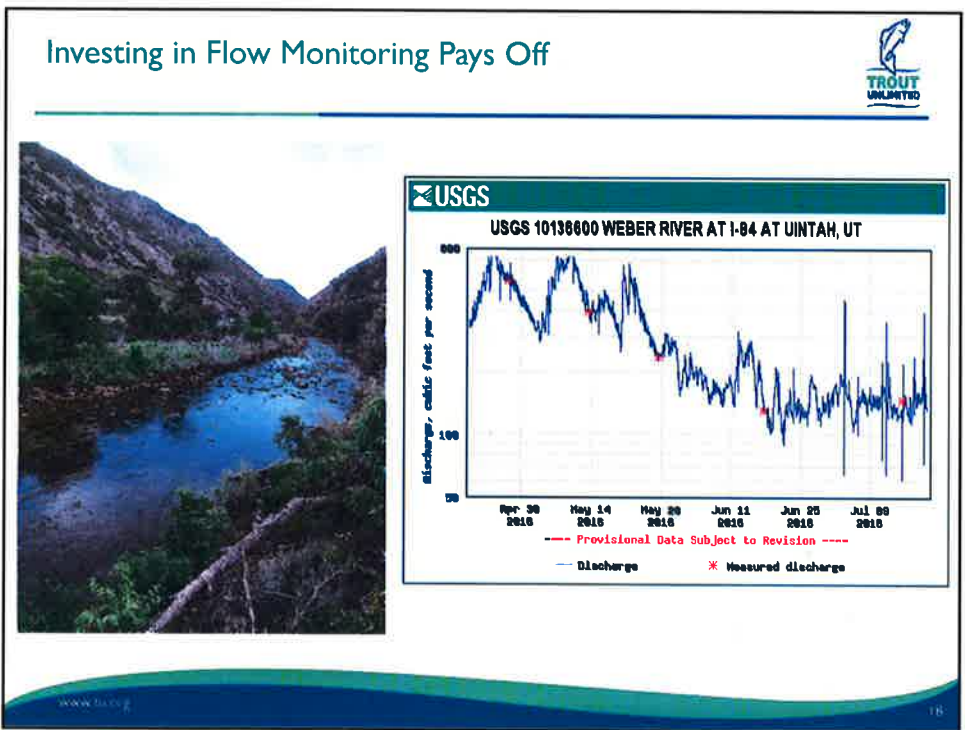
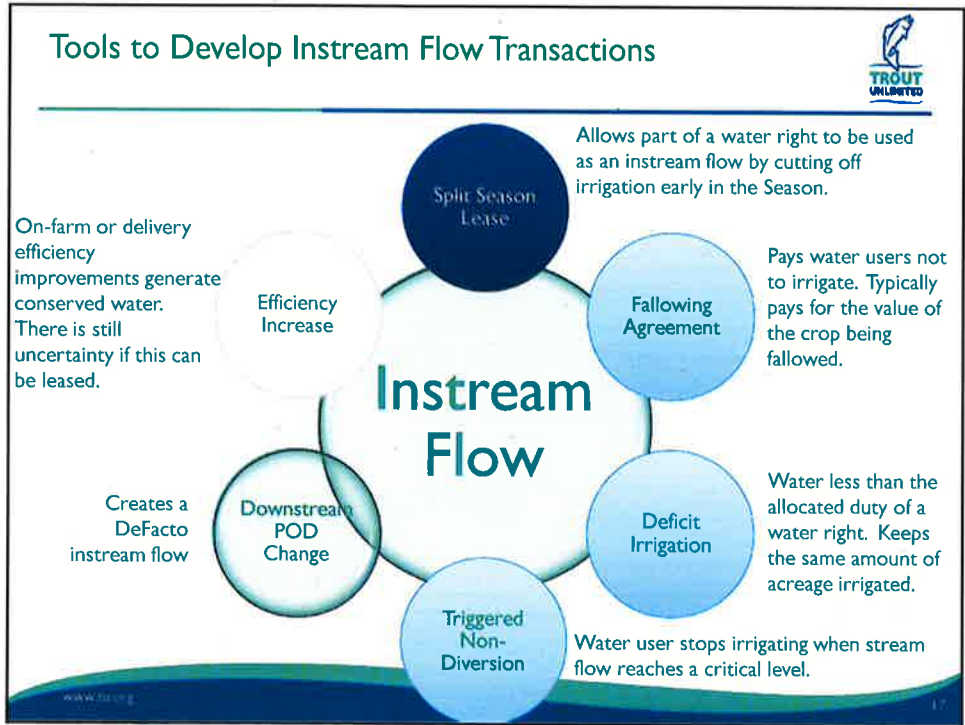
Identifying the Right Places for the Right Strategies



- ☛ UTTU developing an flow transaction strategy
- ☛ Partnerships
- ☛ Priority Areas
 - Bear River
 - Price River
 - Weber River
- ☛ Funding Strategies
 - SCPP – Colorado River System Conservation Pilot Program
 - Impact Investing
 - Infrastructure funding

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Impact Investing



- 🐟 The role of natural resources in supporting economic prosperity is increasingly being recognized. Markets are being developed around a variety of these resources and ecological processes.
- 🐟 Investors contribute to infrastructure projects that have mutual benefits
 - Infrastructure Projects
 - Efficiency Projects
- 🐟 Impact investing brings financial resources not traditionally available to water users, in exchange for an ecological output

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Challenges Still Ahead



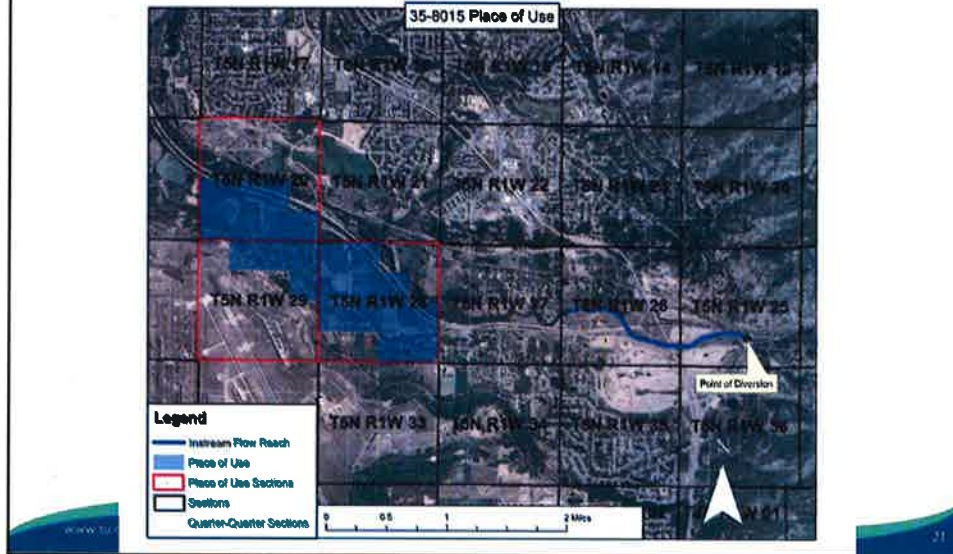
- 🐟 Shepherding leased water downstream



Challenges Still Ahead



- Filing on conserved water from efficiency projects




Thank You

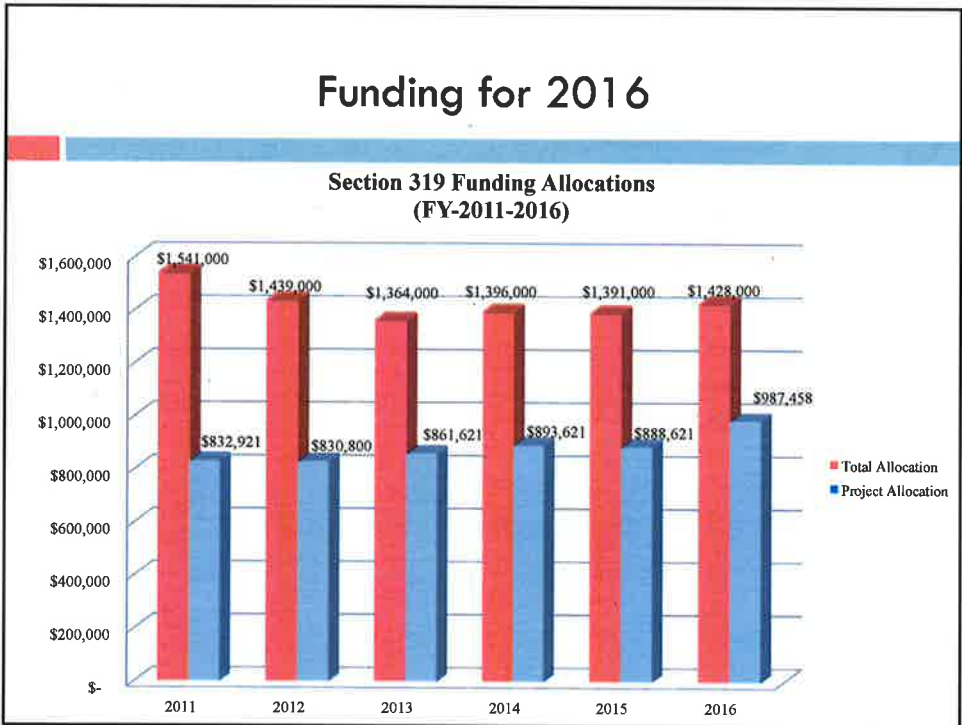



- Utah Flow Transaction Strategy
 - Jim DeRito
 - Jordan Nielson
 - Timothy Hawkes
 - Laura Ziemer
- South Weber Irrigation Company
- Lawrence T. and Janet T. Dee Foundation
- The Nature Conservancy
- Utah Division of Wildlife Resource
- National Fish and Wildlife Foundation
- US Forest Service
- Bureau of Land Management
- US Fish and Wildlife Service

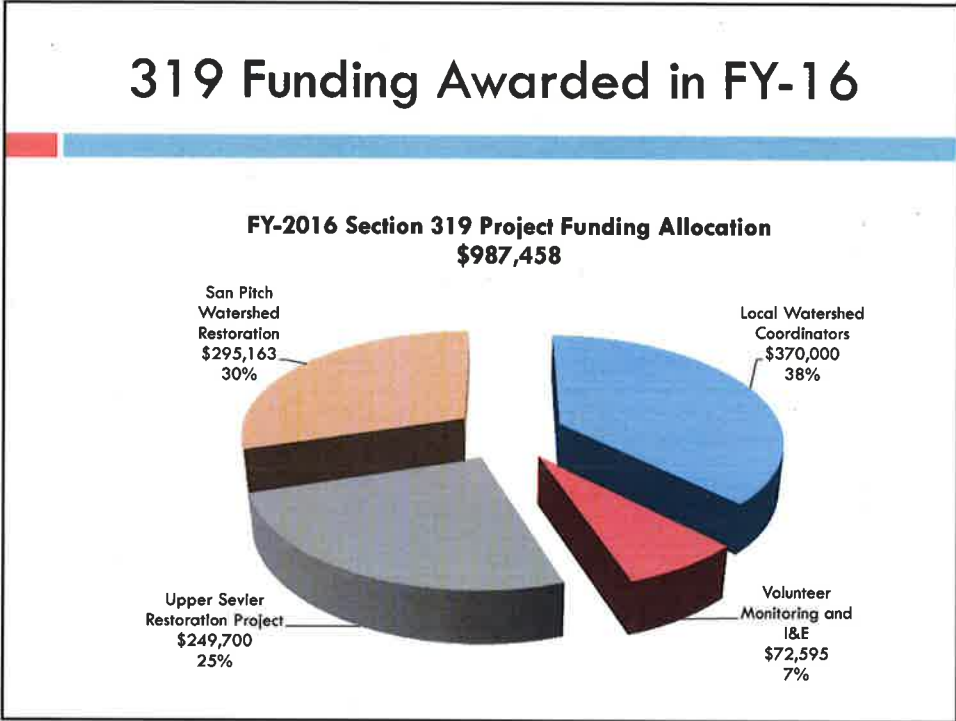
FY-2016 UTAH NONPOINT SOURCE POLLUTION ANNUAL REPORT



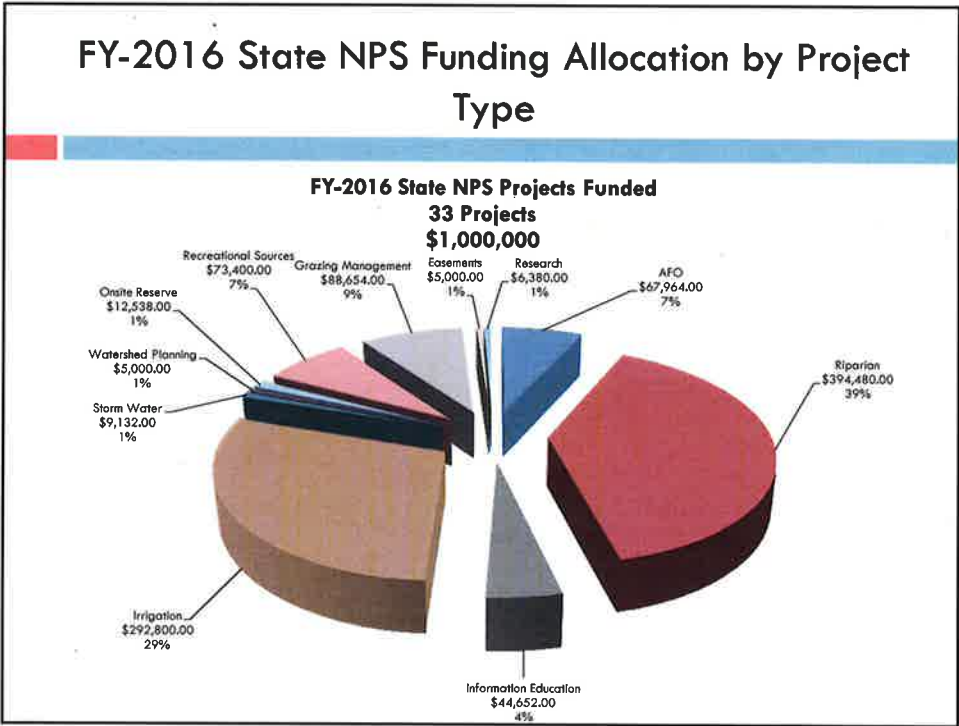
Jim Bowcott
Utah Division of Water Quality
Utah Water Quality Board Meeting
August 24th 2016



319 Funding Awarded in FY-16



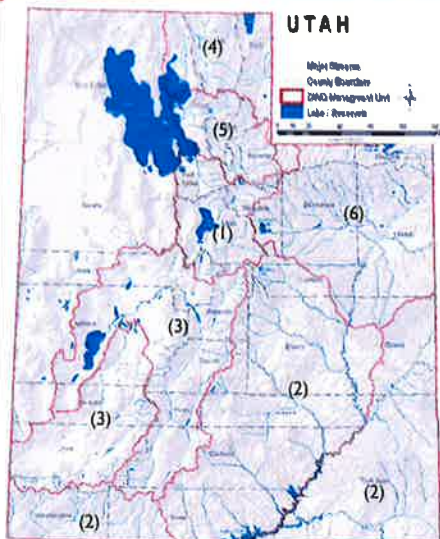
FY-2016 State NPS Funding Allocation by Project Type



FY-2017 Nonpoint Source Pollution Grant Schedule

- Application Period: March 1st through May 16th
- Projects ranked internally: May 17th through June 6th
- Meeting with partner agencies: June 9th
- Final Grant approval: June 10th
- Official announcement of grant recipients: June 10th

The Watershed Funding Cycle

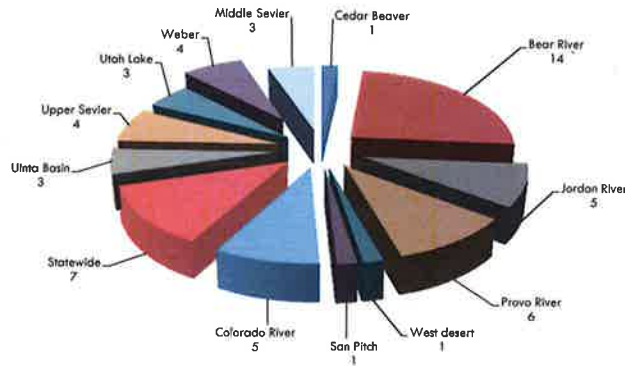


Watershed	2014	2015	2016	2017	2018	2019
(1) Jordan/ Utah lake						
(2) Colorado River						
(3) Sevier, Cedar-Beaver						
(4) Bear River						
(5) Weber River						
(6) Uinta Basin						

FY-2017 Nonpoint Source Applications Received

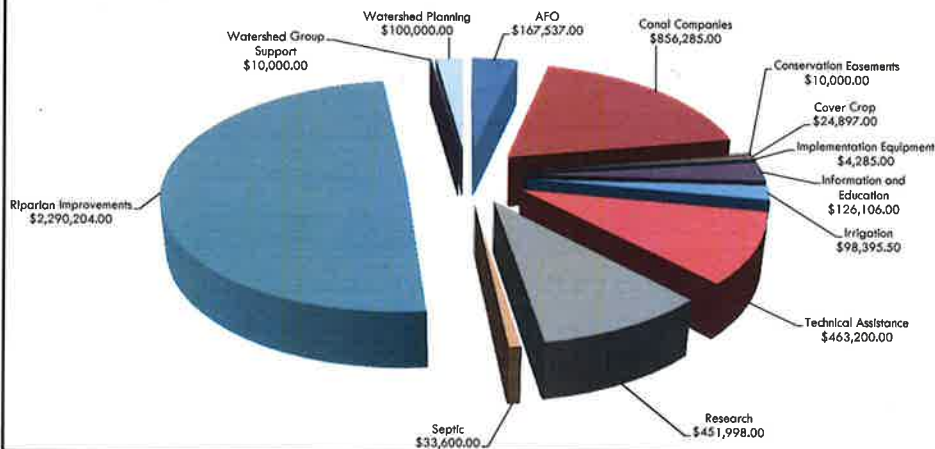
58 Grant Applications were received totaling \$4,668,508.

2017 Applications Received By Watershed



Project Application Amounts

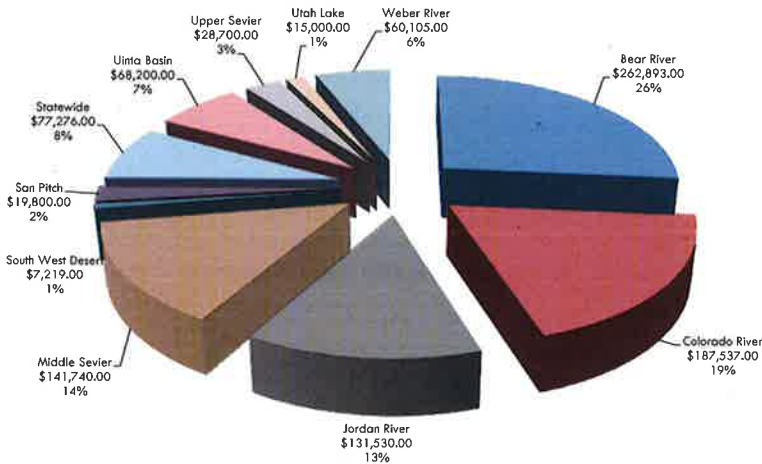
Project Application Amount \$4,636,508



CA1

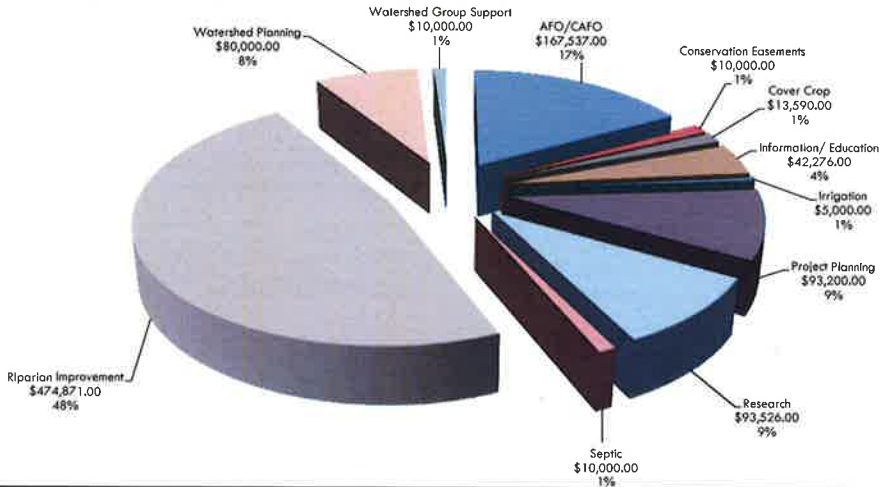
Projects Funded with State NPS Grants

**FY-2017 NPS Grants Awarded
\$1,000,000**



BMP Types Funded with State NPS Funds

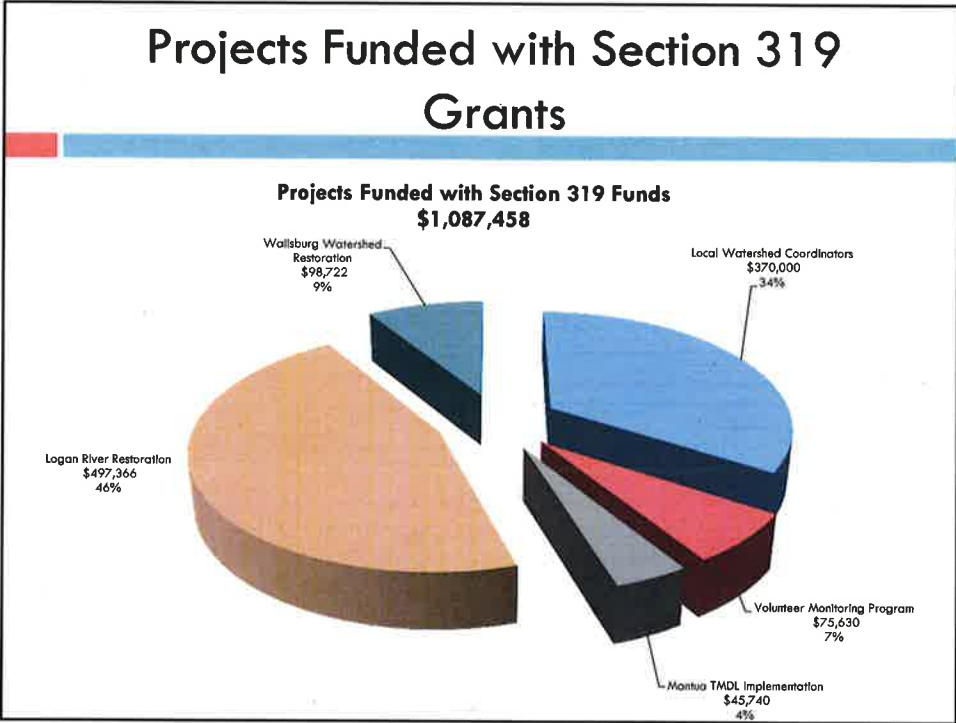
**BMPs Funded with State NPS Funds
\$1,000,000**



Slide 9

CA1 Capitilization on "south East colorado" needs to be corrected
Carl Adams, 6/15/2015

Projects Funded with Section 319 Grants



Partner Funding on FY-2017 NPS Projects

Funding Source	Amount
Natural Resources Conservation Service	\$1,597,056
Division of Wildlife Resources	\$554,370
City/ County	\$649,961
Water Districts	\$16,750
Other	\$1,083,011
Utah Department of Agriculture and Food	\$37,732
Landowner Match	\$1,568,699
Total	\$5,507,579

Almost a 3:1 Ratio

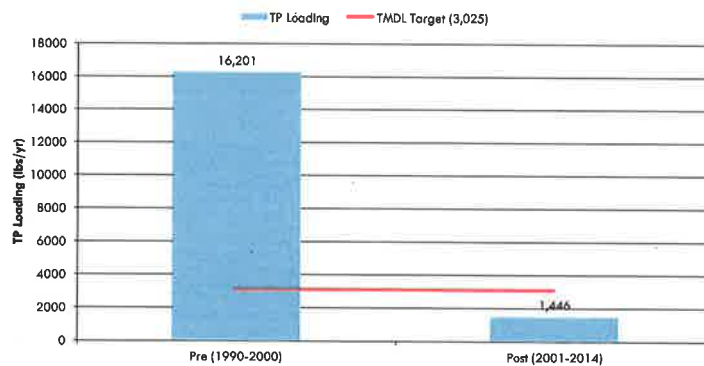
Strawberry River/Reservoir Successes

- ❑ Over 12 miles of stream banks restored, and fish habitat improved.
- ❑ Limited Cattle Access, including a grazing allotment in the upper section of the Watershed.
- ❑ Work has begun on other tributaries such as Mud Creek.



Strawberry River

TP Loading in the Strawberry River Before and After Restoration

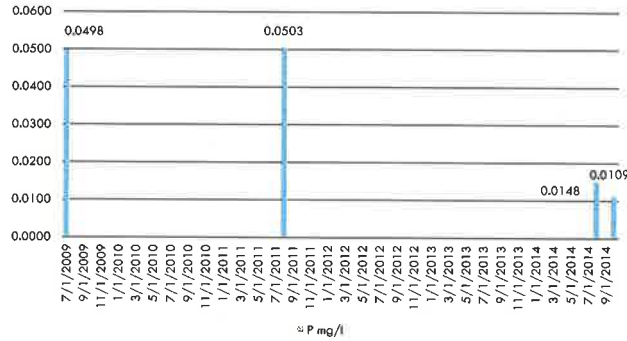


- The project work has resulted in a 91% load reduction from the Strawberry River
- This is much lower than the load reduction required by the TMDL

CA2

Strawberry Reservoir

Average Phosphorous Concentration
Strawberry Reservoir



NPS Program Success

East Canyon Creek

- ❑ Over 11,000 linear feet of stream channel restored.
- ❑ More than 10,000 plants of varying species and maturity planted.
- ❑ Over 21,000 feet of riparian fencing installed.



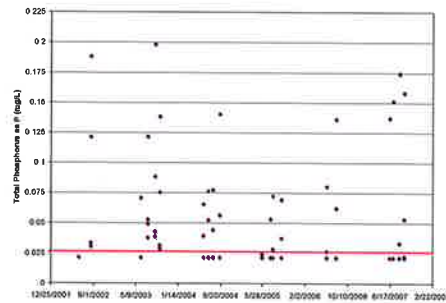
Slide 15

CA2 Round off to significant digits (thousandths)
Carl Adams, 3/9/2016

CA3

East Canyon Reservoir

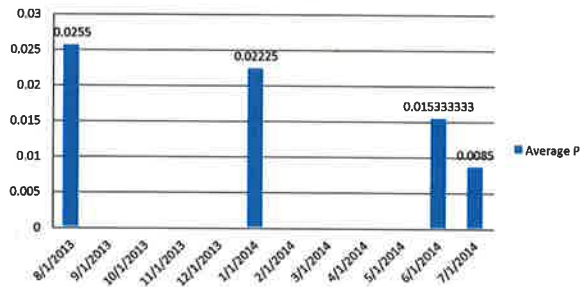
- Over 50% of all P data from 2001 through 2008 exceeded the 0.025 mg/L threshold.



CA4

East Canyon Reservoir

East Canyon Reservoir
Total Phosphorous



Date	Average P	Number of Samples	Number Exceedances
8/21/2013	0.0255	14	7
1/16/2014	0.02225	4	1
6/5/2014	0.015333333	12	0
7/9/2014	0.0085	8	0

Slide 17

- CA3** Can you plot the data shown in the following slide (bar graph) on this plot to show reduction in TP concentrations? Comparing a scatter plot to a bar graph requires too much interpretation on the part of the audience.
Carl Adams, 3/9/2016

Slide 18

- CA4** I'd rather these data be plotted along with the preceding scatter plot but for future reference any data should be rounded to significant digits. You should also be prepared to interpret what these reduced concentrations means in terms of beneficial use, i.e. reduced algae growth and cyanobacteria that will preserve higher oxygen levels in the reservoir and benefit recreational use and the fishery.
Carl Adams, 3/9/2016

Questions???

