

Lake Powell Pipeline: Local Options

Presentation to Executive Water Finance Board

September 17, 2018

Presenter: Lisa Rutherford, CSU Board



Conserve Southwest Utah

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Conserve Southwest Utah

Who we are...

Grassroots organization since 2006

CSU's leadership and board background...

Management, engineering, financial, legal and environmental

Program areas...

Water, public lands (SUNCLF), smart growth, air/climate

What we are and have been doing...

Review all state study reports submitted to FERC

Comment during all FERC comment periods

Attend state and local meetings

Served on Governor Herbert's water strategy team

Present information to citizens

Engage leaders at state and local levels – at least try

Work with experienced and knowledgeable NGOs

Let's be clear. We are not “no growers”!

For 12-years we have searched for answers but have not been able to get the data that validate the claim that we are running out of water and need LPP.

We appreciate having the EWFB dig into the details on behalf of all Utahns.

The background of the slide features several concentric, light blue circular ripples that resemble water droplets or raindrops, scattered across the bottom half of the image.

CSU Main LPP Concerns



Financial risk

- Risk to our county and state
- Pumped Storage Project cost

Water right risk - overallocation

- Reduced CR water and Utah's 23% allocation reduction

Water quality – quagga mussels

Conservation – cheaper alternatives not considered

- Targets (compared to other SW communities), inadequate planning

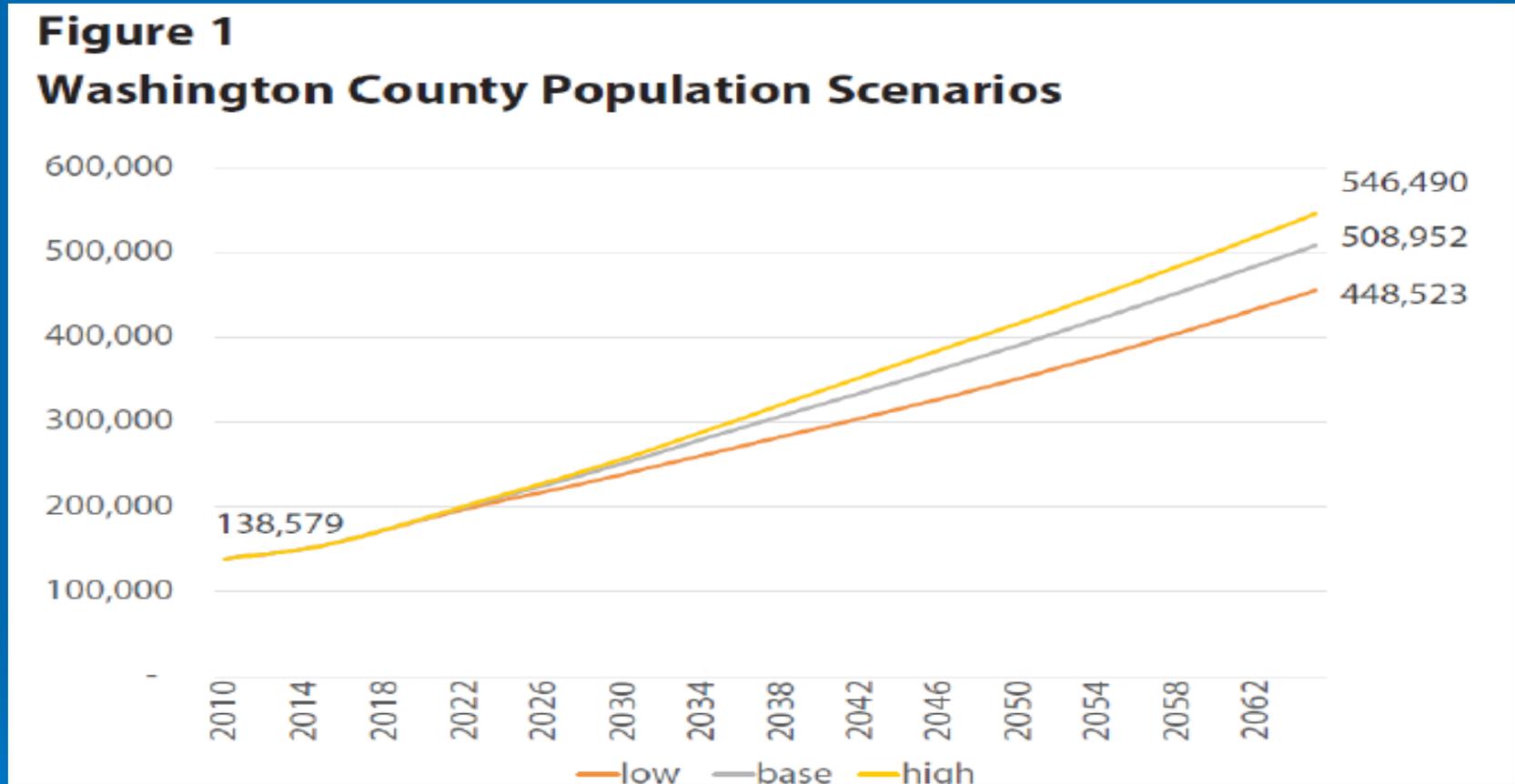
Agricultural policies and practices – how much and how used

FERC studies and data outdated to determine need

Local M&I water use and supply – addressing today

Latest population projections for Washington County

508,952 – “2065” WC baseline



2008 2060 projection: 860,000 2012 2060 projection: 581,731
Total decrease from 2008 projection: 351,048! (new 2065 baseline number)

Supply demand based on overuse

The best estimate of reliable supply represents the approximate annual volume of water that is reliably available to meet ***peak demands***, reported in the DWRRe Water Use Projections (WCWCD 2014; DWRRe 2014c).

...the largest amount of water is used from April through October, during the irrigation season. Throughout the rest of the year water use is fairly constant.

Demand projections based on our current high use.

Reasons for Washington County's High Water Use

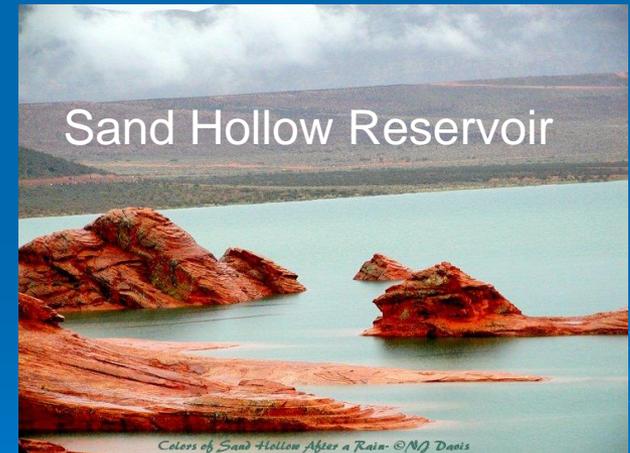
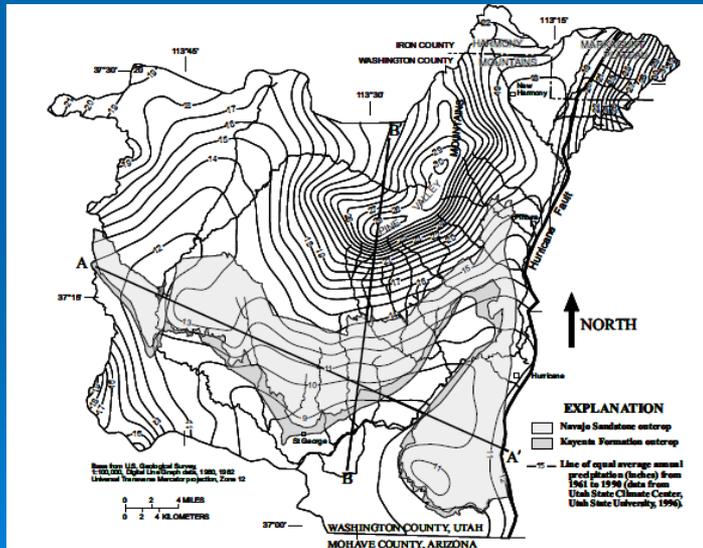
- Institutions (schools, churches, golf courses) and businesses are generally not landscaped as desert properties
- Regulations, landscape ordinances or requirements on water use or penalties for wasting water are largely missing
- Communications about the need for conservation are indirect
- Comparative data given to customers on their water use relative to goals and other customers is largely missing
- Lack of conservation water pricing if you use more water

WC water supply components



63% full
Capacity: 40,000af

Navajo Sandstone Aquifer



80% full
Capacity: 50,000af
Storage: 140,000af (4/2016)
Potential: 300,000af



Gunlock Reservoir

Capacity: 10,884 af
Stores Santa Clara River, a
tributary of the Virgin River



Kolob Reservoir

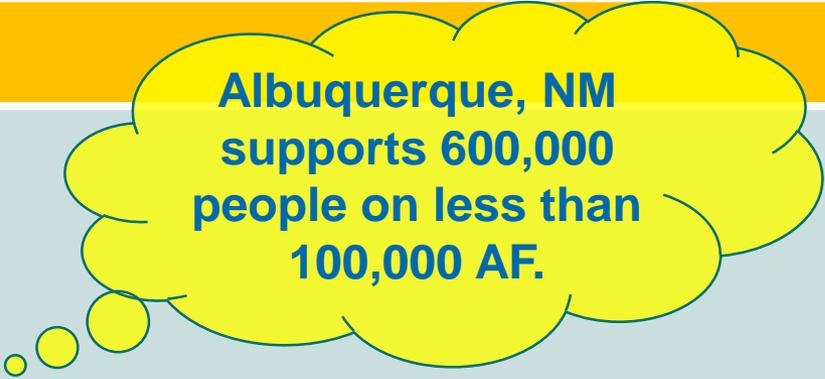
Capacity: 5,586 af
Stores water collected in the
Virgin River watershed



Ivins Reservoir

Capacity: 778 af
Stores water from the Santa
Clara River, a tributary of the
Virgin River

WC supply without LPP

AFY	Source	Comment
32,225	Washington County (WC) – current culinary	 <p>Albuquerque, NM supports 600,000 people on less than 100,000 AF.</p>
35,273	Cities – current culinary	
13,670	WC – future culinary	local projects to deliver additional culinary, or potable water prior to construction of the LPP project - ash creek pipeline and others
17,360	WC – future reuse/secondary	(10,080 ag, 7,360 reuse) (could be much more!)
98,528	Total Existing and Future Reliable Culinary <u>WITHOUT</u> the LPP available by 2060	

Source: Table ES-1 Existing and Future Reliable Culinary Supplies for Washington County 2015 WNA

Changing numbers add to confusion for citizens

Available and reliable water supply without the LPP:

2008 WNA: 125,910 af

2011 WNA: 134,740 af (+8,830 af from 2008)

2015/2016 WNA: 98,528 af

-27,382 af from 2011

-36,212 af from 2012

2018 WCWCD: 60,000 af (potable only)



Lack of Data Accuracy

In 2015 three substantive reports challenged the data used to justify the LPP:

- The Legislative Audit
 - The Governor's Recommendations
 - The Economists' Report on LPP Financing
 - DWRe current M&I study
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Western Resource Advocates

“Local Waters Alternative to the Lake Powell Pipeline”



Founded in 1989, Western Resource Advocates is dedicated to protecting the West’s land, air, and water to ensure that vibrant communities exist in balance with nature. We use law, science, and economics to craft innovative solutions to the most pressing conservation issues in the region.

LWA author: Amelia Nuding

Masters in Water Resource Management from the Bren School at UCSB, and a BA in physics from Vassar College.

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The Local Waters Alternative

by Western Resource Advocates

<https://westernresourceadvocates.org/publications/the-local-waters-alternative/>

- *LWA: Provides for incremental cost as population grows and no immediate huge debt with a ballooning interest = cheaper*
- LWA: Recommends conservation accepted by independent experts as the cheapest and most effective way to increase water supply
- LWA: Provides a “reasonable” alternative submitted to FERC – not as “draconian” as state’s alternative plan
- WCWCD’s new conservation plan – includes many of LWA’s measures, but downplays the yield and exaggerates the cost!

The Local Waters Alternative

LWA Key Recommendations

- Implement conservation rate structures
- Meter and report culinary and secondary water
- Embed water efficiency in new developments and public spaces
- Implement smart growth principles



***Local Waters Alternative to LPP by WRA
(2013)***

Reported water use rates only estimates

Need reliable, recent data

**Phased in water over time will provide
between 116,300 – 138,000 AFY by 2060**

LWA Total Future Supplies

Supply Alternative:	Culinary (AFY)	Secondary (AFY)
WCWCD Current Supplies and Ash Creek	78,400	7,500
Reuse		16,900
Agricultural Water Transfers		13,700 - 35,200
Sub-Totals	78,400	38,000 – 59,600
Total	116,300- 138,000	

Table 7 - LWA

Supply needed based on projected growth

Current use ~303 gallons per capita per day (GPCD)
231 gpcd (potable) + 72 gpcd (secondary)

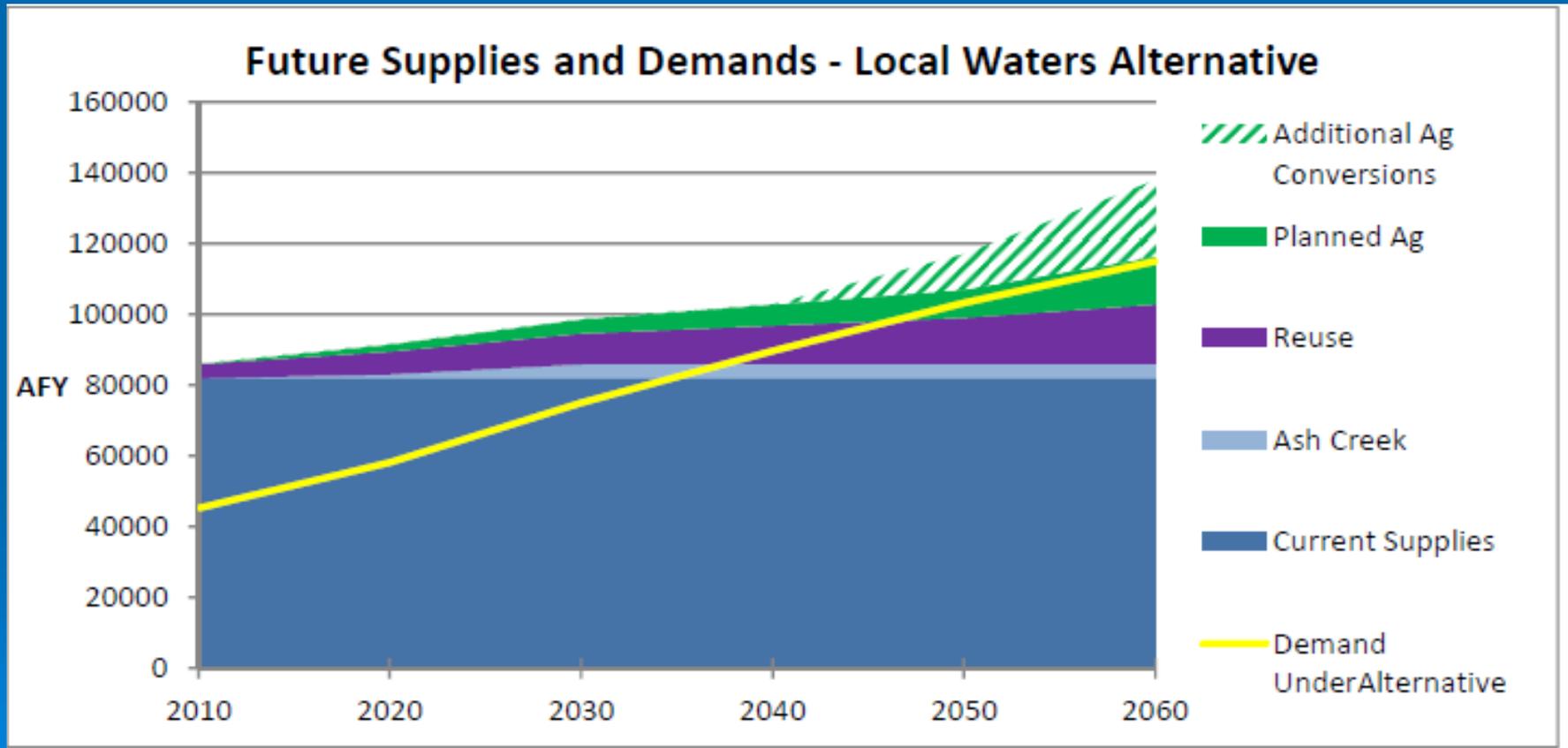
Year	Population (Kem Gardner)	Demand @ 300 GPCD	Demand @ 200 GPCD	Demand @ 150 GPCD
2020	186,618	62,712	41,808	31,356
2030	251,636	84,561	56,374	42,280
2040	320,956	107,855	71,903	53,928
2050	391,468	131,550	87,700	65,775
2060	468,830	157,547	105,031	78,774
2065	508,952	171,030	114,020*	85,515

District can easily provide more than this WITHOUT the LPP and with very little AG conversion: 98,528 afy

* LWA asserts that 116,000 – 138,000 afy could be provided WITHOUT LPP.

LWA Supply/Demand to 2060

- Water supply phased in incrementally over time
- Supply options can be developed in different ways at different times
- Allows for greater flexibility in meeting future water needs



Demand based on old 581,700 projection for 2060 – current pop projection 468,830 (Kem Gardner)

Benefit of LWA

From “Protecting Bond Rating” presentation
3/10/09 by David Robertson of Lewis Young:

- Postpone growth-related projects – helps ease bonding concerns
- Plan for future based on actual data

Future Source Opportunities – not all!

- **Increased yield off existing sources**
- **Virgin River below LaVerkin hot springs**
- **Quail Creek Pipeline capacity expansion**
- **Planned Warner Valley Reservoir**
- **Water loss control**
- **Water reuse expansion**
- **Storm run-off capture to recharge aquifers**
- **Additional undeveloped city/town water rights**
- **Private & underground water rights including AG**
- **More AG water converted to culinary use**
- **Treatment of brackish and arsenic water**
- **Residential rooftop rain collection**

Other possible supply sources

The district is unwilling to declare more of its storage as supply to 2060.

Storage Facility	Capacity (AF)	Declared Yield (AFY)
Quail Creek Reservoir	40,000	
Sand Hollow Reservoir	50,000	
Total Reservoirs	90,000	24,900
Sand Hollow Aquifer		
Identified 4/2016*	140,000*	4,000**
Potential 300,000 af		
Total	230,000	28,900

* Per USGS

** 4,000 AFY yield based on only 100,000 af in SH aquifer

4,000 AFY yield on 100,000 AF in SH = 12,000AFY yield on 300,000?

Do we have enough water or not...

Dec 2015 Fitch Rating Agency's report asserts we do:

“About 28% of the district's 32,000 acre feet (af) per year of water sources is surplus and will be used to serve future growth and another 13,900 af will come online in the next few years.”

The district is operating a groundwater recharge program that currently provides access to 100,000 af of stored water and will ultimately provide up to 300,000 af.”

2017 Fitch report, in addition to the above:

AMPLE WATER SUPPLY: Approximately 55% of district water rights are allocated for sale under take or pay contracts and a regional water sales agreement. The remaining rights will support future growth. Minimum charges from the existing sales are sufficient to support operations and debt costs.

The water district provides Fitch with information for their ratings.

Possible Water Supply – Virgin River below LaVerkin hot springs

In Washington County, water quality of the Virgin River below the LaVerkin hot springs is a significant issue affecting potential supplies, which are therefore not planned for implementation within the study period; **these supplies could be part of a longer term water supply portfolio if identified problems are resolved.**

If adequate storage and additional water supplies were available, it **may become possible to blend high TDS Virgin River water with a lower TDS supply from another source** (e.g., reuse water and excess Santa Clara Project Water) to create water suitable for secondary untreated M&I purposes.

Virgin River below the LaVerkin hot springs supplies **could be part of a longer term water supply portfolio** if identified problems are resolved.

Possible Water Supply – Quail Creek

The Quail Creek Pipeline's capacity also limits the ability to capture and move water into storage. If snow melts quickly, the period of time to capture water in a fixed capacity pipeline is limited. If precipitation comes in abrupt rain events causing streamflow to exceed the pipeline capacity, that water is lost and the system's storage is not improved.

Planned Water Supply - Warner Valley Reservoir

A “footnote” on 2017 RWIFFP&A:

The District determined the Warner Valley Reservoir **is outside the 10-year planning window** due to the length of time it will likely require to obtain the necessary federal permits and the higher costs of treating water through current reverse osmosis technology. However, this project remains on the District’s long-term planning horizon. The municipalities that are **parties to the Regional Water Supply Agreement have approved it, and it is anticipated that it will become more cost-effective as reverse osmosis technology improves over time.**

Warner Valley Reservoir - increase, protect & enhance supply

- Planned to store up to 55,000 acre feet at full capacity
- Capture and store Virgin River water rights that currently flow downstream
- Store water produced by the St. George water reuse plant during the winter months and excess Santa Clara project water
- Provide irrigation water to southern developments in Washington and St. George cities
- Conserve treated culinary water
- Improve water quality
- Provide drought protection
- Allow for more efficient irrigation methods
- Largest reservoir in Washington County

Not included in plans to FERC

Not included in Local Waters Alternative to LPP

Controlling water loss means extending supply

We don't know how much we are losing!

Lost water and lost revenue– leaks and unmetered consumption

2018 study did not include St. George – only Hurricane & Ivins – why?

Metering needed – secondary, esp.

Data problems, particularly with secondary use and supply

Estimates of secondary use not adequate

System “loss” needs to be considered in water demand – 15% increase
– AWWA M36 audits

State should continue to explore options to encourage broad implementation of secondary metering.

Future of Water Reuse in Washington County

From 2005 Water Reuse in Utah – Exec Summary

- **Potential for reuse to meet demand is promising and already occurring elsewhere**
- **Eventually reuse will become essential due to population**

Current major limitations on reuse to extend our water supply:

- **Education – People don't understand value and concept**
- **Leadership – Leaders don't heartily support and encourage**
- **Utah law - 2006 changes in law limit reuse projects**

Why wait?

Will all areas of Washington County benefit from the LPP?

Because portions of the Districts' service areas are distant from the proposed LPP alignment, there *may be economic and engineering limitations to supplying project water to all areas*. However, indirect use of LPP water may be possible in some seemingly remote areas through exchanges and substitute supply agreements. As a result of these potential partnerships, the majority of each district's service area was evaluated in this assessment. WCWCD and KCWCD demands and water supply projects were evaluated independently.

Enterprise was not included in the analysis because of its distance from the LPP and unlikeliness of exchange agreements involving LPP water taking place.

All water users included in studies – but not all will benefit!

Recommendations

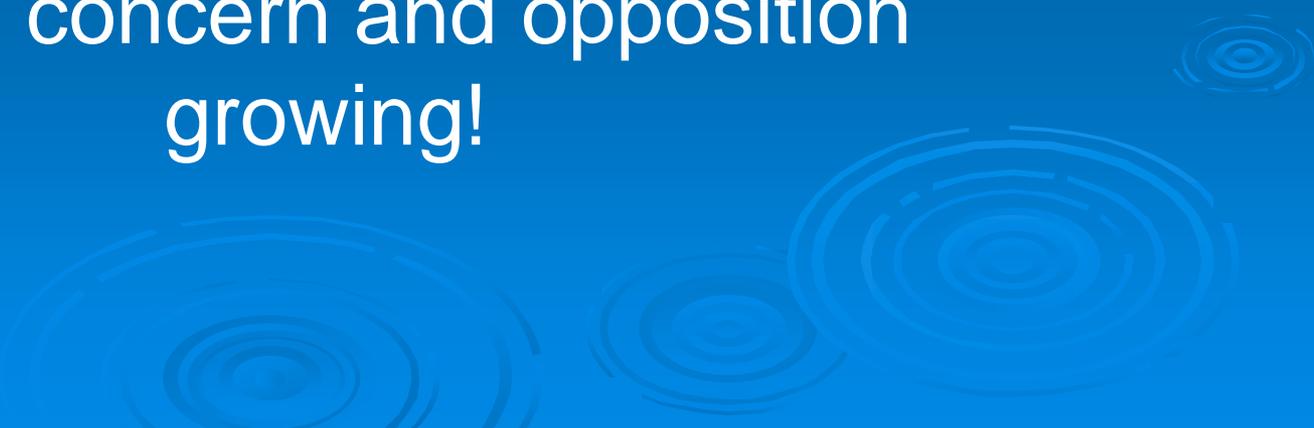
- Reject flawed/outdated FERC data - studies should not be used to make decisions about the LPP
- Fund existing infrastructure improvements/repairs before new projects (SB 281 WIRA)
- Research cheaper alternatives for WC water such as those in the Local Waters Alternative to the LPP
- Update water supply with all water
- Work to change state law that restricts water reuse
- Resolve state's own overallocation of Colorado River water rights
- Provide funding and software for developing water budgets

See our web page on water budgets/water conservation.

What have 11 years of work and over \$30 million spent on study and FERC reporting bought?

Public engagement process –
FERC – very complex
CIRPAC – very biased
EWFB – Provides hope!

Citizen concern and opposition
growing!



Governor's focus

- Better water data and better data reporting
- New and meaningful water conservation targets
- Independent validation
- Local funding effort and increased emphasis on user fees
- Transparency and local voter engagement – he's called for a public vote on this project!
- Appropriate payment and loan terms

In the final analysis

When it comes to water...

we don't know how much we have

we don't know how much we've already divvied up

we don't know how much we use.

Until we have better data, all else is moot!



The Lake Powell Pipeline



Will it stand the test of time?

Questions?



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