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GREAT BASIN
WATER NETWORK

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GreatBasinWaterNetwork.org

August 25, 2016

Thank you for inviting Great Basin Water Network to submit items for inclusion in Great Basin National Park's time capsule. As an organization based in Baker and dedicated to the preservation of the surrounding areas for future generations, we feel a close alignment with the goals of the National Park Service as we celebrate the momentous occasion.

For over 10 years our network has worked hard work to protect the most precious resource in the park and region: water. Included you'll find a brochure and timeline highlighting key aspects of our work through August of 2016. We look forward to adding more milestones to it in 20 years, when hopefully Nevada and the West have embraced sustainable water policy and halted disastrous diversion projects to fuel irresponsible growth.

Also included is a calendar with recent photographs of Snake Valley and the park. Let's ensure these scenic views remain so the next generation can marvel at the protection of these pristine resources.

We can't look forward without also looking back. You'll find a copy of our newsletter in this capsule including reflections from Delaine Spilsbury, whose grandmother survived a massacre of Shoshone Indians at the sacred cedar grove in Spring Valley. Hopefully this spiritual site remains intact when this letter is removed, and agriculture continues to play a role in the area's future as it has in the past.

These areas would immediately be marred by the presence of a water pipeline. In addition, the BLM's environmental impact statement for the pipeline indicates the irreversible impacts of its development and operation including the loss of native vegetation, springs, and streams. These resources are key habitat for the wildlife in and around the park and natural deterrents for fugitive dust. As we celebrate the opening of the observatory, GBWN reminds its supporters that our work is critical to protect these dark, clear dust-free night skies, which are becoming increasingly rare worldwide. We've included the lists of those impacts as a reminder of what's at stake.

This is a celebration of community, and GBWN would not have been sustained without the support of area residents, officials, and businesses. The Snake Valley Festival has brought everybody closer together while raising crucial funds for our organization. Attached are pictures of our bumper stickers, a modest contribution to the area's culture (along with our piece of water pipe and giant bucket) and our nod to the unique road art lining the path to the park.

We wonder if our USB drive containing our website can still be plugged into any average computer in 20 years. While it will certainly appear outdated, it chronicles in detail the work GBWN has done, and we're optimistic about the additions that will need to be made. The story of the park and our network is one of community, protection, and the ability to accomplish great things if you believe in them and work diligently towards them.

A handwritten signature in black ink that reads "Howard Watts III". The signature is fluid and cursive, with the last name "Watts" being particularly prominent.

Howard Watts III, Communications Specialist

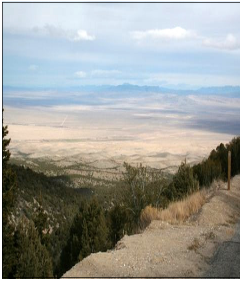
Attachment 1:
GBWN/ Pipeline
Timeline

1989	Las Vegas Valley Water District files on all unappropriated water in Snake, Spring, Cave, Dry Lake and Delamar Valleys
1990	Protests filed by local residents, conservation interests, Great Basin National Park (GBNP) and the Bureau of Land Management (BLM)
1991	Southern Nevada Water Authority (SNWA) formed, taking over the project from LVVWD
1999	Nevada Legislature adds interbasin water transfer requirements to Nevada's water law, thanks to the advocacy of knowledgeable water policy advocates
2004	Lincoln County Conservation, Recreation and Development Act (Public Law 108-424) facilitates pipeline corridor. Also requires agreement between Nevada and Utah on the division of shared groundwater, EIS and BARCASS carbonate aquifer study
	First road tour of Eastern Nevada areas targeted by SNWA project
	Research into comparison between Nevada water grab and Owens Valley CA initiated
2005	First water strategy meeting is held in Baker, and the need is identified to establish a separate group to work on water importation projects
	Pacific Institute study on water conservation in Southern Nevada begins. The study — Hidden Oasis: Water Conservation and Efficiency in Las Vegas — was published on November 26, 2007
	The Bureau of Land Management (BLM) Environmental Impact Statement (EIS) scoping process is initiated; activists turn out hundreds to public meetings and generate thousands of comments
	Senator Harry Reid (NV) dedicates the Great Basin National Park (GBNP) Visitors Center
2006	Great Basin Water Network (GBWN) is founded
	Nevada State Engineer (NSE) holds a hearing on 1989 Spring Valley applications and protests
	Agreement reached by SNWA, BLM, The National Park Service (NPS), the United States Fish & Wildlife Service (USFWS), and the Bureau of Indian Affairs (BIA) [without tribes' consent]. The agreement stipulates the withdrawal of federal protests of SNWA applications in Spring Valley in return for a future monitoring and mitigation program of groundwater pumping impacts. This was a secret process — the public and White Pine County, NV were excluded
	GBWN files suit over the NSE's exclusion of protestant successors and new residents, and lack of adequate notification for protestants.
	BLM re-scopes Environmental Impact Statement (EIS) because project description changes
	Road tour initiated in June to show people the areas in Lincoln and White Pine Counties affected by the water grab

2007	GBWN receives 501(c)(3) tax exempt status
	NSE approves 80,000 acre-feet per year (afy) of annual pumping in Spring Valley, following 3 periods of testing and monitoring. GBWN did not appeal
	Water Grab receives national and international media coverage, as reports published by Defenders of Wildlife and The Pacific Institute are released
	Spotlight report reveals secret negotiations between Nevada and Utah officials on shared water agreement
	SNWA purchases ranches in Spring Valley Nevada for \$78,900,000 in ratepayer dollars
2008	New allies join GBWN, including the Nevada agricultural community, Center for Biological Diversity, and National Parks Conservation Association
	NSE hears Cave, Dry Lake and Delamar Valley applications, approving 18,755 afy (4,678 Cave, 11,584 Dry Lake, 2,493 Delamar). GBWN appeals to NV District Court
2009	First Snake Valley Festival is organized by community members to raise awareness and funds to support GBWN's efforts
	District Court ruling reverses the NSE decision on Cave, Dry Lake, & Delamar Valleys
	Central Nevada Regional Water Authority holds first statewide Water Forum
	BLM delays release of draft EIS to address over 2,000 comments from Cooperating Agencies and to fix hydrologic model
	Dean Baker begins water tours of Baker Ranch and Snake Valley
2010	Nevada Supreme Court unanimously rules in GBWN's favor in challenge to Spring Valley protest process
	Utah Governor withdraws Utah negotiators from talks on bi-state water agreement after Supreme Court ruling
	NSE reopens protest period on original applications; SNWA refiles all of its applications
	GBWN and residents file over 2,300 protests. NSE does not combine the protests; filing fees total \$56,000.
	GBWN & allies successfully block SNWA lobby efforts for a "legislative fix" to the Supreme Court ruling at the Nevada Legislature
2011	NSE rehears Spring, Cave, Dry Lake, & Delamar Valley applications, a grueling and costly six week process. Attorneys for GBWN, LDS ranch in Spring Valley, Goshute Tribe, 2 Utah counties, and Eskdale present protest cases
	NSE receives over 23,000 public comments opposing the SNWA applications. In-person comments draw many tribal members and last an entire day
	BLM releases Draft EIS for public comment, holding 9 public hearings. GBWN turns out hundreds and gather 20,461 public comments
	GBWN publishes guide to encourage participation in EIS process. \$15.7 Billion project cost is revealed along with devastating impacts to an area larger than Vermont

2012	NSE approves a total of 84,000 afy from Spring, Cave, Dry Lake, & Delamar Valleys. Snake Valley applications remain in limbo pending bi-state negotiations
	GBWN and others, with sign-ons from over 300 petitioners mostly in Lincoln and White Pine Counties, appeal NSE decision.
	BLM issues Final EIS. 40,000 unique comments are generated by GBWN, Sierra Club, CBD, Water Watch and others
	BLM issues Record of Decision, approving pipeline right of way for Spring, Cave, Dry Lake and Delamar Valleys
	Last Call at the Oasis documentary released; Stewards of the Rangeland Water shown on Reno public TV
2013	Governor of Utah announces he will not sign a water agreement with Nevada, which was negotiated in secret between the states over the past five years. GBWN and Utah allies declare victory as Snake Valley remains off the table... for now
	Attorneys for GBWN, three Tribes, Nevada and Utah counties, and the LDS Church present oral arguments in Nevada District Court, arguing before Judge Robert Estes that the NSE decision on Spring, and CDD should be overturned
	Victory! Judge Estes rules that the NSE decision was "arbitrary and capricious" and the monitoring and mitigation plans need triggers and specificity
	GBWN helps to update and distribute a virtual Baker Ranch water tour on DVD
2014	The NSE and SNWA appeal Judge Estes' ruling to the Nevada Supreme Court, while the SNWA Board votes to continue pursuing the water grab
	GBWN, White Pine County and other partner groups appeal the BLM Record of Decision in Federal District Court
	NSE holds "listening sessions" across Nevada
	SNWA advisory committee reaffirms commitment to pursuing water grab as part of resource plan; this plan is approved by the SNWA board. For additional historical details see the SNWA Water Resource Plan
	Drought and overuse along the Colorado River combine to bring Lake Mead below elevation 1075 - supposedly the trigger point for the project - for the first time since filling.
	The NV Supreme Court issues orders dismissing SNWA's and the State Engineer's appeals, upholding District Judge Estes's remand to the NSE to address deficiencies in allocations for Spring, Cave, Dry Lake, and Delamar Valleys
2016	June 2, 2016 - GBWN and allies file reply brief in federal case challenging BLM's Record of Decision for the pipeline
	Bureau of Reclamation Releases Drought in the Colorado River Basin Insights using open data
	September 14, 2016 - NSE to hold status conference on remand for Spring, Cave, Dry Lake, and Delamar Valleys

**Attachment 2:
Spring 2015
WaterGab
Newsletter**



Water Gab



NEWS FROM THE GREAT BASIN WATER NETWORK HEARTLAND

Volume 5, Issue 1 Spring, 2015

At Risk: Sacred Shoshone Cedars Massacre Site in Spring Valley

Nevada's Great Basin consists of pinion and juniper covered mountain ranges that run North/South like woolly worms with long, wide, mostly arid valleys in between. However, Spring Valley is an exception. Traveling East/West on Hwy 50, one will notice that the floor of Spring Valley is tree covered. These trees, Rocky Mountain Junipers, were pushed there by Ice Age conditions. Their root system is very shallow. Consequently the trees are in extreme danger from groundwater drawdown from the Southern Nevada Water Authority groundwater pipeline and exportation project.



Delaine Spilsbury's grandmother survived the final massacre.

Newe, Nevada's Native peoples were hunters and gatherers and roamed in small familial groups in their search for sustenance. This forest of junipers was centrally located, providing shade during hot summers and became the favorite gathering place for the Newe. Ample water-enabled plant and wildlife proliferated. Many game birds and animals, rare medicinal plants, pinion forests with their ample bounty of nuts were near and fish thrived in the nearby streams and ponds. The "Cedars" became a Sacred Ceremonial site, friendships were renewed, young people found mates, sacred ceremonies were performed and food and medicinal stores replenished prior to snowfall.



Near the Shoshone Pond Natural Area of the BLM

Unfortunately, when the settlers arrived, the ceremonial gatherings were misinterpreted as war parties and massacres occurred. The first two massacres are of official U.S. Cavalry record. A military unit had traveled from Fort Ruby and was not aware of the marshy conditions in Spring Valley. Soon

(Sacred Cedars continued on page 2)

Legal Update: Slow Continued Progress For Water Fight in Courts

The past few months have been a period of relatively subdued activity on the multiple legal fronts in GBWN's ongoing campaign to prevent SNWA's massive Groundwater Development and Pipeline Project from being approved and implemented. But that is not to say things have not been moving forward or that we have not been vigilant.

Nevada State Supreme Court Developments

All parties' briefing on the merits of SNWA's and the Nevada State Engineer's appeals was completed during the fall, ending in December of 2014. Then, this past February, the Court issued an order dismissing SNWA's and the State Engineer's original appeals on the ground that Senior District Judge Estes's 2013 ruling, which overturned the State Engineer's approval of SNWA's water rights for the Project, was a remand order and not a properly appealable final order.

It is important to recognize that the Supreme Court's order dismissing the original appeals does not truly dispose of the issues on appeal because both SNWA and the State Engineer re-submitted all the same issues through Petitions for Writs of Mandamus that still are pending before the Court. In fact, all the briefing that has been submitted to the Court was done so under those petitions. So, we still are waiting to see how the Court handles those issues and whether the

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Water Gab

(Sacred Cedars continued from page 1)

THE
SPIRITS OF
THE VICTIMS
REMAIN IN
THE SACRED
TREES.

after the attack order, many of the cavalry ponies were mired in Spring Valley mud and most of the intended victims escaped. The Newe, now called Shoshone, were not so fortunate at the second Military massacre. Many were killed in this second “skirmish”. Written reports state that men’s penises were cut off and shoved into their mouths and tree branches were shoved into women’s vaginas. Newe believe that because of their violent deaths, the spirits of the victims remain in the Sacred Trees. A third Cavalry massacre was in process but abandoned when attackers became aware that the gathering was not a war party, but Newe gathering pine-nuts.

The final massacre of the Newe (Great Basin Shoshone) was by vigilantes so there is no military record. Two little girls, approximately age eight, hid in a ditch and were not discovered. They were able to

walk south to the Swallow Ranch.

One of the girls, Annie Jack, eventually joined the folks at Ibapah, UT. The other survivor was named Mamie by the Swallows. She lived with the Swallow family until she married a hired hand, Joe Joseph, a Paiute from Shivits, UT. The Josephs made Baker, Nevada their home.

— *Compiled by Delaine Spilsbury, Granddaughter of Mamie & Joe Joseph.*

REF: Davis 1913, Steward 1938, Malouf 1974, Crum et al. 1976, Martineau 1992, Robison 2006, BLM Document no: 8111 BLM NV040-09-1740B 2009 page 6-3



(Legal continued from page 1)

Court schedules a hearing to help it make that decision.

“THIS
REPRESENTS...
SNWA’S ATTEMPT
TO MASK THE
PATENTLY
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SURFEIT OF
QUANTITY.”

While there is no way to know when the Court will take the next step, we expect it to be soon. In the meantime, it seems positive that the Court went to the trouble of dismissing the original appeals and issuing an order that suggests SNWA and the State Engineer ultimately will have no alternative but to comply with Judge Estes’ order below, putting them in the difficult position of having to prove that a demonstrably unsustainable project can be made sustainable.

Slow Progress in Federal Environmental Lawsuit

As those developments have taken shape in our state water law case, there have been some preliminary procedural steps forward in our federal case as well. One of the most significant developments

was the federal district court’s denial of most of the federal government’s motion to dismiss three of the Indian Tribes’ claims. While that motion never challenged or threatened GBWN’s claims in the federal case, the fact that Judge Gordon preserved all but one aspect of one of the Tribes’ claims keeps our allies’ options open, along with ours.

Briefing on the merits has been delayed as SNWA seeks to pad the administrative record by seeking to include referenced studies in their entirety. In our view this is inconsequential and represents nothing more than a continuation of SNWA’s attempt to mask the patently deficient quality of their scientific work with a surfeit of quantity.

Holding The Line On Other Fronts

Beyond our two court cases, GBWN has been vigilant at the legislature (see article page 7) regarding changes in Nevada water law. Finally, GBWN joined with local Snake Valley water rights owners in opposing an attempt by Granite Peak Ranches to resuscitate unproved and moribund water rights by transferring them, with the unspoken aim of making those rights marketable to SNWA for its Project. Just last month, the Nevada State Engineer issued a ruling that adopted key components of our arguments and denied Granite Peak’s most problematic applications.

— *Simeon Herskovits, Advocates for Community and Environment*

Water Gab

Las Vegas Getting Real About Water Issues

It's easy to think that despite all the bad news, Las Vegas residents are oblivious to the fact that they live in the driest city in the nation. The famous fountains at the Bellagio casino still go off like clockwork. While Californians are being forced to reduce water use by a quarter and even Reno area residents are being asked to cut back by 10 percent, anytime our city is brought up, experts trip over themselves to talk about how great and ahead of the curve Las Vegas

“WHY IS SNWA NOT ASKING RESIDENTS TO CONSERVE MORE OR NOT ASKING WATER WASTERS TO PAY MORE?”

is, recycling wastewater and paying people to rip out turf. Sure, Lake Mead is reaching a critical cutback level, but we've already reduced use enough so we won't even feel the first level of pain. But a closer look shows that residents are more concerned than their spokespeople are. Questions and comparisons show Las

Vegas are thirsty for action to see the West safely through the drought. Recently we discovered that Real Water, an alkaline water company owned by Nevada Assemblyman Brent Jones, processes, bottles, and sells water pumped from Lake Mead-- often to other cities. The questionable morals of exporting water from arid areas to those with more rainfall, regardless of the amount, garnered substantial media attention, with GBWN being featured in KNPR's Desert Companion Magazine and State of Nevada radio show. While Pat Mulroy has been on her most prolific PR tour ever, Las Vegas is starting to pose tougher questions to their public utility. Why will today's ratepayers be on the hook for a pipeline to supply tomorrow's growth? Why is Southern Nevada Water Authority not asking residents to conserve more, or not asking water wasters to pay more? What does it say about the future of our community when our top priority is a pipe and pump that can suck the Colorado River at a point where Hoover Dam stops releasing water? What can we learn from communities around the world to become the leaders in water efficiency? Why are we full of studies and forums but short on action? Hopefully the community's voice becomes loud enough that we start getting the answers we deserve. — Howard Watts III, GBWN Communications Specialist



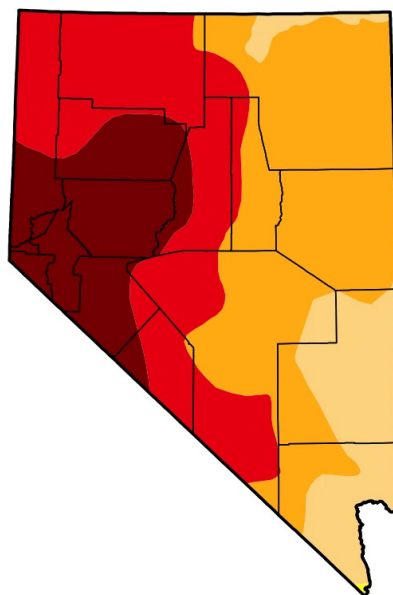
Giant water bucket in Baker, Nev., on the road to Great Basin National Park, sports a new sign. The message? The Water Grab is a disaster for Las Vegas ratepayers and Eastern Nevadans.

Is Megadrought the New Normal?

A new study published in the *Journal of Science Advances* by NASA scientists says that a “megadrought” will hit the US southwest and central plains later this century and remain for decades. The Washington Post, reporting on the NASA study, quoted Jason Smerdon that after 2050, there is “overwhelming evidence of a dry shift, way drier than the mega-droughts of the 1100s and 1200s. [The cause] is two-fold, reductions in rainfall and snowfall. Not just rainfall but soil moisture ... and changes in evaporation that dry out the soil much more than normal.” The article quotes Marcia Kemper McNutt, a geophysicist and editor in chief of the journal *Science*, “We are facing a water situation that hasn't been seen in California for 1,200 years.” Drought conditions during the past 4 years have considerably worsened with all of Nevada in drought; more than 80% is in “severe”, “extreme”, or “exceptional” drought. Is our current drought an anomaly or a prelude to a stretch of dry times unprecedented in the west?

— Dennis Ghiglieri, GBWN

U.S. Drought Monitor Nevada



April 7, 2015
(Released Thursday, Apr. 9, 2015)
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	99.93	85.72	47.96	18.38
Last Week 3/31/2015	0.00	100.00	99.93	79.50	47.96	18.38
3 Months Ago 1/6/2015	0.00	100.00	96.98	68.25	48.38	11.89
Start of Calendar Year 1/20/2014	0.00	100.00	96.98	68.25	48.38	11.89
Start of Water Year 9/30/2014	0.00	100.00	97.04	69.89	48.38	11.89
One Year Ago 4/8/2014	0.00	100.00	100.00	82.21	33.54	8.24

Intensity:
■ D0 Abnormally Dry ■ D3 Extreme Drought
■ D1 Moderate Drought ■ D4 Exceptional Drought
■ D2 Severe Drought

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

Author:
Michael Brewer
NCDC/NOAA



<http://droughtmonitor.unl.edu/>

Water Gab

Will Utah Go “All In” for Water Projects ?



Prepare 60 Coalition of power-brokers has a wish list of \$32 billion of infrastructure improvements needed by 2060.

THE STATE SPENDS A MERE \$250,000 PER YEAR FOR ITS PRIMARY CONSERVATION EFFORT—THE “SLOW THE FLOW” PUBLIC AWARENESS CAMPAIGN.

On the heels of Utah’s warmest, driest winter ever recorded, the political leaders of the state appear poised to go “all in” for big ticket water development while downplaying conservation.

Leapfrogging the on-going, parallel water planning processes initiated in 2013 by Governor Gary Herbert and Envision Utah, Utah’s water power-brokers formed the “Prepare 60” coalition prior to the 2015 Legislature to promote state financing for water infrastructure maintenance, repair, replacement, and supply projects statewide over the next 20 to 45 years.

To tout its agenda, Prepare 60 cites \$32 billion in infrastructure improvements it claims are needed by 2060 to meet Utah’s growing population and water demand. Their vague and sloppily prepared past, present, and distant future “wish list” fuels suspicion that it’s merely a cover for Prep 60’s top priorities: damming and diverting the Bear River to pipe water to the Wasatch Front and building the Lake Powell pipeline (LPP) to St. George.

Pressure to move ahead on the LPP has been building for several years, despite downward revisions in population growth projections. Utah has spent \$27 million to date on LPP pre-development and environmental analysis, and the Federal Energy Regulatory Commission is expected to release the project’s Draft EIS. The LPP,

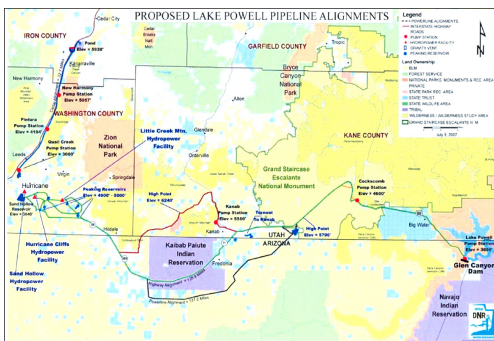
which could cost upwards of \$4 billion and would divert 80,000 acre feet per year from the Upper Basin to the Lower Basin, is the largest water project currently planned on the Colorado River.

The need to develop the multi-billion dollar Bear River Project is even more dubious, but the March 2015 Preliminary Project Schedule, leading to con-

struction in 2028, indicates an increasingly aggressive strategy for big water projects. The Bear River provides nearly 60% of the annual surface water inflow to the Great Salt Lake, so the proposed diversion of 220,000 afy (18-20% of the Bear River’s annual flow) could further lower the already drought-depleted Lake. The “Water Nobility” appears unconcerned about the potential that continued drought, climate change and upstream diversions could result in not enough water in Lake Powell and the headwaters of the Bear to fill these dams and pipelines. Meanwhile, the state spends a mere \$250,000 per year for its primary conservation effort – the “Slow the Flow” public awareness campaign.

Prepare 60 spent over \$250,000 to hire top lobbyists to push for financing of “the list” and these two huge water projects during the 2015 Legislative Session, which culminated in the enactment of Senate Bill 281. Introduced late in the Session and substantially altered in a series of conference committees on the final day, SB 281 creates a new Water Infrastructure Restricted Account and specifies that funds will be administered by the Division of Water Resources and allocated by its Board for the LPP and Bear River projects, as well as work on federal water projects for which there are no federal dollars available. The bill seeded the Restricted Account with a last minute \$5 million appropriation of “surplus” cash from the state’s General Fund.

While that amount seems insignificant (about one-half of one percent of the cost of the LPP), it does open the door for what we anticipate will be a major play to earmark sales taxes or general obligation bonds next year to capitalize the Account. It appears that Utah will follow Colorado’s lead in putting its chips on the line for big water development rather than less glamorous conservation efforts – all while thumbing its nose at the Lower Basin States. — Steve Erickson, GBWN Board



The proposed Lake Powell Pipeline is the largest water project currently planned on the Colorado, at a cost of \$4 billion and diversion of 80,000 acre feet per year.

Snake Valley Festival

Small Town Parade

**Snake Valley Slither
5K - 10 K**

**Silent
Auctions!**

Yard Sale!

Book Sale!

50-50 Raffle!

More Booths!



**Ice Cream
Social**

**Community
Breakfast**

BBQ Dinner

Bake Sale

Beer Tasting Party!

Massive Water Fight

Pageant for All Ages

Music! Music! Music!

**June 19-21, 2015
Baker, Nevada**

Support Snake Valley in the legal battle to keep its own water!

<http://ProtectSnakeValley.org/festival.html>

Water Gab

Nevada Legislature Considers Water Law Changes

By the time you receive this, the 2015 Nevada Legislative session will be close to adjournment (*sine die*). However, the session has been roller-coaster-active with State Engineer workshops plus legislative workshops and hearings in each house. Your Network has been interested in a number of water bills, some of which are summarized here, status as of press time:



SB 65: The State Engineer (NSE) proposed bringing NRS 533 and 534 into modern language. Key issues: the definition of perennial yield (proposed & deleted); interbasin transfers (changing the parameters requiring evaluation); and dealing with domestic wells. It passed out of committee but died one vote short of the 2/3 majority needed.

SB 81: NSE requested a bill to give him more tools to correct severely over-appropriated groundwater basins (Pahrump and Diamond Valley) called Critical/Active Water Management Areas. The bill allows local folks 5-10 years to fix their own problem. If not, the NSE would have the power to actively manage the basin and its users. Nevada has 26 over-appropriated basins. The bill was referred to Senate Finance & needs a 2/3 majority.

SB 485: Requires vested water rights holders to file their claims and proofs within 10 years of passage. Many vested holders are unknown to the NSE's office, have had 100 years grace period, and need to firm up their rights legally. When the NSE adjudicates a groundwater basin, he/she needs to know all uses. It passed out of the Senate unanimously.

AB 198: Requires the Legislative Committee on Public Lands conduct a study of water conservation and alternative sources of water for Nevada communities during the interim. Approved by the Assembly; awaiting hearing in Senate.

In the next *Water Gab*, we will report on final outcomes from the Legislature and provide an update on the Nevada Drought Forum.

— Susan Lynn, GBWN

Nevada Drought Forum Awaits Report from Western Governors



In April, Governor Sandoval issued an Executive Order to establish the Nevada Drought Forum in response to diminishing water supplies and increasing public awareness about drought in California, Nevada, and the West. A multi-day summit is planned at Lake Tahoe in September. The Forum is patterned on the Western Governor's Assoc. Drought Forum. Read the executive order here: <http://drought.nv.gov/> and follow Drought Forum events through GBWN's website.

Letter to the Editor: High Country News

In March, High Country News did a cover feature on the legacy and achievements of Pat Mulroy, retired director of Southern Nevada Water Authority. GBWN responded with a letter to the editor which HCN published on April 27:

To the Editor: The in-depth profile of Pat Mulroy in last month's issue made the mistake many others have made in evaluating her, abandoning balance and working to explain away the hypocrisies of her tenure as Las Vegas' water boss.

Her hard-nosed tactics may be viewed by admirers as feints meant to foster collaboration among other water managers on the Colorado River, but not for Nevadans in Pat's water grab sacrifice zone. Pat and the culture she fostered at Southern Nevada Water Authority have fought tooth-and-nail against any efforts to reduce the scope of their \$15.7 billion groundwater pipeline project, to set triggers at which the pumps would be shut off (or put into reverse, as suggested in the article), to push more aggressive or innovative indoor conservation techniques, or ratchet up punitive rates for water wasters. They've fought both a full vetting of other options and a thorough accounting of the millions in tax and ratepayer dollars spent on public affairs, property purchases, lawyers, and "experts" whose findings have been challenged by the research of independent analysts and other agencies. Pat may be a collaborator with the other six Colorado River states, but rural Nevadans know otherwise.

If not for the fact that SNWA has been on a losing streak in court, pipe might already be laid. That sounds like strong-arm water grab tactics of the past, not some idyllic new way of pumping. Mulroy is a polarizing figure who has earned the respect of allies and opponents. Now that she's retired, attempts seem to be underway to bur-nish her legacy by softening the edges and inconsistencies coming from her record on this issue. But the hard facts show that while she's given Nevada an outsized role in affairs on the Colorado River and done admirable things, she also stubbornly prioritized and pursued this disastrous eastern Nevada groundwater project against the better judgment of history, science, and law. We would expect that High Country News would provide objective "warts and all" reporting of Mrs. Mulroy's accomplishments and failures. She is not perfect, and High Country News shouldn't cover up those blemishes.

There is no benign name for Pat's Pipeline. It is the Las Vegas Water Grab which accurately conveys Mrs. Mulroy's approach.



Water Gab

**GREAT BASIN
WATER NETWORK**

NEWS FROM THE GREAT BASIN WATER NETWORK HEARTLAND

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greatbasinwaternetwork.org

*Inside...
Snake Valley Festival
Schedule*



Snake Valley Festival Is Buckets of Fun June 19-21 Events Support Water Fight

The seventh annual Snake Valley Festival in Baker, Nev., promises to be buckets of fun for families and friends of all ages. Favorite events are returning, including the water-themed **parade** — so short it goes around twice — music, book booth, ice cream social, **BBQ**, community **yard sale** and silent **auction**. Last year’s crowd pleasing **beer tasting** is back with new and familiar brews—made from Great Basin water. And Sunday’s **5K Slither** is slated: register at active.com. Look for **pies** and crafts. Don’t miss Saturday’s **community breakfast**. It’s all happening at the Festival. **A program is included inside this newsletter!** The festival proceeds go to fighting the water grab.

See you at the Festival, Father’s Day Weekend, **June 19-21, 2015.**

Kudos to Delaine and Rick Spilsbury and thanks to their supporters who made the Spring yard sale in Ely to benefit GBWN so successful!**Facebookers:** GBWN now has a Page. Please “LIKE” GBWN on Facebook and invite your friends....**Our website** is updated daily with current news about the drought and the Water Grab...Check out



Water Gab is a periodic newsletter of Great Basin Water Network to keep in touch with friends and neighbors about what’s happening with the water grab fight. To learn more, check our **NEW** website for news updates and FAQs: www.greatbasinwaternetwork.org.



“Like” the Great Basin Water Network Facebook page to follow current news. Bookmark the Amazon Smile website, designate GBWN & shop. Amazon will donate to GBWN.



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A grant from the Nevada Rangeland Resources Commission helped to pay for the Water Gab newsletter. THANK YOU!

Attachment 3: BLM
Irretrievable &
Irreversible Impacts
of Groundwater
Pipeline

Table 4-1 Irreversible and Irretrievable Impacts Associated with Surface Disturbance Impacts of the Proposed GWD Project - ROW and Ancillary Facilities

Resource	ROW and Ancillary Facilities			Irreversible and Irretrievable Commitment of Resources
	Proposed Action and Alternatives A, B, and C	Alternative D	Alternatives E and F	
Air	Air pollutant emissions from construction equipment over an area of approximately 12,288 acres and an 8-year period.	Air pollutant emissions from construction equipment over an area of approximately 8,828 acres and a 6-year period.	Air pollutant emissions from construction equipment over an area of approximately 10,681 acres and a 6-year period.	Project facility construction equipment or operation emissions would not exceed federal or state air quality standards. Local air quality would return to existing conditions after completion of project construction. Therefore, construction would not result in irreversible or irretrievable effects on air quality.
	Slight increase in air pollutant emissions from operation and maintenance activities.	Slight increase in air pollutant emissions from operation and maintenance activities, at a reduced scale.	Slight increase in air pollutant emissions from operation and maintenance activities, at a reduced scale.	
	Minor contribution of greenhouse gas emissions.	Minor contribution of greenhouse gas emissions.	Minor contribution of greenhouse gas emissions.	
Geology/ Paleontology	Even if trench monitoring is implemented, some scientifically valuable fossils would be disturbed and lost during trench excavation and ROW grading over a distance of approximately 150 miles.	Same type of impact as the Proposed Action and Alternatives A through C except that ROWs would not occur in White Pine County.	Same type of impact as the Proposed Action and Alternatives A through C except that ROWs would not occur in Snake Valley.	Project facility construction and operation would not cause irreversible or irretrievable effects on geological resources. Surface disturbance activities could alter paleontological resources and result in irreversible or irretrievable effects.
Water	Channel alteration and potential water quality effects on one perennial stream crossed by the pipeline ROW.	No perennial streams crossed by the pipeline ROW.	No perennial streams crossed by the pipeline ROW.	Project facility construction and operation would not result in irreversible or irretrievable effects on surface water resources. The use of water for dust control would be an irreversible loss of this resource.
	Potential water quality effects on two perennial streams by the power line ROW.	No perennial streams crossed by the power line ROW.	No perennial streams by the power line ROW.	
	Potential channel alteration and water quality effects on numerous intermittent and ephemeral streams by the pipeline and power line ROWs.	Fewer intermittent streams crossed by the pipeline and power line ROWs.	Fewer intermittent streams crossed by the pipeline and power line ROWs.	

Table 4-1 Irreversible and Irretrievable Impacts Associated with Surface Disturbance Impacts of the Proposed GWD Project - ROW and Ancillary Facilities (Continued)

Resource	ROW and Ancillary Facilities			Irreversible and Irretrievable Commitment of Resources
	Proposed Action and Alternatives A, B, and C	Alternative D	Alternatives E and F	
Soils	Disturbance to the following acres of sensitive soils: highly wind erodible (1,476), highly water erodible (615), compaction prone (123), and low revegetation potential (10,211).	Disturbance to same types of sensitive soils but fewer acres.	Disturbance to same types of sensitive soils but fewer acres.	There would be a loss of soil productivity due to alteration and mixing of the soil horizons during construction on approximately 8,828 to 12,288 acres, resulting in an irretrievable commitment of this resource. There would also be an irreversible and irretrievable commitment of the resource on approximately 808 to 999 acres involving permanent structures, roads, and facilities that would not be reclaimed.
	Disturbance to approximately 2,338 acres of soil with prime farmland characteristics (no currently active cropland would be affected).	Disturbance to 2,295 acres of soils with prime farmland characteristics (no currently active cropland would be affected).	Disturbance to 2,350 acres of soils with prime farmland characteristics (no currently active cropland would be affected).	
Vegetation	Removal of approximately 12,288 acres of vegetation during construction. Permanent removal of 999 acres due to facility installation.	Removal of approximately 8,828 acres of vegetation. Permanent removal of 808 acres due to facility installation.	Removal of approximately 10,681 acres of vegetation. Permanent removal of 945 acres due to facility installation.	Project facility construction would result in irretrievable effects on 8,828 to 12,288 acres of vegetation because of its removal and long-term restoration period. There would be an irreversible and irretrievable commitment of resources on approximately 808 to 999 acres involving permanent structures, roads, and facilities that would not be reclaimed.
	Potential spread of noxious weeds due to construction equipment.	Potential spread of noxious weeds due to construction equipment, but affected area would be 25 percent less than the Proposed Action and Alternatives A through C.	Potential spread of noxious weeds due to construction equipment, but affected area would be 20 percent less than the Proposed Action and Alternatives A through C.	
	Potential fire risk due to construction areas.	Potential fire risks due to construction equipment, but affected area would be 25 percent less than the Proposed Action and Alternatives A through C.	Potential fire risks due to construction equipment, but affected area would be 20 percent less than the Proposed Action and Alternatives A through C.	
	Salvage and potential loss of yucca and cacti in disturbance areas.	Same as the Proposed Action and Alternatives A through C.	Same as the Proposed Action and Alternatives A through C.	
	Potential disturbance to six BLM sensitive plant species populations.	Same as the Proposed Action.	Same as the Proposed Action.	

Table 4-1 Irreversible and Irretrievable Impacts Associated with Surface Disturbance Impacts of the Proposed GWD Project - ROW and Ancillary Facilities (Continued)

Resource	ROW and Ancillary Facilities			Irreversible and Irretrievable Commitment of Resources
	Proposed Action and Alternatives A, B, and C	Alternative D	Alternatives E and F	
Wildlife	Big game range construction impacts include: antelope (7,950 acres), elk (4,019 acres), mule deer (3,918 acres), and desert bighorn sheep (285 acres).	Big game range construction impacts are reduced: antelope (4,571 acres); elk (2,704 acres); mule deer (2,949 acres); desert bighorn sheep (260 acres).	Big game range construction impacts are reduced: antelope (6,345 acres); elk (4,019 acres); mule deer (3,547 acres); desert bighorn sheep (260 acres).	There would be an irretrievable reduction in wildlife habitat of approximately 8,828 to 12,288 acres as the result of construction surface disturbance. Of this total, there would be an irreversible and irretrievable commitment of approximately 808 to 999 acres of wildlife habitat associated with permanent structures, roads, and facilities that would not be reclaimed.
	Habitat impacts for special status wildlife species (desert tortoise, sage-grouse, pygmy rabbit, western burrowing owl, bald eagle, golden eagle, ferruginous hawk, bats, dark kangaroo mouse, Gila monster, and Mojave poppy bee).	Habitat impact for special status wildlife species reduced by 23 to 59 percent. Mojave poppy bee impacts would be the same.	Habitat impact for special status wildlife species reduced by 20 to 50 percent. Mojave poppy bee impacts would be the same.	
	Operation of electrical power lines could result in bird collisions, electrocution, and increased predation on desert tortoise, pygmy rabbit, and other wildlife species.	Same potential impacts as listed for the Proposed Action.	Same potential impacts as listed for the Proposed Action.	
Aquatic Biology	Habitat alteration and potential water quality effects on one perennial stream containing game fish species crossed by the pipeline ROW.	No perennial streams crossed by the pipeline ROW.	No perennial streams crossed by the pipeline ROW.	ROW and facility construction and operation would result in short-term effects on aquatic habitat and species. As a result, there would be no irreversible or irretrievable effects on aquatic biological resources.
	Potential water quality effects on two perennial streams containing game fish species crossed by the power line ROW.	No perennial streams crossed by the power line ROW.	No perennial streams crossed by the power line ROW.	

Table 4-1 Irreversible and Irretrievable Impacts Associated with Surface Disturbance Impacts of the Proposed GWD Project - ROW and Ancillary Facilities (Continued)

Resource	ROW and Ancillary Facilities			Irreversible and Irretrievable Commitment of Resources
	Proposed Action and Alternatives A, B, and C	Alternative D	Alternatives E and F	
Aquatic Biology (Continued)	Potential habitat alteration and water quality effects on numerous intermittent streams potentially containing macroinvertebrates crossed by the pipeline and power line ROWs.	Fewer intermittent streams potentially containing macroinvertebrates crossed by the pipeline and power line ROWs.	Fewer intermittent streams potentially containing macroinvertebrates crossed by the pipeline and power line ROWs.	
	Potential amphibian mortalities near waterbodies from vehicle traffic within the ROWs (431 miles).	Potential amphibian mortalities near waterbodies from vehicle traffic within the ROWs (315 miles).	Potential amphibian mortalities near waterbodies from vehicle traffic within the ROWs (388 miles).	
Land Use	Disturbance to 12,288 acres of which 97 percent is managed by the BLM.	Disturbance to 8,828 acres of which 97 percent is managed by the BLM.	Disturbance to 10,681 acres of which 97 percent is managed by the BLM.	Project facility construction would result in an irreversible and irretrievable loss of approximately 808 to 999 acres of land due to the permanent use of land for structures, roads, and ancillary facilities that would not be reclaimed.
	Disturbance to 8.5 acres of agricultural land.	Disturbance to 8.5 acres of agricultural land.	Disturbance to 8.5 acres of agricultural land.	
	Approximately 25 percent of disturbance located outside of designated utility corridors.	Approximately 10 percent of disturbance located outside of designated utility corridors.	Approximately 15 percent of disturbance located outside of designated utility corridors.	
Recreation	Effects on access for OHV race routes.	Effects on access for OHV race routes in Lincoln County only.	Same as the Proposed Action and Alternatives A through C.	Project facility construction would result in an irretrievable loss of approximately 2,448 acres of native vegetation within designated recreation areas. There would be an irreversible and irretrievable commitment of recreation resources on approximately 257 acres involving permanent structures, roads, and facilities that would not be reclaimed.
	Disturbance to the Caliente Special Recreation Permits, Chief Mountain Special Recreational Management Areas (SRMA), Las Vegas Valley SRMA, Loneliest Highway SRMA, Pioche Special Recreation Permits, and Steptoe Valley Wildlife Management Area.	Same as the Proposed Action and Alternatives A through C except the Loneliest Highway SRMA and Steptoe Valley Wildlife Management Area would not be crossed.	Same as the Proposed Action and Alternatives A through C.	
Minerals	Potential short-term reductions in access to minerals and minor use of sand and gravel supplies.	Same as Alternatives A through C except that no impacts would occur in Snake Valley and most of Spring Valley.	Same as Alternatives A through C except that no impacts would occur in Snake Valley.	Small quantities of sand and gravel could be used during project construction. This would be an irreversible use of this resource.

Table 4-1 Irreversible and Irretrievable Impacts Associated with Surface Disturbance Impacts of the Proposed GWD Project - ROW and Ancillary Facilities (Continued)

Resource	ROW and Ancillary Facilities			Irreversible and Irretrievable Commitment of Resources
	Proposed Action and Alternatives A, B, and C	Alternative D	Alternatives E and F	
Rangeland	Total of 23 grazing allotments involving approximately 10,544 acres.	Total of 14 grazing allotments involving 7,083 acres.	Total of 20 grazing allotments involving 8,937 acres.	There would be an loss of approximately 7,083 to 10,544 acres as the result of surface disturbance within BLM grazing allotments. These losses would be slowly reduced as the ROW is restored over the time period required for vegetation recovery. There would be an irreversible and irretrievable commitment of resources on approximately 562 to 708 acres for permanent facilities.
	Long-term disturbance to 708 acres in 18 allotments.	Long-term disturbance to 564 acres in 11 allotments.	Long-term disturbance to 562 acres in 16 allotments.	
Wild Horses	Two herd management areas (HMAs) crossed by ROWs, involving 3,015 acres; long-term loss of 164 acres within 2 HMAs.	Same as the Proposed Action and Alternatives A through C.	Same as the Proposed Action and Alternatives A through C.	Project facility construction would result in an loss of approximately 3,015 acres of wild horse forage and cover habitat within two Horse Management Areas. These losses would be slowly reduced as the ROW is restored over the time period required for vegetation recovery. There would be an irreversible and irretrievable commitment of 164 acres for permanent structures.
Special Designations	Project surface disturbance within two Special Designations: Coyote Springs ACEC and Kane Springs ACEC.	Same as the Proposed Action and Alternatives A through C	Same as the Proposed Action and Alternatives A through C	There would be an irreversible and irretrievable loss of vegetation and wildlife habitat in up to seven special designations due to construction and operational maintenance of permanent structures.
Visual	Changes in landscape appearance on approximately 12,288 acres due to removal of shrub vegetation in ROWs. These changes may be observed from scenic byways (Highways 93, 6, and 50) over long viewing periods.	Changes on approximately 8,828 acres due to removal of shrub vegetation in ROWs. These changes may be observed from scenic byways (Highways 93, 6, and 50) over long viewing periods.	Changes on approximately 10,681 acres due to removal of shrub vegetation in ROWs. These changes may be observed from scenic byways (Highways 93, 6, and 50) over long viewing periods.	Removal of 8,828 to 12,288 acres of vegetation, and the addition of 306 miles of new power line would result in irretrievable visual effects (increase in contrasts in color, line, and form within the landscape). These contrasts would be reduced through successful reclamation procedures. Irreversible and irretrievable landscape changes would result from installation of permanent aboveground structures that may be viewed from areas of high public use, such as scenic by-ways (portions of U.S. 93 and U.S. 50).
	Project aboveground facility lighting sources would be seen, but would not attract attention, at an intensity less than the typical effects of a single family residence.	Project aboveground facility lighting sources would be seen, but would not attract attention, at an intensity less than the typical effects of a single family residence.	Project aboveground facility lighting sources would be seen, but would not attract attention, at an intensity less than the typical effects of a single family residence.	

Table 4-1 Irreversible and Irretrievable Impacts Associated with Surface Disturbance Impacts of the Proposed GWD Project - ROW and Ancillary Facilities (Continued)

Resource	ROW and Ancillary Facilities			Irreversible and Irretrievable Commitment of Resources
	Proposed Action and Alternatives A, B, and C	Alternative D	Alternatives E and F	
Visual (Continued)	Evidence of landscape appearance changes from project facilities in Spring and Snake Valleys may be seen from higher elevation viewpoints in Great Basin National Park over distances of 5 to 10 miles. These changes are not expected to meet the intent of National Park Service scenery management objectives.	Project facilities would not be seen by visitors from Great Basin National Park from higher elevation viewpoints across Spring and Snake Valleys.	Evidence of landscape appearance changes from project facilities in Spring Valley may be seen from higher elevation viewpoints in Great Basin National Park over distances of 5 to 10 miles. These changes are not expected to meet the intent of National Park Service scenery management objectives.	
Cultural	Potential adverse effects to National Register of Historic Places (NRHP)-sites mitigated prior to construction.	Same as the Proposed Action and Alternatives A through C; except no disturbance in White Pine County.	Same as the Proposed Action and Alternatives A through C; except no disturbance in Snake Valley.	NRHP-eligible sites that may be disturbed by construction activities would be mitigated in accordance with the Programmatic Agreement. Sites from which artifacts are excavated and removed represent an irreversible impact to cultural resources.
	Unanticipated discoveries of cultural resources would be protected by the PA.	Same as the Proposed Action and Alternatives A through C; except no disturbance in White Pine County.	Same as the Proposed Action and Alternatives A through C; except no disturbance in Snake Valley.	
	Potential illegal collection of artifacts or vandalism to cultural resources.	Same as the Proposed Action and Alternatives A through C; except no disturbance in White Pine County.	Same as the Proposed Action and Alternatives A through C; except no disturbance in Snake Valley.	

Table 4-1 Irreversible and Irretrievable Impacts Associated with Surface Disturbance Impacts of the Proposed GWD Project - ROW and Ancillary Facilities (Continued)

Resource	ROW and Ancillary Facilities			Irreversible and Irretrievable Commitment of Resources
	Proposed Action and Alternatives A, B, and C	Alternative D	Alternatives E and F	
Native American Traditional Values	How many PRCSSs, including potential TCPs and sacred sites, would be adversely affected by the proposed GWD Project is currently unknown. If any PRCSSs, including potential TCPs and sacred sites, are identified within proposed disturbance areas or within view of proposed aboveground facilities, impacts would be avoided. If avoidance is not feasible, measures to avoid, minimize, or mitigate effects to these properties would be proposed in compliance with federal mandates and the PA, and in consultation with interested Indian tribes. Since some of the cultural, religious, and traditional values associated with these properties cannot be fully mitigated, residual impacts to these properties most likely would occur.	Same as the Proposed Action and Alternatives A through C; except no disturbance in White Pine County.	Same as the Proposed Action and Alternatives A through C; except no disturbance in Snake Valley.	How many PRCSSs, including potential TCPs and sacred sites, would be adversely affected by the proposed GWD Project is currently unknown. If any PRCSSs, including potential TCPs and sacred sites, are identified within proposed disturbance areas or within view of proposed aboveground facilities, impacts would be avoided. If avoidance is not feasible, measures to avoid, minimize, or mitigate effects to these properties would be proposed in compliance with federal mandates and the PA, and in consultation with interested Indian tribes. Since some of the cultural, religious, and traditional values associated with these properties cannot be fully mitigated, residual impacts to these properties most likely would occur.

Table 4-1 Irreversible and Irretrievable Impacts Associated with Surface Disturbance Impacts of the Proposed GWD Project - ROW and Ancillary Facilities (Continued)

Resource	ROW and Ancillary Facilities			Irreversible and Irretrievable Commitment of Resources
	Proposed Action and Alternatives A, B, and C	Alternative D	Alternatives E and F	
Socioeconomics	Construction workers would increase demand for temporary housing and public services, generate short-term increases in revenues for local governments and private sector establishments, and result in pressures on local government budgets to accommodate the increased service demand.	Same as the Proposed Action and Alternatives A through C except for shorter duration and less demand mainly in White Pine County.	Same as the Proposed Action and Alternatives A through C except for shorter duration and less demand mainly in Snake Valley.	Development of the GWD Project would require the commitment of non-renewable and renewable resources to meet the housing, transportation, food, clothing and other needs of the construction work force and incremental needs for residents of communities affected by construction. Most of the non-monetary resource investments would be irretrievable, and their use may preclude or foreclose other use options or opportunities. The extent to which the GWD Project results in an incrementally greater commitment of resources than that associated with meeting comparable needs if the workers were located elsewhere is unclear.
Public Safety	Potential spills or leaks from use of hazardous materials mostly consisting of fuels and lubricants during construction and operation.	Same as the Proposed Action and Alternatives A through C.	Same as the Proposed Action and Alternatives A through C.	If a hazardous material spill were to occur and affect a sensitive resource, an irretrievable impact could occur pending the recovery of the affected resource.
	Aboveground facilities (pumping stations) would generate noise from water pumps. All noise-sensitive equipment and facilities would be located more than a mile from pumping stations, and noise would be less than a commonly accepted residential standard (55 A-weighted decibel).	All noise sensitive locations would be located more than a mile from pumping stations, and noise would be less than a commonly accepted residential noise standard (55 A-weighted decibel).	All noise sensitive locations would be located more than a mile from pumping stations, and noise would be less than a commonly accepted residential noise standard (55 A-weighted decibel).	
Environmental Justice	Construction activities for the main conveyance system would occur primarily in uninhabited or sparsely populated areas and no lands that are part of an Indian Reservation would be affected.	Same as the Proposed Action and Alternatives A through C except for shorter duration and shorter length of corridor in White Pine County.	Same as the Proposed Action and Alternatives A through C except for shorter duration and no corridor in Snake Valley.	Proposed project facility construction would not disproportionately affect minority or low-income populations, and therefore no irreversible nor irretrievable effects are anticipated.

Table 4-2 Potential Irreversible and Irretrievable Commitment of Resources for the Proposed GWD Project – Groundwater Pumping (Full Build Out Plus 200 Years)¹

Resource	Potential Impacts	Indicator Description	Alternatives						Potential Irreversible and Irretrievable Commitment of Resources	
			Proposed Action	A	B	C	D	E		F
Air	Fugitive dust from a decrease in vegetation cover and density.	PM ₁₀ emissions (tons per year) from windblown dust compared to no action conditions	17,840	13,327	15,955	6,690	8,252	8,563	11,608	There is a risk that there would be a long-term increase in fugitive dust from pumping basins where pumping drawdown may result in a decrease in vegetation cover and density. These potential air quality changes may limit future options for resource development. This effect would be an irretrievable commitment of air quality. Due to the long-term effects on vegetation, air quality changes in fugitive dust could be irreversible.
Geology/ Paleontology	Surface subsidence	Square miles of high ground surface subsidence risk	525	159	669	1	269	153	242	Subsidence induced by groundwater pumping exceeding 5 feet would be considered both an irreversible and irretrievable land surface modification.
Water	Flow reductions or loss of perennial waterbodies, aquifers, and other groundwater sources.	Number of inventoried springs with moderate to high risk of flow reductions	57	46	78	26	31	30	41	Long-term flow reductions or drying up of perennial springs and streams would limit future options for these surface water resources and therefore would be considered an irreversible impact. The permanent extraction of groundwater in storage within the aquifers (as evidenced by the formation of regionally extensive drawdown cones) is considered an irretrievable commitment of water resources.
		Miles of perennial streams with moderate to high risks of flow reductions	112	81	120	59	48	23	46	
		Number of surface water rights with moderate to high risks of effects	212	151	186	98	56	94	132	
		Total groundwater rights (>10 feet of drawdown)	264	223	301	171	213	110	131	

Table 4-3 Potential Irreversible and Irretrievable Commitment of Resources for the Proposed GWD Project – Groundwater Pumping (Full Build Out Plus 200 Years)¹

Resource	Impacts	Indicator Description	Alternatives						Irreversible and Irretrievable Commitment of Resources	
			Proposed Action	A	B	C	D	E		F
Water (Continued)		Percent reduction in spring valley groundwater discharge to ET	84	57	73	37	28	56	80	
		Percent reduction in snake valley groundwater discharge to ET	33	27	24	17	8	3	3	
		Percent reduction in great salt lake desert flow system groundwater discharge to ET	54	39	44	25	16	24	34	
Soils	Reduction in water sources for hydric soil sustainability	Acres of hydric soils within high and moderate risk zones in drawdown areas (>10 feet)	20,077	11,924	12,005	2,995	6,377	9,696	8,403	Groundwater drawdown would reduce the source of water that sustains hydric soils on a long-term basis, which would be an irretrievable and potential irreversible commitment of soil resources.

Table 4-4 Potential Irreversible and Irretrievable Commitment of Resources for the Proposed GWD Project – Groundwater Pumping (Full Build Out Plus 200 Years)¹

Resource	Impacts	Indicator Description	Alternatives						Irreversible and Irretrievable Commitment of Resources	
			Proposed Action	A	B	C	D	E		F
Vegetation	Reduction in or composition of vegetation with loss or alteration of wetlands and wet meadows	Acres of wetland/meadows with composition and growth effects	8,048	6,137	9,190	3,250	4,453	3,835	5,519	The long-term reduction or compositional change in wetland/wet meadow and phreatophytic shrub/medium vegetation cover types, and vegetation associated with springs and streams would be an irretrievable loss of vegetation. Whether these changes in vegetation communities are irreversible would depend on whether these communities would be so altered that they could never return to their former composition, if groundwater levels are restored. Because of the very long time frames, and potential vegetation community changes over large geographic areas, the effects are considered irreversible within any reasonable time frame (likely more than 500 years).
		Acres of basin shrublands with composition and growth effects	191,506	123,714	146,998	50,076	81,349	81,389	130,591	
Wildlife	Changes to or reduction of habitat, surface water, springs and water quality leading to reductions in breeding and foraging areas	Number of important bird areas with springs or perennial streams with moderate or high risk of flow reductions	4	2	4	2	1	0	2	The loss of perennial surface water for wildlife would be an irretrievable commitment of resources. The loss or long-term reduction or degraded quality of wetland and phreatophytic shrub vegetation would be an irretrievable commitment of resources. This reduction or adverse change in habitat quality could affect habitat carrying capacity, cover, breeding sites, foraging areas, and animal displacement on a long-term basis, resulting in an irretrievable impact.
		See water and vegetation indicators and alternatives impacts for pumping effects on wildlife habitats	See Water and Vegetation	See Water and Vegetation	See Water and Vegetation	See Water and Vegetation	See Water and Vegetation	See Water and Vegetation	See Water and Vegetation	

Table 4-5 Potential Irreversible and Irretrievable Commitment of Resources for the Proposed GWD Project – Groundwater Pumping (Full Build Out Plus 200 Years)¹

Resource	Impacts	Indicator Description	Alternatives						Irreversible and Irretrievable Commitment of Resources	
			Proposed Action	A	B	C	D	E		F
Aquatic Biological Resources	Loss/reduction in aquatic habitat due the reduced spring and stream flows and effects on aquatic species	Number of perennial streams with game fish and special status species with moderate to high risk of flow reductions	31	19	24	13	10	15	25	The loss of aquatic habitat and species in perennial springs and streams from groundwater drawdown would be an irretrievable and potentially irreversible impact for aquatic species, if waterbodies dry up or have substantial water level or flow reductions on a long-term basis.
		Miles of perennial streams with game fish and special status species with moderate to high risk of flow reductions	75	58	72	43	29	13	28	
		Number of springs/ponds/ lakes with fish, amphibian, and springsnails with moderate or high risk of flow reductions	30	28	33	20	13	14	18	
Land Use	Reduction or loss of land vegetation quality for public and/or agricultural use	Acres of private agricultural land (>10 feet of drawdown)	17,203	15,021	17,522	13,749	7,320	3,791	4,857	Groundwater drawdown would result in groundwater level reductions that could adversely affect surface water and vegetation on public lands available for disposal and private agricultural lands. These effects would be an irretrievable and potentially irreversible commitment of water sources for recreational use.

Table 4-6 Potential Irreversible and Irretrievable Commitment of Resources for the Proposed GWD Project – Groundwater Pumping (Full Build Out Plus 200 Years)¹

Resource	Impacts	Indicator Description	Alternatives						Irreversible and Irretrievable Commitment of Resources	
			Proposed Action	A	B	C	D	E		F
Recreation	Reduction or loss of land, wetland and stream vegetation quality/type and therefore, recreation in options	Number of springs with moderate or high risk of flow reductions	23	19	53	12	11	8	12	The long-term reductions or compositional change in wetland/wet meadow and phreatophytic shrubland vegetation cover types, and vegetation associated with springs and streams would be an irretrievable loss of vegetation (see Vegetation). Long-term flow reductions or drying up of perennial springs and streams would limit future options for these surface water resources and therefore would be considered an irreversible impact to recreation users.
		Miles of game fish streams with risk of flow reductions in recreation areas	14	12	28	10	8	2	4	
Rangeland	Loss or reduction in allotments available for livestock grazing due to loss of waterbodies and/or loss/reduction in spring and stream flows and associated vegetation	Number of perennial springs within grazing allotments with moderate to high risk of flow reductions	303	180	259	94	121	104	203	Reductions to flow or quality of springs and perennial streams would be both an irretrievable and potentially irreversible loss of water sources for livestock.
		Miles of perennial streams within grazing allotments with moderate to high risk of flow reductions	102	72	105	50	39	20	41	
		Acres of phreatophytic vegetation and wet meadow vegetation in grazing allotments	200,080	130,378	156,713	53,799	85,811	87,224	136,110	

Table 4-7 Potential Irreversible and Irretrievable Commitment of Resources for the Proposed GWD Project – Groundwater Pumping (Full Build Out Plus 200 Years)¹

Resource	Impacts	Indicator Description	Alternatives						Irreversible and Irretrievable Commitment of Resources	
			Proposed Action	A	B	C	D	E		F
Wild Horses	Loss or reduction in water sources and forage available as a result of loss or reduction in vegetation (correlated with waterbodies and/or loss/reduction in spring and stream flows)	Number of springs within HMAs with moderate to high risk of flow reductions	14	5	9	2	27	5	11	Reductions to flow or quality of springs and perennial streams would be both an irretrievable and potentially an irreversible loss of water sources for wild horses.
		Acres of phreatophytic vegetation and wet meadow vegetation in HMAs	2,511	0	2,511	0	2,511	0	1,266	
Special Designations	Changes or reduction in wetland/wet meadow and shrubland vegetation and therefore a reduction in areas and appearance of special designation	Number of special designation areas with phreatophytic vegetation	5	3	5	3	2	3	4	The long-term reductions or compositional change in wetland/wet meadow and phreatophytic shrubland vegetation cover types, and vegetation associated with springs and streams would be irretrievable within the modeled pumping timeframes (see Vegetation). Long-term flow reductions or drying up of perennial springs and streams would limit future options for these surface water resources and therefore would be considered an irreversible impact affecting the special designations and the management direction for them.
		Acres of phreatophytic vegetation in special designations areas	14,032	12,635	14,032	6,673	10,407	12,408	13,954	

Table 4-8 Potential Irreversible and Irretrievable Commitment of Resources for the Proposed GWD Project – Groundwater Pumping (Full Build Out Plus 200 Years)¹

Resource	Impacts	Indicator Description	Alternatives						Irreversible and Irretrievable Commitment of Resources	
			Proposed Action	A	B	C	D	E		F
Visual	Alteration of landscape views due to loss/reduction or change in vegetation, wetlands and waterbodies	Acres of wetland or wet meadows with appearance change due to potential composition and growth effects	8,048	6,137	9,190	3,250	4,453	3,835	5,519	Future groundwater drawdown would gradually alter landscape views in areas where wetland, wet meadow, and basin shrubland vegetation composition and structure are changed on a long-term basis. These changes would be irretrievable and may be irreversible, if water sources are not replaced.
		Acres of basin shrublands with appearance change due to potential composition and growth effects	191,506	123,714	146,998	50,076	81,349	81,389	130,591	
Native American Traditional Values	Drawdown effects on water and biological resources with traditional and religious values	See water, vegetation, wildlife and aquatic biology indicators and alternatives impacts for pumping effects on native American traditional values	See Water, Vegetation, Wildlife and Aquatic Biology	See Water, Vegetation, Wildlife and Aquatic Biology	See Water, Vegetation, Wildlife and Aquatic Biology	See Water, Vegetation, Wildlife and Aquatic Biology	See Water, Vegetation, Wildlife and Aquatic Biology	See Water, Vegetation, Wildlife and Aquatic Biology	See Water, Vegetation, Wildlife and Aquatic Biology	The traditional, cultural, and religious experience may be diminished in areas where surface water, vegetation, wildlife, or fish resources are affected by drawdown. This reduction may be both irretrievable and irreversible, depending on the extent of surface water or vegetation resource changes (see Water Resources, Vegetation, Wildlife, and Aquatic Biological Resource sections) and the timeframe associated with groundwater recovery.

Table 4-9 Potential Irreversible and Irretrievable Commitment of Resources for the Proposed GWD Project – Groundwater Pumping (Full Build Out Plus 200 Years)¹

Resource	Impacts	Indicator Description	Alternatives						Irreversible and Irretrievable Commitment of Resources	
			Proposed Action	A	B	C	D	E		F
Socioeconomics	Effects on agriculture (irrigation costs and grazing), potential economic effects related to tourism, recreation, and economic development, and social impacts to rural communities and lifestyle	Acres of private agricultural land in Spring and Snake valleys (drawdown \geq 10 Feet)	17,192	15,021	14,844	13,749	4,612	3,791	3,618	Groundwater pumping over the long term (50 to 200 years) would increase irrigation pumping costs (electricity), could reduce grazing and total agricultural production, and adversely affect viability of farming and ranching. Long-term reduction in farm population would affect social structure of the rural areas. These additional costs, reductions in production, and social effects are considered to be both irreversible and irretrievable because of the long timeframes, and the uncertainty that groundwater levels would recover to former elevations at cessation of pumping.
		Acres of private agricultural land in Spring and Snake valleys (drawdown of \geq 50 Feet)	13,439	11,592	13,224	0	198	2,916	3,030	
		Acres of public lands in the Ely District identified for potential disposal	5,399	4,926	7,255	4,926	915	107	107	
		Adverse economic and social impacts in rural areas due to uncertainty and risks	Yes	Yes	Yes	Yes	Yes (reduced compared to the Proposed Action and Alternatives A through C)	Yes (reduced compared to the Proposed Action and Alternatives A through C)	Yes (reduced compared to the Proposed Action and Alternatives A through C)	

¹ No pumping effects would occur for transportation, cultural resources, and public safety, since there is no connection to surface water or affected vegetation.

Attachment 4:
GBWN Bumper
Stickers

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