

Memorandum:

Ambiguities in the Inyo County REGPA Water Rights Retirement Policy

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The Inyo County Renewable Energy General Plan Amendment Policy WR-3.7 applies to renewable energy projects located in Charleston View in southeast Inyo County. It states, “Projects proposed in Charleston View shall be water sustainable and shall require project applicants to purchase and retire water rights along the same flow path for the water that will be used for the project (construction and maintenance) at a minimum of a 1 to 1 ratio.”

However, there are significant questions about how this provision could be implemented. In particular, jurisdictional differences in water management practices between Nevada and California make the intent of this provision somewhat vague and difficult to implement. This memorandum will look at the history of this provision, the challenges in implementing it, and will suggest paths forward.

The Inyo County REGPA & Groundwater in Charleston View

To understand the origin of this provision we need to go back to the early part of the 2010s. While a variety of factors led to the development of the Inyo County REGPA, one of the most contentious elements was the Hidden Hills Solar Project proposal in Charleston View. This project was a “power tower” proposal, which would have consumed several hundred acre-feet of water per year, every year.

Charleston View is part of the Pahrump Valley hydrographic basin, established as Basin 162 by the USGS. Basin 162 spans Nevada and California, though it is primarily within Nevada, and almost the entirety of the population of Pahrump Valley lives on the Nevada side of the border.

Groundwater underlying Pahrump Valley and Charleston View originates as snowmelt on Mount Charleston, which then flows down both a shallow alluvial aquifer and a deep carbonate aquifer. Extensive geochemical and geologic evidence indicates that the water discharging at Shoshone Spring, Tecopa Hot Springs, the Amargosa River Canyon, and Willow Creek/China Ranch mostly also originates from Mount Charleston in Nevada. This water flows under Pahrump Valley in the deep carbonate, and then enters California and moves via three flow paths to the Shoshone-Tecopa area: via Ash Meadows and down the Amargosa River; via Chicago Valley; and via Charleston View and California Valley. So theoretically groundwater will flow off Mount Charleston, underneath Charleston View, through California, into Willow Creek, discharging at China Ranch and then reaching the Amargosa River. Thus, any new water withdrawals in Pahrump Valley and in particular Charleston View, have long raised the hackles of conservationists.

Groundwater impacts were the chief concern expressed about the Hidden Hills Solar Project by conservationists, and was a driving factor in the debate about the Inyo County REGPA during its development in 2014-2015. In particular, The Nature Conservancy's California Chapter and the Amargosa Conservancy strongly advocated for "water neutral" development in Charleston View, and for limiting the permissible technologies to those that have no annual consumption of water.

In the end, the Inyo County Supervisors elected to prohibit solar thermal projects like Hidden Hills in the REGPA, due to the technology requiring ongoing water consumption. As a compromise, the Charleston View Solar Energy Development Area (SEDA) was designated in the REGPA, and strict conservation provisions were put in place to minimize the harm that development in the SEDA would cause. Again, at the urging of The Nature Conservancy's California Chapter and the Amargosa Conservancy, Policy WR-3.7 was included in the REGPA.

Pahrump Valley Water Management in Nevada

Groundwater management in Nevada is far more advanced than in California. Given that the Amargosa is not a medium or high priority basin under California's Sustainable Groundwater Management Act, groundwater pumping in Charleston View is functionally unregulated. Basically anyone can stick a well in the ground and start pumping with no real limits on how much they pump.

By contrast, groundwater pumping in Nevada is strictly regulated. The entire state is broken up into groundwater basins, which from a management perspective are functionally regarded as discrete hydrogeologic units. Using the old USGS reconnaissance reports from the 1960s, the State Engineer (Nevada's chief water regulator) established "perennial yields" for each basin –

that is, the total amount of water that can be withdrawn each year without unduly impacting groundwater levels in the basin.

Pahrump Valley is managed as Basin 162 by the Nevada State Engineer. It has an established perennial yield of 20,000 acre-feet per year. Unfortunately, in the past water rights were issued far beyond what turned out to be the perennial yield of the basin. As a result, there are 74,932 acre-feet per year of water rights issued in Basin 162.¹ Nearly that full amount was actually pumped during the 1960s and 1970s due to intensive cotton agriculture. The amount of pumping today is far less – estimated at 14,861 acre-feet per year. However this number is likely low, as it includes over 11,000 domestic wells estimated at pumping 0.5 acre-feet per year. Each domestic well is entitled to pump up to 2 acre-feet per year, and there are no meters so there is no way to verify how much each domestic well pumps. With the extensive tree cover and other irrigated landscaping around Pahrump, the 0.5 acre-feet number seems dubious. Thus pumping is likely higher than the 14,861 acre-feet per year number.

Overpumping of water in Pahrump Valley has caused groundwater levels to plummet by as much as two feet per year in some areas in the basin, causing cumulative declines of over 100 feet in the groundwater table. Clearly, pumping has far exceeded a sustainable level. There are also indications that overpumping is affecting Inyo County's water resources – springs down-gradient from Pahrump Valley in Inyo County are drying up, including Twelvemile Spring, Chappo Spring, and Tule Spring.²

The Nevada State Engineer has an objective of reducing groundwater appropriations in Pahrump Valley. Currently, anyone wanting to drill a new domestic well in Pahrump must purchase and retire two acre-feet of water per annum.³ While this is well-intentioned, it has the effect of solving the problem on paper without solving it in reality. People who own unpumped paper water rights are enriched, but there's still a new domestic well and new pumping.

So there are really two discrete problems to deal with in Basin 162. First is the need to reduce pumping to a sustainable level. Given the marked declines in groundwater levels, it's clear that the sustainable level of pumping is *far less* than the 20,000 acre-foot per year perennial yield. Pumping must be reduced until it no longer reduces groundwater levels and dries up Inyo County's water sources. And second, there is a need to reduce paper water rights, which could be developed at any time. In other words, all 75,000 acre-feet of water is legally entitled to be pumped, which would be a catastrophe.

¹ <https://tools.water.nv.gov/Pumpage%20Inventories/162%20-%20Pahrump%20Valley/162%20-%202023%20-%20Pahrump%20Valley.pdf>

² Andy Zdon, State of the Basin Report, 2020.

³ <https://images.water.nv.gov/images/Orders/1293Ao.pdf>

Given the state of Basin 162, it is generally seen as a good thing by Nye County and the State Engineer to both reduce pumping and reduce paper water right allocations.

Policy WR-3.7 Is Intended to Retire Water Rights in Nevada

It must be recognized that both The Nature Conservancy, California Chapter and the Amargosa Conservancy envisioned this provision applying to water rights retirements *in Nevada*. Assuming that the Inyo County Board of Supervisors also intended for these water rights retirements to occur in Nevada is important. Otherwise, Policy WR-3.7 is illogical.

In unmanaged groundwater basins, California does not have a concept of “retiring water rights.” Since pumping is not regulated in Charleston View, there is no way to retire a water right. You could plug a well, but someone can sink a well right next door and pump as much as they want. So there is no legal mechanism for water rights retirement in Charleston View, suggesting that the Inyo County Board of Supervisors intended that the retirements occur in Nevada.

There has been some concern that retiring water rights in Nevada would cause a problem with equity – wouldn’t Nevada be upset to retire their own water rights to facilitate development in California? Wouldn’t retiring water rights in Nevada not actually help Inyo County? The answer to both questions is no. Nevada officials would be happy to take water rights off the books in Basin 162 for any reason. And since Pahrump Valley is a single groundwater basin encompassing both sides of the border, retiring water rights on the Nevada side of the border provides a benefit to Inyo County residents and the environment by helping to bring the groundwater basin they are a part of into balance.

However, there is some uncertainty regarding Policy WR-3.7 as it applies to specific projects. Water rights in Nevada (and basically everywhere) are managed on an annual basis – in acre-feet per annum. However, water consumption by a solar project in Charleston View is likely to be a one-shot deal – withdrawals on the order of 1,000 acre-feet for construction over a 12-24 month period.⁴ This is further complicated by Policy WR-3.7’s requirement of a 1:1 mitigation ratio.

There is simply no mechanism to retire 1,000 acre-feet of water once. You’d be paying someone to say they won’t pump 1,000 acre-feet. But who’s to say they were pumping it to begin with? So there is a fundamental incongruity between what WR-3.7 is intending to mitigate and the mitigation solution provided in the Policy. There is simply no way to retire 1,000 acre-feet of water rights once.

⁴ This is a broad generalization on solar projects, which generally consume about 1,000 acre-feet for construction of a 3,000 acre project.

Additionally, WR-3.7 requires that water rights retirements be on the same groundwater flow path as the withdrawals – but there are no significant annual uses of water along the Mount Charleston-Charleston View-California Valley-Willow Creek flow path.

What's the Solution?

Policy WR-3.7 is confusing and illogical as written for three reasons:

- It doesn't state where water rights retirements should happen, but the only place they could logically happen is in Nevada.
- There are no other appreciable water users along the flow path to retire water rights from.
- There is no mechanism to retire a single use of water rights. Water rights are managed on an annual basis.

We are faced with a challenge at the moment, because Bonanza Peak Solar is under permitting. There are two possible solutions to this problem:

1. The Board of Supervisors amends the REGPA to more clearly define the intent of Policy WR-3.7 to ensure that impacts to groundwater are sufficiently mitigated by any solar project in Charleston View.

OR

2. Bonanza Peak Solar reaches an agreement with the County and interested parties about acceptable mitigation measures, the Board of Supervisors uses a one-time variance to exempt the project from Policy WR-3.7, and no amendment of the REGPA is needed.

It is essential that Bonanza Peak, the County, and interested parties come to a solution about this matter. Policy WR-3.7 is not just fluff, it was put in for a reason – to ensure that impacts from projects like Bonanza Peak Solar are sufficiently mitigated so as not to harm Inyo County's residents or environment. Whether via amending the REGPA or having a project-specific agreement, steps must be taken to ensure that Inyo County's water resources are made whole by any new renewable energy development in Charleston View.