

FEASIBILITY STUDY OF GROUNDWATER RIGHTS RETIREMENT COUPLED WITH AGRIVOLTAICS IN THE DIAMOND VALLEY, NEVADA: COMMUNITY SCOPING

Eureka Conservation District | Eureka County | The Nature Conservancy

PREPARED BY:



**THE
LANGDON
GROUP**

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| EXECUTIVE SUMMARY



Groundwater rights holders in Diamond Valley, a groundwater basin in Nevada where over-appropriation and over-use of groundwater have resulted in declining groundwater levels (Berger et al. 2016), developed a Groundwater Management Plan (GMP). The goals of the GMP include stabilizing groundwater levels in Diamond Valley by reducing consumptive use while preserving the socioeconomic structure of the region and maximizing viable land uses of private land. Water use cannot balance without taking some irrigated land out of production.

At the same time, energy development, which is one of the largest drivers of land use change in North America (Trainor et al. 2016), could significantly impact biodiversity and other conservation values in Nevada. A possible strategy to achieve multiple goals of the GMP, while avoiding or minimizing impacts from new energy development, is the concurrent, permanent retirement of groundwater rights while transitioning all or portions of formerly irrigated agricultural lands to photovoltaic solar systems (i.e., agrivoltaics).

The Nature Conservancy (TNC), in partnership with the Eureka Conservation District and Eureka County, initiated a community driven process to explore the viability, socioeconomic benefits, and potential shortcomings of agrivoltaics coupled with permanently retiring groundwater rights in Diamond Valley. The project will be completed by early 2024 and is being done in two phases: Phase 1 is a community scoping phase and Phase 2 is a technical feasibility phase to look at the benefits and trade-offs of applying agrivoltaics with groundwater rights retirement in Diamond Valley. This report conveys results of Phase 1 of the project.

The Langdon Group (TLG) was selected for Phase 1 to provide third-party neutral assistance to (1) conduct a situation assessment (SA) that elicits input from a range of potentially affected interests and (2) facilitate a community meeting where study concepts are presented and substantive input is gathered from the community on the topic of water rights retirement and transitioning land to solar farms. The impartial position of the third-party neutral provides the opportunity for open dialogue without biases or preconceptions. SA interviews and the community meeting occurred in September 2023.

The opinions, beliefs, and perceptions of the SA participants were categorized by the following themes that emerged during interviews. This assessment does not aim to verify the accuracy of people's statements.

COMMUNITY ENGAGEMENT

Most participants indicated that it is very difficult to get people out for public meetings regardless of the incentive provided or how dire the situation is. However, holding meetings during a time of year when people are most available, such as in March; advertising through Facebook, mailers, and door-to-doors; and providing information at pre-existing events that bring the community out were mentioned as strategies that could help increased participation.

GREEN LINK NORTH

Most participants expressed an unclear picture about the potential Greenlink North (GLN) transmission line. It is mostly understood that GLN is currently being evaluated in an Environmental Impact Statement (EIS) with the Bureau of Land Management (BLM), but questions persisted, such as: Who is paying for it?; Will it connect to the existing transmission line and/or substation?; Is solar farm development driving it?; Who is the energy for?

GROUNDWATER MANAGEMENT PLAN

For many participants it was important that the history of Diamond Valley was understood to provide the necessary context for what led to the need for developing the GMP. At the initial implementation of the GMP, some participants indicated friction in the community, however through relationship building, every water meter is in compliance, and farmers are finding opportunities to produce similar yields of crop with less water through more active water management, implementing new irrigation methods and technology, and rethinking the type of crop and how often it is harvested.

SOLAR DEVELOPMENT

Diamond Valley was viewed by many participants as a desirable area for solar development, and they see solar development in Diamond Valley as a choice among many options about how local landowners can use their land. These decisions are individual to the landowner and not consensus or community based. The preferred and most likely scenario for solar development among all participants is through a lease with the solar company. Some expressed skepticism that the development will ever occur and indicated they would require assurances with no up-front cost before signing agreements.

SOLAR PERCEIVED NEGATIVES AND CONCERNS

Among the more frequent concerns and questions expressed about solar development surround the equipment (sun is inconsistent and what happens when the solar panels become obsolete?); aesthetics (changes the landscape and may be unwelcome to neighbors); economic impact (solar projects employ few people once operational); and inequities that could cause community tension (some will be provided the opportunity to lease their land for solar and some will not).

SOLAR PERCEIVED POSITIVES

Among the more frequent positive comments about solar development were land use (it will help with water retirement and won't leave barren ground that would attract weeds and rodents); and as a transition from farming (good for those that are looking towards retirement and to get out of farming but still bring in income).

SOLAR WITH AGRICULTURE

The concept of combining solar development with agriculture (agrivoltaics) was mostly met with curiosity (i.e., it's "worth looking into") but was not perceived as a necessary or even attractive pairing by most participants when discussing the potential of converting land to solar development. Many participants perceived that most landowners who would lease their land to solar development are looking towards retirement and would not be interested in personally "farming" the non-irrigated land in conjunction with solar development. Rather, they might look at it as an opportunity to lease the farmable land as another source of income. A few also questioned how agrivoltaics would impact how land is assessed.

TRIBAL INTERESTS

Eureka County and TNC representatives met with members of the Duckwater Shoshone Tribe to discuss the study and to receive feedback. The members in attendance did not express any specific concerns or issues related to agrivoltaics and water rights retirement in Diamond Valley but did express general concerns about large-scale energy projects and the impacts to cultural sites and natural resources of importance to the Tribe. The members desired to remain informed as the study continues.

WATER RIGHTS RETIREMENT

Most recognize that curtailment will ultimately catch up with "banked" water rights as GMP required pumping reductions increase each year, and the smaller farms will be the first to be forced into water rights retirement because they will not have the opportunity to transfer water rights to other parcels in the basin. Some see retaining water rights either to resell or transfer to other parcels as a preferred alternative to selling because it keeps the water rights in the valley while still taking some land out of production, reducing water usage, and making it easier to farm the land that is still producing. Some assume that people interested in water rights retirement will mostly be those that are looking towards retirement without a descendent interested in agriculture. Questions and skepticism exist among most parties that the State of Nevada will produce a long-term, fair-priced water rights retirement buy-back program, and until this is developed, retirement is not a feasible alternative.

| BACKGROUND

Groundwater rights holders in Diamond Valley, a groundwater basin in Nevada where over-appropriation and over-use of groundwater have resulted in declining groundwater levels (Berger et al. 2016), developed a Groundwater Management Plan (GMP). The goals of the GMP include stabilizing groundwater levels in Diamond Valley by reducing consumptive use while preserving the socioeconomic structure of the region and maximizing viable land uses of private land. Water use cannot balance without taking some irrigated land out of production.

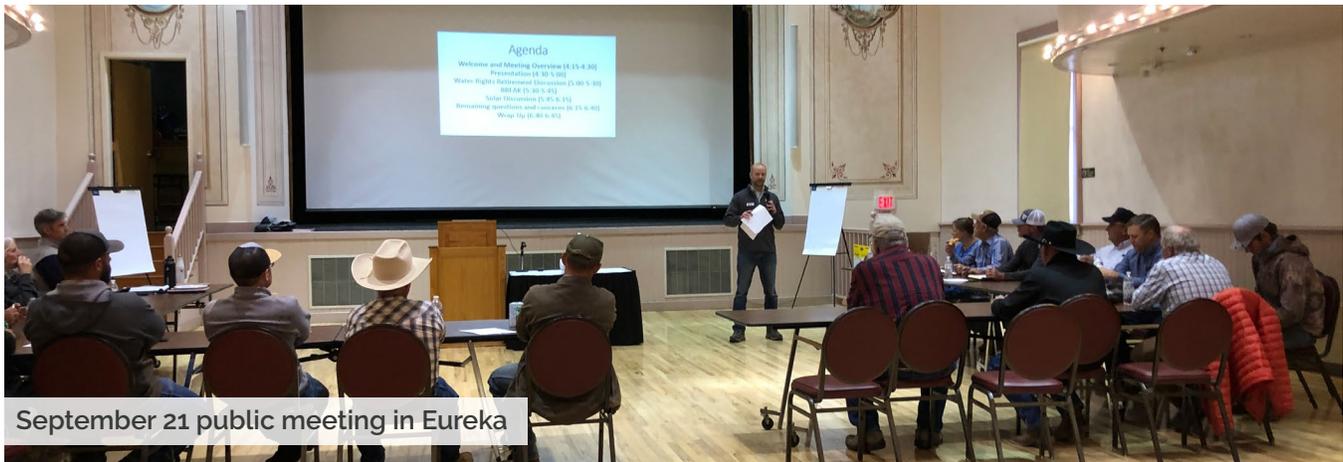
At the same time, energy development, which is one of the largest drivers of land use change in North America (Trainor et al. 2016), could significantly impact biodiversity and other conservation values in Nevada. A possible strategy to achieve multiple goals of the GMP while avoiding or minimizing impacts from new energy development is the concurrent, permanent retirement of groundwater rights while transitioning all or portions of formerly irrigated agricultural lands to photovoltaic solar systems (i.e., agrivoltaics).

The Nature Conservancy (TNC), in partnership with the Eureka Conservation District and Eureka County has initiated a project to be completed in early 2024 that is being done in two phases: Phase 1 is a community scoping phase and Phase 2 is a technical feasibility phase to look at the benefits and trade-offs of applying agrivoltaics with groundwater rights retirement in Diamond Valley. This report conveys results of Phase 1 of the project which involves a community driven process to explore the viability, socioeconomic benefits, and potential shortcomings of agrivoltaics coupled with permanently retiring groundwater rights in Diamond Valley. Community engagement is a fundamental aspect of the process and will guide the contents and focus of Phase 2 of the study. The goals for Phase 1 are the following:

1. Gather targeted input from local and state agency representatives, land and water managers, renewable energy developers, tribes, and other key stakeholders.
2. Understand residents' diverse perspectives about retiring water rights with the possibility of converting all or a portion of the formerly irrigated land to photovoltaic solar energy generation systems.
3. Determine viability, socioeconomic benefits, and any potential shortcomings of agrivoltaics coupled with permanently retiring water rights in Diamond Valley.
4. Inform future land use decision-making with consideration of economic trade-offs of retiring all or portions of the existing water rights and transitioning lands to solar farms (which could include agrivoltaics); potential of water rights retirement to help stabilize groundwater drawdown; legal and regulatory constraints; and technological and socioeconomic feasibility of renewable energy generation in Diamond Valley.
5. Identify concerns and potential solutions for community preservation.

The Langdon Group (TLG) was selected to provide third-party neutral assistance to (1) conduct a situation assessment (SA) that elicits input from a range of potentially affected interests and (2) facilitate a community meeting where study concepts are presented, and substantive input is gathered from the community on the topics of water rights retirement and transitioning lands to solar farms. The impartial position of the third-party neutral provides the opportunity for open dialogue without biases or preconceptions. SA interviews and the community meeting occurred in September 2023.

PROCESS AND METHODOLOGY



SITUATION ASSESSMENT

TLG conducted interviews with seven parties in September 2023. Three additional contacts were identified through the process that declined the request for participation, were unresponsive or unavailable. Participants were identified with TNC and Eureka County. Interviews were confidential and most occurred in-person with three interviews by phone or via video conference when in-person was unfeasible. For in-person interviews, the project team met with interviewees at Eureka County facilities, their office, or home. Interviewees received an introduction of the process via phone from Eureka County followed by an email and request to schedule a conversation by TLG. Below is the introductory statement TLG provided to each potential interviewee:

You are invited to participate in a research study with The Nature Conservancy, Eureka County and Eureka Conservation District to explore the viability, social and economic considerations, and potential shortcomings of Agrivoltaics coupled with permanently retiring water rights in Diamond Valley. Agrivoltaics involves the simultaneous use of areas of land for both solar panel energy production and agriculture. There has been interest for both solar energy development and water retirement in Diamond Valley. We have selected The Langdon Group to conduct in-person interviews during the week of September 18 and a community meeting on September 21. You have been selected for an interview because of your experience in Diamond Valley. The interview will take approximately 1 to 1.5 hours. All of the information you provide will be kept private and confidential. Only summary information representing aggregated responses will be reported publicly. Your participation in the interview is voluntary and you may withdraw at any time. The potential benefits of participation include having your responses, in summary form together with those of other participants being communicated in a public report, at a community meeting, and possibly in a peer-reviewed paper. There is minimal, if any, risk of your individual responses being revealed due to measures we are taking to secure your information. The Lead Investigator for the research study is Peter Gower with The Nature Conservancy (peter.gower@tnc.org; 775-446-5525) and Bryant Kuechle with The Langdon Group (bk@langdongroupinc.com; 208-739-3048) will be conducting the interviews. Do you have any questions? Are you willing to participate in this interview?

To solicit input that is valuable and constructive, the interview format was intended to be conversational with active listening, allowing the stakeholder to steer the discussion, while ensuring valuable information was captured that would inform the above listed goals. Conversations varied as each participant is unique, with different interests, and required different approaches. Discussions with the local farming community were sensitive to the emotional aspect of the potential transition away from traditional farming. Input from the interviews was also used to identify common areas of concern and/or interest for further analysis as discussion topics in the Community Meeting.

Before the interview, participants were provided a full explanation of the purpose of the assessment and were informed about the final product: this summary report. They were told this report will be a public document and available for their review but also made generally available on Eureka County's website. They were also informed that names will not be included, comments/input will not be attributed to individuals or organizations but rather grouped into common themes that emerge during the process, and the report will include the total number of people that participated in the interviews.

Participants were also told that the project team is making every attempt to capture all possible interests by reaching a cross section of the community. While it was not possible to meet with every person and group that had an interest in this topic, the hope was that the sample of people interviewed would accurately represent the different perspectives that exist. However, the list of interviewees does not constitute a statistically representative sample.



COMMUNITY MEETING

Eureka County organized, scheduled, and advertised a community meeting on September 21, 2023, 4-7 PM at the Eureka Opera House. Anyone with interest was invited to attend and participate. Dinner was provided.

TLG developed and provided meeting facilitation for the following agenda:

- Welcome and Meeting Overview (4:15-4:30)
- Presentation (4:30-5:00)
- Water Retirements Discussion (5:00-5:45)
- BREAK (5:45-6:00)
- Solar Energy Discussion (6:00-6:45)
- Wrap-Up (6:45-7:00)

There were 19 people who signed-in and participated and there were a few that were known to be in attendance but did not sign in. While participants shared questions, comments and concerns about water rights retirement and solar development, the meeting primarily took a question-and-answer format. Staff from TNC, Eureka County, and a solar company provided most responses.

FINDINGS



This section captures the opinions, beliefs, and perceptions of the SA participants, categorized by themes, that emerged during interviews. **This assessment does not aim to verify the accuracy of people's statements. Where participants have conflicting understandings of the same phenomena, this discrepancy is identified and articulated as best as possible. It is important to understand different interpretations, regardless of their accuracy, because it reveals nuances in community understanding and helps identify potential information gaps in these communities/groups.**

This report is intended to provide a snapshot in time of a cross section of the communities of interested parties. However, it is neither a representative sample, nor a "vote" on how many people were in favor of or opposed to water rights retirement or solar development. However, this report uses specific terms associated with broad percentages to indicate the number of SA participants who shared a particular view, as determined by the project team as part of the SA. "A few" refers to more than one person, but less than 10% of participants; "some," "several," and "other" refers to between 11-50% of interviewees; "many" refers to 51-75% of interviewees, and "most" or "almost all" interviewees refer to 76-99%. Themes are organized below in alphabetical order.

COMMUNITY ENGAGEMENT

Participants were asked how best to engage with the community for future public involvement opportunities on water rights retirement and solar development. Most participants indicated that it is very difficult to get people out for public meetings regardless of the incentive provided or how dire the situation is. This was evident during the development of the GMP. Some participants did offer the following suggestions to help promote participation:

- Post information on the County Facebook page.
- Send hard copy mailers. There are many senior aged residents in Eureka County that do not use social media.
- Go to where the people are with a pop-up booth. Suggested events were the Wine Walk, any school function, National Night Out, and Cops & Kids.
- Target outreach during a time of year when people are most available, such as in March. Avoid summer, fall, and after harvest when most people are unavailable.
- Free legal review service for solar contracts would be helpful and welcome.
- Conduct door-to-door visits in Diamond Valley. Many farmers prefer to avoid special trips into Eureka.
- Provide food at public meetings.



GREENLINK NORTH

Most participants expressed an unclear picture about the proposed Greenlink North (GLN) transmission line. It is mostly understood that GLN is currently being evaluated in an Environmental Impact Statement (EIS) with the Bureau of Land Management (BLM). This project being proposed by NV Energy, Nevada's largest electricity provider, would cross the state from east to west and pass through the Diamond Valley. NV Energy's stated purpose for the project is to help to the state meet its renewable energy goals.

Questions and concerns expressed are:

- Who is paying for it?
- Will it connect to the existing substations on the current transmission line or will there be a new location to potentially onboard energy in the Diamond Valley?
- If it will connect to existing substations, what kind of upgrades will be needed?
- Will the potential for solar development drive the likelihood of a new substation in the Diamond Valley?
- Who is the energy for? California? Or does it stay in Nevada, specifically for growth in the Reno area?

GROUNDWATER MANAGEMENT PLAN (GMP)

For many participants it was important that the history of the valley was understood to provide the necessary context for what led to the need for developing the GMP.

According to many of the participants, the Federal Desert Land Entry (DLE) program of the 1950's was developed to encourage growth by cultivating the land. The state over-appropriated water rights throughout the state, expecting a low success rate. This expectation was accurate for most of Nevada according to interviewees, however the combination of electrical infrastructure, advances in irrigation technology, unique conditions for specific varieties of hay, and covered crop storage resulted in a much higher success rate in the Diamond Valley.

These benefits combined with the “use it or lose it” water management rules, the re-appropriation of the unsuccessful farmers’ water rights, and the discovery that Diamond Valley was the terminal basin for seven different groundwater basins in a “flow system”, further exacerbated the overuse of water over time.

The GMP was developed as a “bottom-up plan” by the local farming community and other water rights holders that accepted and understood the need for better groundwater management through reduced usage, with curtailments increasing over time.

At the initial implementation of the GMP, some participants indicated friction in the community. However through the relationship building efforts of the Nevada Division of Water Resources’ local office, every water meter is in compliance, and farmers are finding opportunities to produce similar yields of crop with less water through more active water management; implementing new irrigation methods and technology; and rethinking the type of crop and how often it is harvested. Still, participants expressed concerns about the future of the valley with less water and few indicated concerns over impacts to domestic water usage and the resulting “dust bowl.”



SOLAR DEVELOPMENT

Diamond Valley was viewed by many participants as a desirable area for solar development for the following reasons:

- Proximity to a potential, future, high voltage transmission line (i.e., GLN).
- Availability of disturbed, private land where it is easier to develop than on undisturbed public lands.
- Relatively flat land.

Most participants see solar development in the region as a choice among many options about how local landowners can use their land. These decisions are individual to the landowner and not consensus or community based.

The preferred and most likely scenario for solar development among most participants is a lease with a solar development company, although questions were raised as to whether selling the land is a better scenario. The leasing process was understood by participants as:



- After the agreement is made with the solar developer, the solar developer then has the ability to reach their own agreement with the builder.
- The solar development company has an initial five-year option to lease. During that time, the solar development company negotiates a Power Purchase Agreement with NV Energy and the landowner typically receives some form of payment and is allowed to continue farming.
- Leases are typically 30 years. After 30 years, the landowner typically has the option to sign a new agreement or have the equipment removed and the land restored at the cost of the developer.

It was understood by most participants that properties in closer proximity to the proposed GLN location are more highly desirable due to the reduced amount of powerline infrastructure required to connect, however the potential for clusters of development that can share connecting infrastructure could be a feasible option for developers. It was not understood by most participants that there is a finite number of properties that can convert to solar at this time. The amount of energy the GLN transmission line can accept has a limit. Many requested a “heat map” or “Diamond Valley Solar Plan” that could indicate which land is most desirable.

Some expressed skepticism that the development will ever occur and indicated they would require assurances with no up-front costs before signing agreements. This skepticism is rooted in participant experiences with solar companies that sought agreements in the past, only to determine later the current transmission line did not have capacity to onboard new energy production. During this negotiation, landowners hired attorneys to review lease agreements and were unable to recover those fees.

Concern was also expressed by a few participants that during the 30-day escrow period of the solar lease, rumors will get out that a landowner is looking to lease their land. If that farmer is hoping to purchase new land to transfer water rights to, this could negatively impact negotiations for the buyer.

Additional questions were expressed, in no order of importance or frequency:

- Would it add operational cost if adjacent land retires water rights for solar development, introducing the potential for weeds and rodents to the adjacent agricultural lands?
- Are there federal dollars or tax breaks to support solar development?
- Why doesn't the federal government provide locations/ space for renewable development?

SOLAR PERCEIVED NEGATIVES AND CONCERNS

Most participants expressed some perceived concerns, and questions about solar technology. These are, in no order of importance or frequency:

- Solar is inconsistent and therefore does it require another form of energy production when it is not producing?
- What happens when the equipment installed is obsolete? Are landowners left with unusable equipment?
- What happens when snow and ice build-up on the panels?
- Will this add more power lines to the area connecting the solar developments?
- Aesthetically, solar panels are not as attractive as the existing farms without solar panels.
- How will solar farms benefit the local economy? With minimal maintenance, this form of development will further reduce the population (tax base) and erode the fabric of the community.
- Solar will create tension in the community because some people will have it and will be making money, and some won't because the location of their land was not desirable, or one neighbor will be forced to look at their neighbor's solar development.
- It will attract a transient workforce during installation, with limited long-term economic benefits to the community.
- Converting land use from agriculture to industrial or mixed use will have a negative impact to the tax base and will increase the landowners' property taxes.

SOLAR PERCEIVED POSITIVES

Most participants expressed some positive perceptions about the potential of solar development in Diamond Valley. These are, in no order of importance or frequency:

- The community should get the best use out of the land they can.
- Solar development will ensure the land is maintained. When land is left unmanaged it can produce weeds and rodent issues that will impact the still productive farmland.
- If developed areas are separated, solar will not become the dominant land use and agriculture will still thrive.
- This alternative land use will help get water off of the books permanently. The only water usage for solar development is during construction for dust control.
- Provides a "soft landing" for those looking to retire water rights, get out of farming, and still provide a level of income.
- If there is a potential opportunity for Mt. Wheeler Power, the local electricity co-operative to acquire the energy generated, this could reduce rates in the region.
- Solar could be used in non-irrigated parcel corners.

SOLAR WITH AGRICULTURE

The concept of combining solar development with agriculture, commonly referred to as agrivoltaics or agri-solar, was mostly met with curiosity and the feeling that it is "worth looking into" but was not perceived as a necessary or even attractive pairing by most participants when discussing the potential of converting land to solar development. Many participants perceived that most landowners who would lease their land to solar



development are looking towards retirement and would not be interested in personally “farming” the non-irrigated land in conjunction with solar development but would look at it as an opportunity to lease the farmable land as another source of income.

A few also questioned how agrivoltaics would impact how land is assessed – would lands keep their agriculture designation if agrivoltaics were included? It was shared at the community meeting that the County Assessor will be preparing a memorandum regarding assessments and tax implications as part of Phase Two.

Most participants offered ideas on what agrivoltaics might look like. Those are, in no order of importance or frequency:

- Crested wheatgrass is planted in the corners of most irrigated circles and grows well without irrigation. This would likely be the most productive grazing crop that could be planted beneath and among solar panels that rotate with the sun, providing limited light exposure.
- Some form of vegetation would be needed to prevent weeds and rodents from impacting neighboring, productive farms, so it might as well be something that can be harvested or grazed on.
- As long as agriculture does not impact the solar company's ability to safely maintain the equipment, there are no perceived negatives.
- Farming and general mowing maintenance is ideal for local labor contracts.

Some participants also expressed skepticism about the concept. Those comments are, in no order of importance or frequency:

- What would the incentive be to the solar companies? It seems that the potential of grazing animals and rodents impacting the equipment would be an unwanted risk.
- Would the solar panels allow for enough sunlight for a crop to grow?
- Without irrigation, there is not reliability of growth in drought years.

- If it would require elevating the panels, why would the solar companies want to invest in that extra infrastructure cost?
- It is better if no sunlight touches the ground, leaving bare ground that won't attract weeds and rodents.
- Dry land cover crops would produce small and inconsistent yields, not worth the cost of labor.
- There is no aesthetic benefit.
- If sheep are used for grazing, this could have a negative health impact (i.e., disease transmission) to neighboring livestock, particularly bison.
- Water would be needed to establish cover crops. Is this possible?

TRIBAL INTEREST

Eureka County and TNC representatives met with members of the Duckwater Shoshone Tribe at the Tribal Headquarters in Duckwater on September 20 to discuss the study and to receive feedback. The members in attendance did not express any specific concerns or issues related to agrivoltaics and water rights retirement in Diamond Valley but did express general concerns about large-scale energy projects and the impacts of those projects on cultural sites and natural resources of importance to the Tribe. The members desired to remain informed as the study continues.

WATER RIGHTS RETIREMENT

Most recognize that curtailment will ultimately catch up with "banked" water rights as GMP reduction goals increase each year, and the smaller farms will be the first to be forced into water rights retirement because they will not have the opportunity to transfer water rights to other parcels in the basin.

Some see retaining water rights either to resell or transfer to other parcels as a preferred alternative to selling, because it keeps the water rights in the valley while still taking some land out of production, reducing water usage, and making it easier to farm the land that is still producing.

Some assume that people interested in water rights retirement will mostly be those that are looking towards retirement without descendants interested in agriculture.

Questions and skepticism exist among most parties that the State of Nevada will produce a long-term, fair-priced water rights retirement buy-back program, and until this is developed, retirement is not a feasible alternative. Some also expressed skepticism that the state will permanently retire the water rights and may elect to transfer them to mining companies or other regions, specifically Las Vegas.

Many participants also expressed frustration over the current Nevada Water Conservation and Infrastructure Initiative (NWCII) American Rescue Plan Act (ARPA) funded buy-back program that comes with a Feb. 1, 2024 deadline for landowners to opt-in. One community member stated he has spent his entire life trying to figure out how to grow a crop, acquiring equipment, and growing crops and now has to make a decision with limited data in a short time frame.

Concern also exists for landowners considering solar development leases, that they are putting themselves in a vulnerable negotiating position by retiring water rights early and therefore limiting their potential future land use options. Another concern is everyone will elect to retire their water rights, altering the landscape of the region away from agriculture towards solar or simply unproductive land that brings weeds and rodent infestations, potentially impacting the operational costs of adjacent, productive agriculture land.

Participants also shared questions and concerns regarding the following in no order of importance:

- Will there be costs associated with well abandonment?
- Could some water be maintained to convert irrigation wells to stock water?
- How will soil erosion and dust issues be addressed after land is taken out of production?
- Does the valuation of water rights differ by location?
- How is non-pumped but in good standing water addressed (i.e., water rights not currently used but under valid "extensions of time" with the state)?
- Are water rights retirement in Diamond Valley under GMP shares? Allocations? Base Permits?

APPENDIX A

COMMUNITY MEETING PRESENTATION SLIDES



Welcome!

We will get started soon

Agenda

Welcome and Meeting Overview (4:15-4:30)

Presentation (4:30-5:00)

Water Rights Retirement Discussion (5:00-5:30)

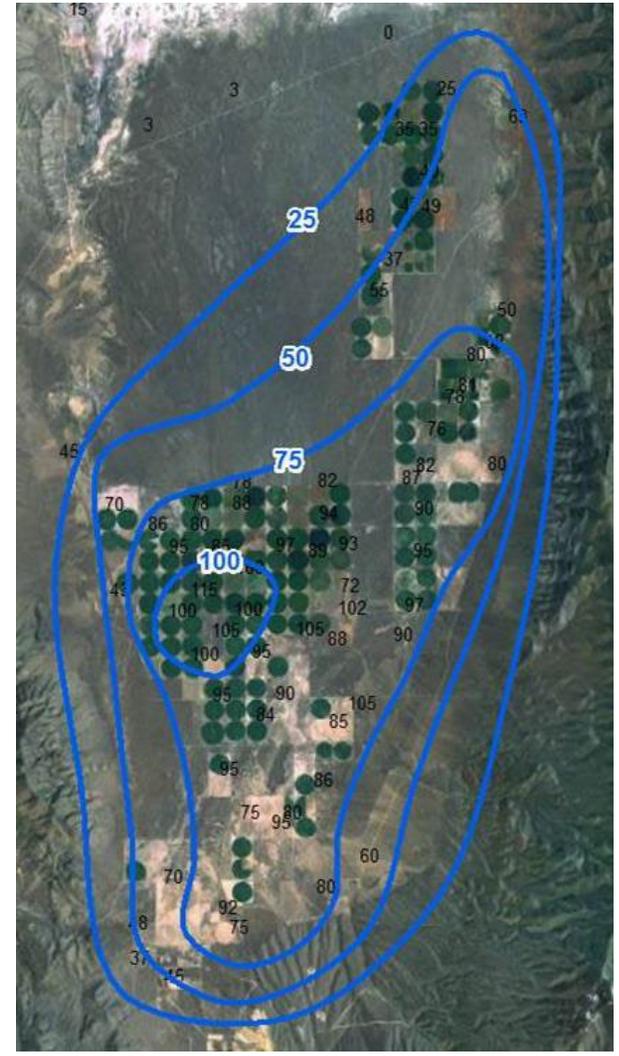
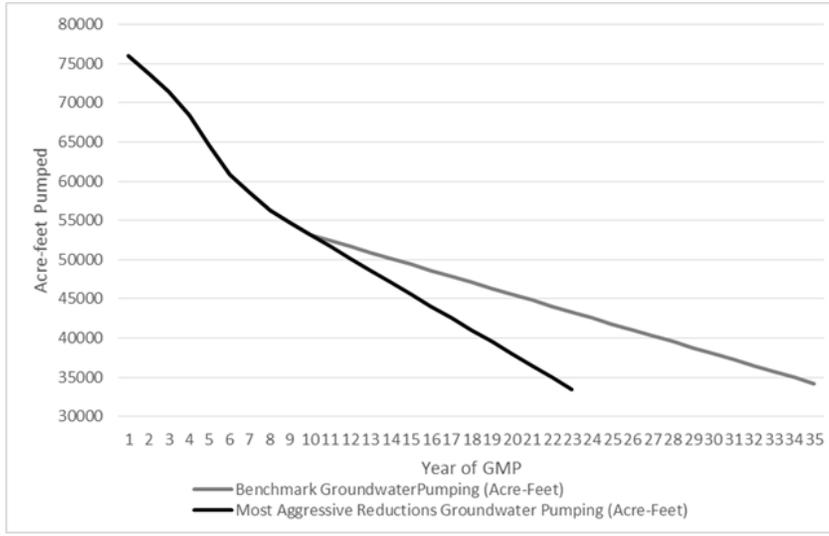
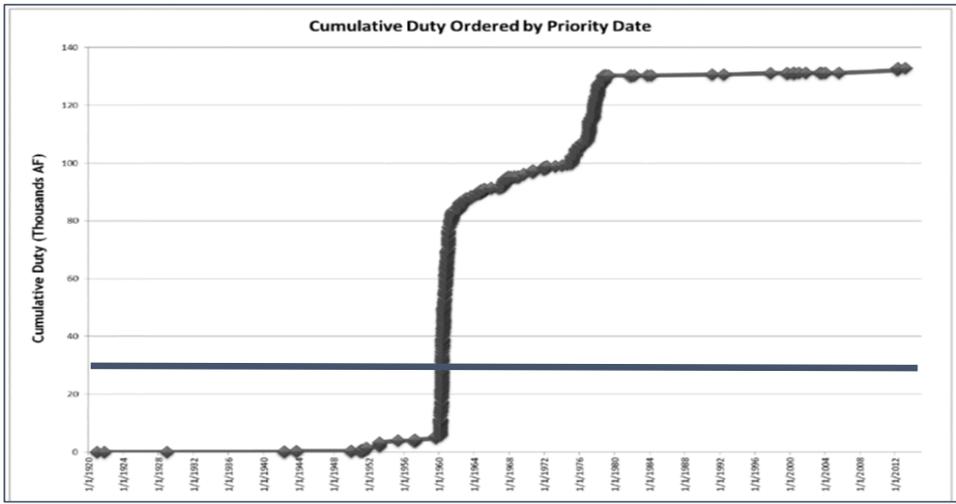
BREAK (5:30-5:45)

Solar Discussion (5:45-6:15)

Remaining questions and concerns (6:15-6:40)

Wrap-Up (6:40-6:45)





New Requirement on Diamond Valley GMP – SB 113

Beginning on October 1, 2033, the State Engineer shall review any groundwater management plan approved before October 1, 2023, to determine whether there has been significant progress towards stabilizing the water level of the basin, as determined by the State Engineer. If the State Engineer determines there has not been significant progress, the State Engineer shall...order:

- (a) The groundwater management plan dissolved; and
- (b) That withdrawals, including, without limitation, withdrawals from domestic wells, be restricted in that basin to conform to priority rights until the water level of the basin is stabilized.



\$100 Million in Grant Funding for Nevada Water Infrastructure Projects

Jul 05, 2023

The Nevada Department of Conservation and Natural Resources (NDCNR) is pleased to announce that \$100 million in grant funding is available statewide for qualifying projects. These grants are aimed at reducing water demands across the state, as well as supporting investments to repair and replace aging water infrastructure. NDCNR is currently seeking applications for competitive grants through the Nevada Water Conservation and Infrastructure Initiative (NWCII). Eligible projects include water conservation projects; infrastructure investments to drinking water, stormwater, and wastewater systems; retirement of water rights in over-appropriated basins; and more. Applications for NWCII competitive grants must be submitted through the Nevada Water Infrastructure Finance System at ndep.nv.gov. **Project applications must be**

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The NWCII will provide up to \$25 million in grant funds for projects that implement strategic and innovative water retirement programs in ground water basins that are over-appropriated. Prospective grant applications should demonstrate effective and scalable programs for the retirement of ground water rights in over-appropriated ground water basins. **Applications for ground water retirement programs must be submitted by October 2, 2023 at 10:00 AM.**

EXEMPT
(Reprinted with amendments adopted on April 17, 2023)
FIRST REPRINT **S.B. 176**

SENATE BILL NO. 176—SENATOR GOICOECHEA
FEBRUARY 20, 2023

Referred to Committee on Natural Resources

SUMMARY—Establishes provisions relating to the conservation of groundwater. (BDR 48-79)

FISCAL NOTE: Effect on Local Government: No.
Effect on the State: Contains Appropriation not included in Executive Budget.

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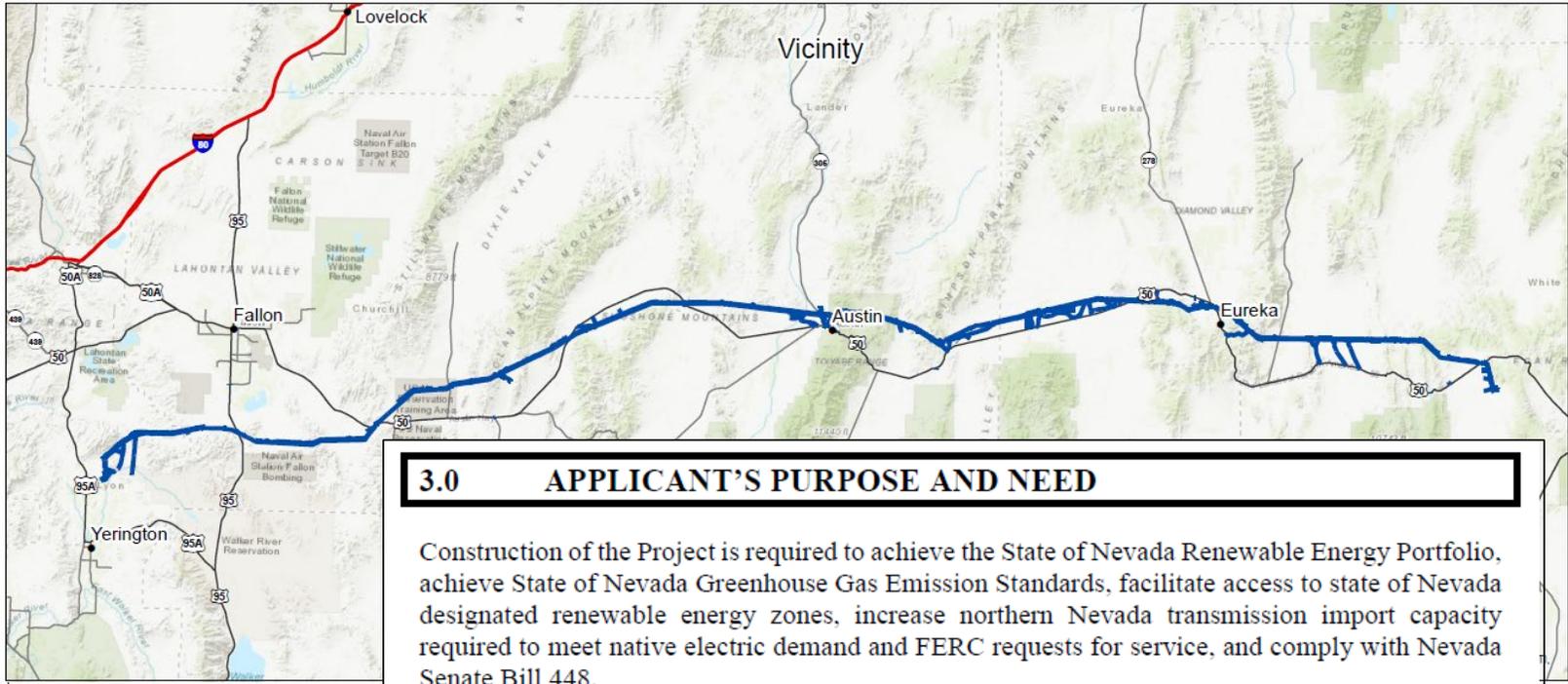
EXPLANATION - Matter in *bolded italics* is new; matter between brackets (*revised/inserted*) is material to be omitted.

AN ACT relating to water, creating the Account for Purchasing and Retiring Water Rights; establishing the Nevada Water Buy-Back Initiative and the Advisory Committee for the Nevada Water Buy-Back Initiative; requiring the Director of the State Department of Conservation and Natural Resources to purchase certain water rights with money from the Account for purposes of retiring the water rights; creating the Nevada Conservation and Recreation Program; making an appropriation; and providing other matters properly relating thereto.

Legislative Counsel's Digest:

1 Under existing law, any person who wishes to appropriate public waters, or to
2 change the place of diversion, manner of use or place of use of water already
3 appropriated, must apply to the State Engineer for a permit to do so. (NRS 533.325)
4 Existing law further provides that all underground waters within the boundaries of
5 the State are subject to appropriation for beneficial use only under the laws of this
6 State relating to the appropriation and use of water. (NRS 534.020) Section 5 of
7 this bill creates the Account for Purchasing and Retiring Water Rights, to be
8 administered by the Director of the State Department of Conservation and Natural
9 Resources, and requires that the money in the Account only be expended for the
10 purchase of water rights in groundwater basins that are over appropriated. Section 6
11 of this bill establishes the Nevada Water Buy-Back Initiative in the Nevada
12 Conservation and Recreation Program, to be administered by the Director, and
13 establishes requirements for the purchase and retirement of water rights.
14 Section 6.4 of this bill requires the State Engineer to retire water rights
15 purchased by the Nevada Water Buy-Back Initiative.
16 Section 6.2 of this bill establishes the Advisory Committee for the Nevada
17 Water Buy-Back Initiative within the Department and requires the Advisory



3.0 APPLICANT'S PURPOSE AND NEED

Construction of the Project is required to achieve the State of Nevada Renewable Energy Portfolio, achieve State of Nevada Greenhouse Gas Emission Standards, facilitate access to state of Nevada designated renewable energy zones, increase northern Nevada transmission import capacity required to meet native electric demand and FERC requests for service, and comply with Nevada Senate Bill 448.



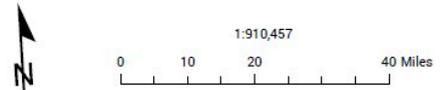
**Greenlink North
Environmental Impact Statement**



Map Prepared by:
B. Buttazoni on
May 2, 2023

— NV Energy Proposed Action

• Cities & Towns



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. Decisions in this document only apply to BLM lands.





Solar Power 101

Photovoltaic solar technology

- Uses panels to collect sunlight
- One panel produces ~300 watts of energy.
- **1 megawatt = 1,000 kilowatts = 100,000 watts**
- **1 megawatt covers about 7 acres**



Agrivoltaics – Jack’s Solar Garden, Longmont, CO

Source: Joanna Kulesza

Utility-Scale Solar



690MW Gemini Solar Project near Las Vegas

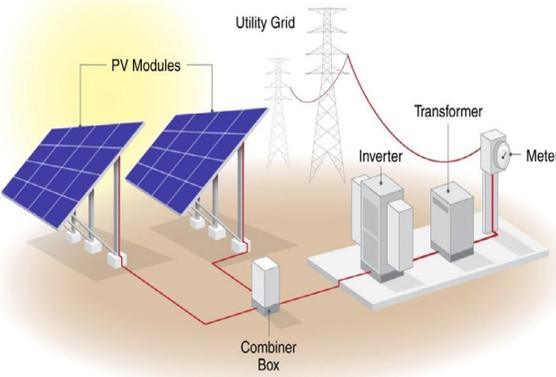
Source: TNC/Bridget Bennett

Vs.

2MW community-scale solar PV project

Source:
<https://www.mercomindia.com/bids-invited-to-install-2-mw-solar-project>

Community-Scale Solar



A typical grid-tied ground mount PV system

Source: NREL

Full Study Intent

- There are separate decisions to be made by farm owners in Diamond Valley as water availability decreases (through the GMP, curtailment, or water retirement) and if solar leases and solar developments are put in place. Can these decisions work together and be informed in a way to benefit landowners and the overall community?
- This study intends to assess the feasibility of permanently retiring water rights and implementing agrivoltaics as well as the receptiveness of the community to this type of project. Findings from the study can be used to inform future funding applications to implement projects in Diamond Valley, and inform similar projects in other communities in Nevada and in other regions where there is groundwater overuse.

Full Study Phases

We are here



- Phase 1: Community scoping and focus group meetings and related summary report;
- Phase 2:
 - Examine approaches for water rights retirement under circumstances of reduced water availability;
 - Compile land use, relevant legal and regulatory mechanisms, groundwater, electrical infrastructure, socioeconomic, and other relevant data;
 - Community meeting to present draft findings and solicit community input;
 - Meeting currently scheduled for February 2, 2024
 - Final report that incorporates community input.



The Nature Conservancy 


EUREKA
-COUNTY-


Eureka Conservation District



THE LANGDON GROUP