

ENGINEER'S REPORT FOR BASE SERVICE CHARGE FOR ROSEDALE RANCH IMPROVEMENT DISTRICT

PROPOSITION 218 PROCEDURES BENEFIT ASSESSMENTS

1/12/2023

January 2023

Prepared for:

North Kern Water Storage District acting for and on behalf of the Rosedale Ranch Improvement District



Prepared by:

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DATE SIGNED: January 12, 2023

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ABBREVIATIONS

AF..... acre-feet
BSC..... Base Service Charge
CPI..... Consumer Price Index
CRC California Resources Corporation
DWR..... California Department of Water Resources
GEI..... GEI Consultants
GSA..... Groundwater Sustainability Agency
GSP..... Groundwater Sustainability Plan
KCWA Kern County Water Agency
KGA..... Kern Groundwater Authority
KRGSA..... Kern River Groundwater Sustainability Agency
M&I..... Municipal & Industrial
MAP Management Area Plan
NKWSD..... North Kern Water Storage District
O&M..... Operations and Maintenance
OPW Oilfield Produced Water
P&P..... Projects and Programs
RRBWSD Rosedale Rio Bravo Water Storage District
RRID Rosedale Ranch Improvement District
SGMA..... Sustainable Groundwater Management Act
SWID..... Shafter-Wasco Irrigation District

EXECUTIVE SUMMARY

The passage of Proposition 218 in the late 1990s added Article XIII(D) to the Constitution of the State of California, which requires, among other matters, the preparation of an “Engineer’s Report” in support of any special assessment or increase in the amount of an existing assessment. The North Kern Water Storage District (NKWSD or North Kern) Board of Directors, acting for and on behalf of the Rosedale Ranch Improvement District (RRID or Rosedale Ranch), has determined that it is necessary to increase the Base Service Charge (BSC) to fund administrative and project costs of Rosedale Ranch in order to continue providing services that confer special benefits to RRID landowners. With increasing costs over the last 25 years and planned water management projects the BSC has annually been set at or near the maximum authority, which is not keeping pace with the costs of providing such services. The current maximum authorized amount of the BSC that NKWSD levies is \$28.60 per acre and is based on a levy established by NKWSD’s Board of Directors in 1996, prior to the implementation of Proposition 218. BSCs are considered to be Special Benefit Assessments under Proposition 218.

This report is prepared in accordance with State law to describe the benefits to be derived by each parcel upon which such assessments will be levied. Assessments are set in accordance with the proportionate special benefit to be derived by each parcel, pursuant to Proposition 218. Accordingly, the Board of Directors commissioned the preparation of this Engineer’s Report, subsequent to which the proposed increases in the BSC will be put to a vote of the benefitted landowners (in the manner prescribed by Proposition 218). Principal findings include the following:

- 1) Rosedale Ranch operations have included both revenues and costs, where annual revenues must offset annual costs. Revenues have been generated through Water Tolls and the BSC. In the absence of revenues from Water Tolls – which has been frequent (owing to the lack of a surface water supply) – revenues from the BSC must offset costs, which continue to include (1) administration, operations and maintenance (O&M) of NKWSD; (2) contracting for water supplies; and (3) projects and programs (P&P) to achieve sustainable groundwater conditions as required by the Sustainable Groundwater Management Act (SGMA).
- 2) Under RRID Rules and Regulations, the BSCs have two components. An Administrative Base Service Charge is assessed on all lands, both developed and undeveloped, and includes direct and allocated costs of administration. Allocated costs are shared by all landowners within NKWSD including RRID. All other “fixed” costs, including O&M, are included in the Project Base Service Charge, which is assessed only on all developed lands in Rosedale Ranch. Historically, the Project BSC has also included the cost of water purchased by NKWSD for delivery to RRID if and to the extent Water Toll revenues (see below) fell short of recovering the cost of such purchases. As of 2022, the Administrative BSC is \$24.40 per acre and the Project BSC is \$4.20 per developed acre; accordingly, the BSC for developed lands total \$28.60 per acre and the BSC for undeveloped lands is \$24.40 per acre.

- 3) History has shown that the importation and delivery of surface water to lands within RRID has generally corresponded with rising groundwater levels; conversely, periods without the importation and delivery of surface water have generally corresponded with declining groundwater levels. Accordingly, sustainable groundwater levels require the importation and delivery of surface water to lands within RRID and implementation of water management capital projects.
- 4) The Board of Directors directed the preparation of a SGMA Planning Report, specifically for RRID, which was completed in 2020. This report determined that compliance with SGMA will require increased importation of surface water and/or decreased use of groundwater relative to historical levels to achieve groundwater sustainability.
- 5) RRID's surface water supplies have been intermittent. By contract with the City of Bakersfield, RRID was able to purchase Kern River water from the City, primarily during "wet" years on the Kern River; however, that contract expired in 2012. Over the last ten years, RRID was able to purchase surface water supplies in two years (2017 and 2019), both "wet" years on the Kern River.
- 6) Going forward, it is expected that the availability of surface water supplies for purchase will continue to favor "wet" years. The construction of recharge ponds would increase RRID's ability to take advantage of such occurrences, not only due to the increased absorptive capability, but also the off-peak demand that it represents; i.e., recharge ponds are not constrained to an irrigation demand schedule --- they can take water any time water and conveyance capacity are available.
- 7) The Benefits received by the lands within RRID are directly related to the value of those lands with implementation of the water purchases and projects compared to their value if the water supplies and projects are not developed. The Engineer's Report establishes that the benefits derived from the Administrative and Project BSC are directly related to the acreage value of the land; thereby Proposition 218 allows for the Service Charge to be applied to the acreage of each parcel which proportionally reflects said benefits.
- 8) Grant funds are being pursued to assist with the cost of constructing recharge ponds and related conveyance system improvements. If and to the extent these efforts are successful, the funding would serve to reduce the debt service associated with financing the construction of recharge ponds.
- 9) Based on a) review of RRID costs and inflation data for recent years; b) the cost of purchasing oilfield-produced water (assuming the purchase of an average 6,500 acre-feet (AF) annually); c) funding a \$1,000,000 per year reserve account with a funding cap maximum of \$5,000,000 for the development of up to 450 gross acres to recharge ponds (assuming assistance from grant funds) and purchase surface water supplies when available, it is estimated that the Board's maximum BSC authority would have to be increased from \$28.60 to \$218.27 per developed acre, which amount is determined based on the following table:

Table ES-1: RRID Proposed Base Service Charges

ROSEDALE RANCH IMPROVEMENT DISTRICT PROPOSED BASE SERVICE CHARGES	
	Projected for 2024
Land Types	
Developed Lands (Acres)	9,074
Undeveloped Lands (Acres)	519
Total Assessable Lands (Acres)	9,593
Administrative BSC	
Administrative BSC Costs	\$271,000
Administration BSC (\$/ac)	\$28.25/ac
Project BSC	
Total Project BSC Costs	\$1,724,200
Project BSC (\$/Acre)	\$190.02/ac
Developed Lands Total BSCs (Administrative BSC + Project BSC)	\$218.27/ac
Undeveloped Lands Total BSC (Administrative BSC)	\$28.25/ac

The increases in BSC, scheduled to commence for the 2023–2024 tax year, are necessary to cover increasing costs for providing administrative and project development services and benefits. Revenue is also collected through Water Tolls (usage-based charges assessed on the volume of water delivered to landowners in RRID for irrigation, and to cover variable costs related to RRID operations), which are not addressed in this report. The identified projects have associated costs which must be offset by enhanced revenues. Accordingly, project implementation will require a significant increase to the Board’s current maximum authority to set and collect the BSC. The maximum amount of the Administrative BSC is proposed to be \$28.25 per acre and would be charged to both Undeveloped Lands and Developed Lands. For Developed lands there is an additional proposed maximum Project BSC of \$190.02. The total BSC for Developed lands will be up to the total of the Administrative BSC of \$28.25 plus the Project BSC of \$190.02 for a total of \$218.27 per acre.

- 10) Consistent with long-standing practice, which is in accordance with RRID’s Rules and Regulations for Distribution and Use of Water, the amount of the BSC will continue to be set annually by the Board of Directors (acting for and on behalf of RRID) in an amount necessary to offset costs, limited by the maximum assessment authority approved by the benefitted landowners of RRID.

- 11) As allowed under provisions of Proposition 218, the maximum amount would be subject to an annual adjustment for inflation for a period of five years following an affirmative vote of the benefitted landowners, thereby reducing the need to repeat the Proposition 218 process (with its attendant costs) during that period of time.
- 12) Landowner voting on the proposed increase in the maximum BSC assessment authority will be by written ballot, with each ballot weighted according to the proportional financial obligation on the affected property, where the financial obligation will be calculated as the product of the maximum BSC assessment authority proposed herein and the assessed acres of the landowner's parcel(s) within RRID.
- 13) Without the proposed RRID P&P the landowner would certainly contend with groundwater pumping restrictions for access to limited available water supplies currently estimated to be 0.5 AF/Acre. Implementation of P&P will contribute to achieving sustainable groundwater management. Such P&P could reduce the need for, but would not guarantee elimination of, future potential groundwater pumping restrictions.

1. PURPOSE OF THE REPORT

1.1. General

The North Kern Water Storage District (NKWSD or North Kern) on behalf of Rosedale Ranch Improvement District (RRID or Rosedale Ranch) proposes to continue collecting revenue in the form of Base Service Charge (BSC) that will be used to fund administrative and project costs of the RRID to provide services that confer special benefit to RRID landowners. Costs to be funded include those incurred by NKWSD in the administration, operations, and maintenance of RRID, contracting for water supplies, and developing projects and programs (P&P) to achieve sustainable groundwater conditions as required by the SGMA.

This report evaluates RRID's cost recovery program in detail and explains the report's recommendation to keep the current structure of BSC and Water Toll, and to increase the BSC authority to cover increasing costs of providing services and benefits to lands within RRID.

The current authorized maximum amount of the BSC that NKWSD levies is \$28.60 per acre and is based on a levy established by NKWSD's Board of Directors in 1996, prior to the implementation of Proposition 218. BSCs are considered to be Special Benefit Assessments under Proposition 218.

RRID also collects revenue in the form of Water Tolls which are usage-based charges levied on the volume of water delivered to RRID landowners. Water Tolls are not covered in this report.

To ensure that NKWSD for and on behalf of RRID will be able to satisfy its obligations to provide services and benefits to the parcels benefited by RRID operations, this report also recommends establishing an annual inflation rate adjustment to the maximum authorized BSC for the purpose of keeping pace with any increases in the cost to the NKWSD of providing the services and benefits, while also reducing the need for frequent future Proposition 218 proceedings.

1.2. Proposition 218 Requirements

In November 1996, the California voters approved Proposition 218, the "Right to Vote on Taxes Act", which added Article XIII(D) to the California Constitution. Proposition 218 imposes certain requirements relative to the imposition of certain assessments, fees, and charges by local agencies.

Article XIII(D), Section 4, established a number of substantive requirements applicable to special benefit assessments. Accordingly, NKWSD must identify all parcels in RRID that will have a "special benefit" conferred upon them for which the proposed special benefit assessments will be levied. Under Proposition 218, a "special benefit" is defined as a particular and distinct benefit conferred on real property. Within RRID, the special benefits provided to assessed real property include (1) a portion of NKWSD's administration costs to represent all RRID landowners and administer RRID on their behalf and (2) the cost of conveyance and delivery of water supplies, either through surface deliveries or augmentation of the groundwater supply, decreased pumping costs,

and providing sustainable groundwater conditions in the basin underlying RRID. Parcels are classified as either “developed” parcels, which use groundwater (and surface water when available), or “undeveloped” parcels, which do not use any water.

Article XIII(D), Section 4 requirements include:

1. Preparation of a detailed engineer’s report, prepared by a registered engineer certified by the State of California that supports each assessment.
2. The record owner of each parcel identified for assessment shall be given a written notice of each assessment, including the reason for the assessment and the total amount of the charges to the owner’s particular parcel.
3. Notice to the record owner must specify the time, date, and location of the public hearing on the assessment; the notice shall also include a ballot and describe the voting procedures.
4. A public hearing shall be conducted not less than 45 days after mailing the notice, to consider protests and tabulate the ballots.
5. The amount of the assessment shall not exceed the cost to RRID of providing the proportional special benefit conferred.
6. A majority protest exists if the ballots submitted in opposition to the increase in the assessment exceed the ballots in favor of the increase.

1.3. Revenue Objectives

The revenue objectives for RRID consist of the following items:

1. Collect a secure and regularly expected revenue stream sufficient to fund NKWSD’s costs to administer RRID.
2. Collect a secure and regularly expected revenue stream sufficient to procure water and operate and maintain RRID so that water users and landowners benefited by NKWSD’s operations may continue to use water and receive groundwater sustainability benefits.
3. Retain the structure of RRID’s BSC and Water Toll, but increase the BSC to allow the NKWSD to:
 - a. Withstand revenue declines associated with extreme drought.
 - b. Finance programs and recharge projects that address groundwater level declines and imbalances to meet groundwater sustainability goals; and
 - c. Cover the increased cost of water and provide sufficient reserves for purchasing water for recharge in wet periods.
4. Index assessments to the rate of inflation so that NKWSD’s revenues keep up with inflation and reduce the need for frequent and costly future Proposition 218 proceedings.

2. DISTRICT BACKGROUND AND WATER SUPPLY ISSUES

2.1. General

NKWSD was formed in 1935 pursuant to the California “Water Storage District Act” (Division 14 of the California Water Code). NKWSD implemented its initial project beginning in the 1950s, which provides surface water supplies (principally from the Kern River) to support groundwater levels and agricultural operations within the boundaries of NKWSD generally located north of 7th Standard Road. In 1967, NKWSD annexed approximately 64,000 acres. Approximately 8,500 acres of the 64,000 acres are located within RRID, and those parcels do not derive benefits from NKWSD’s principal project. NKWSD levies BSC and Water Tolls on lands that are not situated in RRID, and such charges and tolls are not the subject of this report. An additional annexation of 2,120 acres and detachments totaling 1,000 acres (see Section 2.3) has resulted in a current RRID area of approximately 9,600 acres.

NKWSD is governed by a board of five directors. Each Director is elected to a term of four years by qualified voters within the NKWSD. Regular board meetings are held once a month, on the third Tuesday of the month at the NKWSD’s office.

2.2. Location

RRID is situated in the southern San Joaquin Valley of California, northwest of the City of Bakersfield in the County of Kern (See **Figure 2-1**). The Santa Fe Highway bisects the RRID. Adjacent agricultural water agencies include the Shafter-Wasco Irrigation District (SWID), the Rosedale-Rio Bravo Water Storage District (RRBWS), and Improvement District No. 4 of the Kern County Water Agency (KCWA).

RRID’s original boundary, to which this Engineer’s Report applies, encompasses 9,648 acres of which 9,074 acres are developed. Portions of RRID are within the boundaries of the City of Bakersfield and City of Shafter.

The classification of the lands within RRID are summarized in **Table 2-1** and shown in **Figure 2-2**.

Table 2-1: RRID Parcels and Acreage by Classification

Parcels and Acreage by Classification		
Classification	No. of Parcels	Total Acres
Developed Land	620	9,074
Undeveloped Land	10	519
Non-Assessed (e.g. Railroad, Sump)	12	55
Total:	642	9,648

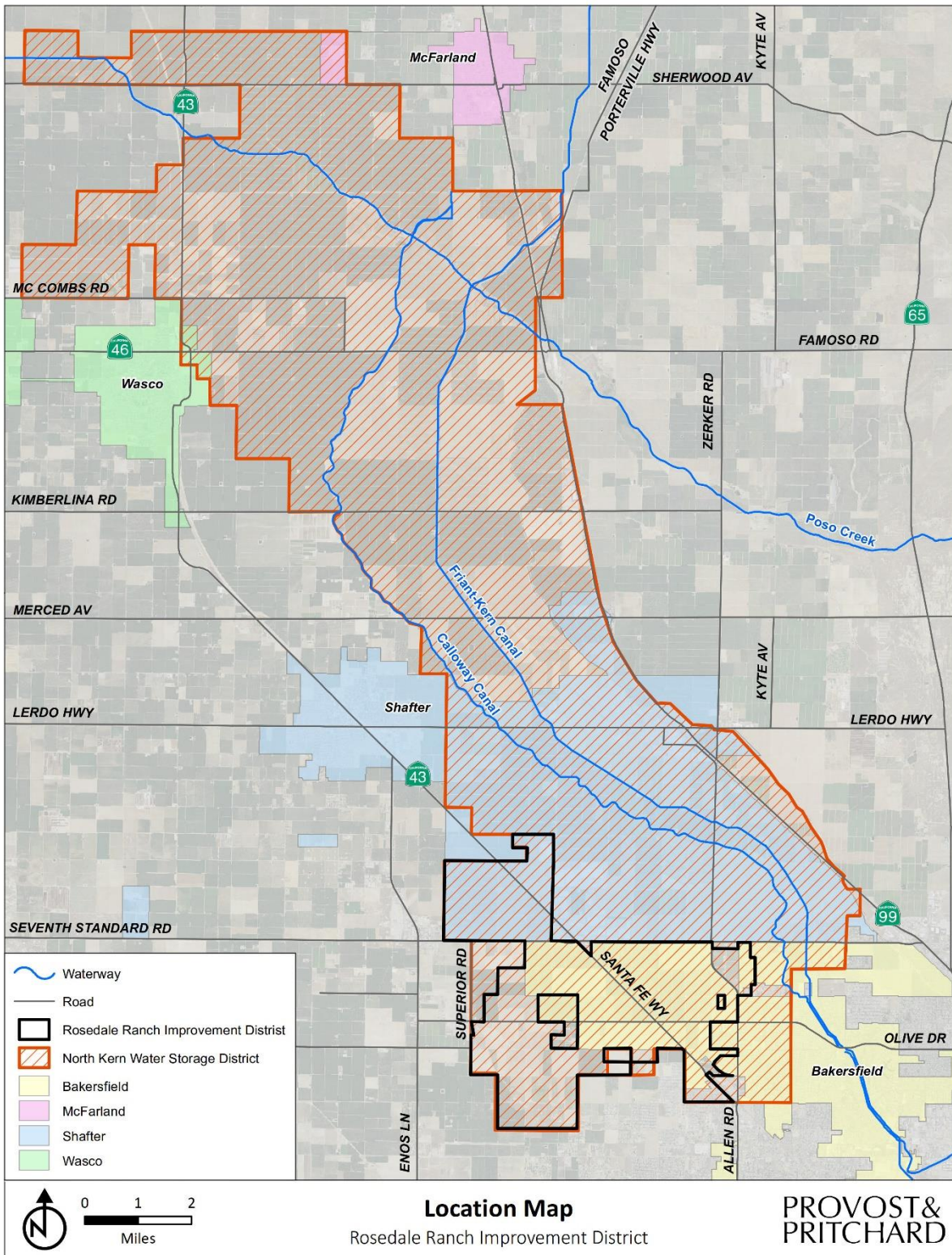


Figure 2-1: Location of North Kern WSD and Rosedale Ranch Improvement District

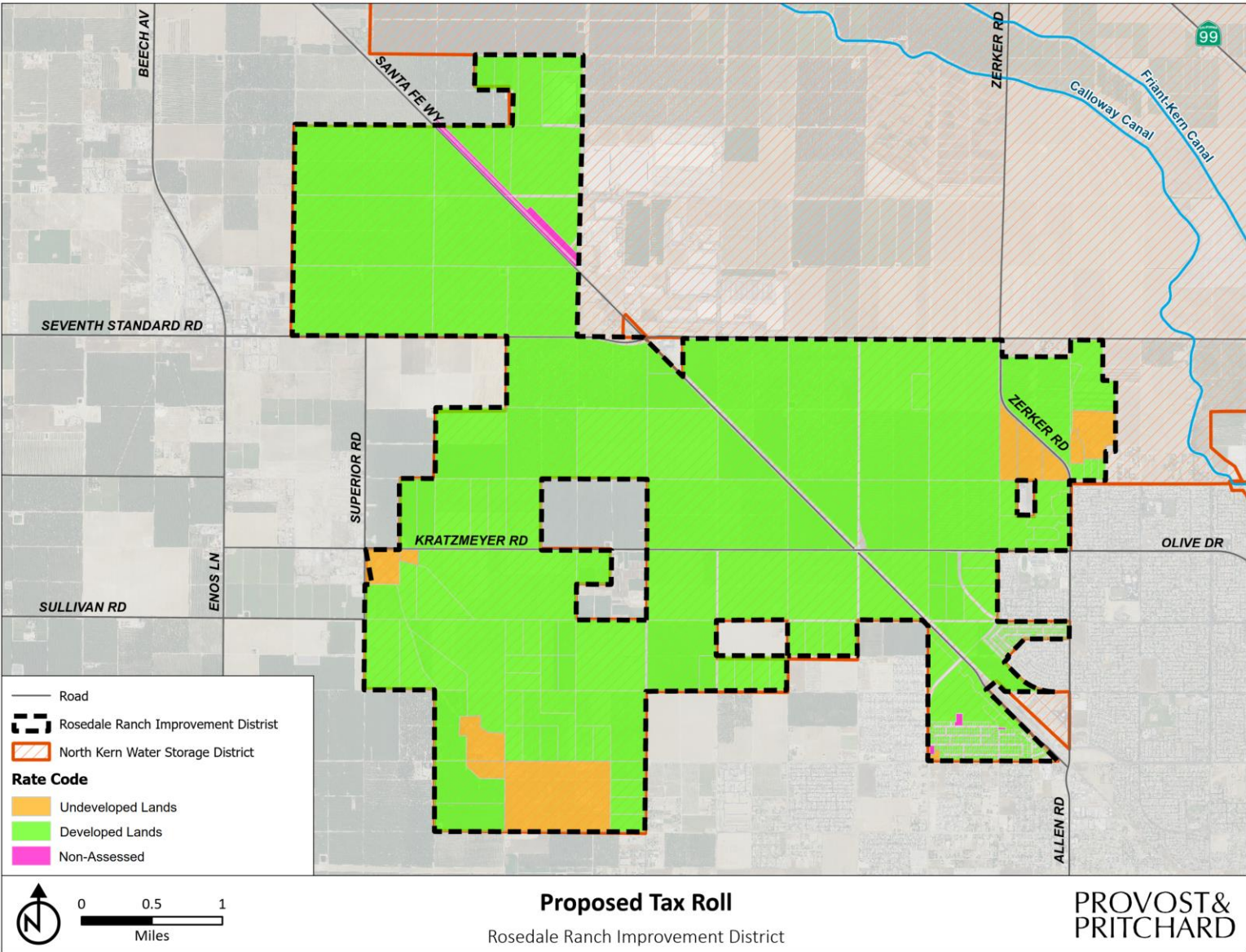


Figure 2-2: Classification of Lands within RRID

2.3. History

RRID was organized as an Improvement District of NKWSD in 1980. Pursuant to the California Water Storage District Law, the NKWSD Board of Directors governs and conducts the business of RRID, and such business is separate and distinct from the business of NKWSD.

RRID's project includes the following objectives:

“Acquire certain water distribution facilities and necessary rights-of-way in order to distribute water to lands within the proposed improvement district for direct irrigation use and groundwater replenishment;

Contract for or otherwise acquire water supplies and/or rights to water supplies to be distributed to the proposed improvement district lands for direct irrigation use or to be used for groundwater replenishment on behalf of all lands in the proposed improvement district;

Preserve and protect rights which landowners in the proposed improvement district will have to canals, appurtenances, water supplies, water rights or any other asset which the proposed improvement district is now acquiring or may acquire in the future; and

Equitably distribute project benefits among, and recover District's costs from, the landowners in the proposed improvement district.”

In 1982, about 2,120 acres north of Seventh Standard Road (and within the 1967 annexation) were annexed to RRID. These lands were included on the conditions that they provide “at their sole cost and expense” all facilities necessary to connect to the Improvement NKWSD's distribution system.

On various dates a total of approximately 1,000 acres have been detached upon or after urban development (mostly residential) uses.

2.4. Distribution System

NKWSD operates an extensive conjunctive-use system to deliver irrigation water to approximately 55,000 acres of farmland. It is a gravity system with three points of diversions from the Kern River: one into the Beardsley Canal; one into the Calloway Canal, and one into the Cross Valley Canal (at Bellevue Weir). The headworks for the Rosedale Ranch canal system is located about one mile south of 7th Standard Road on the Calloway Canal.

The Project adopted by RRID in 1980 involved the acquisition of an irrigation distribution system capable of delivering surface water, to the extent available to all developed land in lieu of pumping groundwater for irrigation. The system, which can be seen in **Figure 2-3** on the next page, consists of unlined canals and appurtenant facilities fed by gravity. At the time of construction, the system included about 15.5 miles of unlined canals and 44 farm turnouts, capable of supplying surface water to 6,650 acres of farmland.

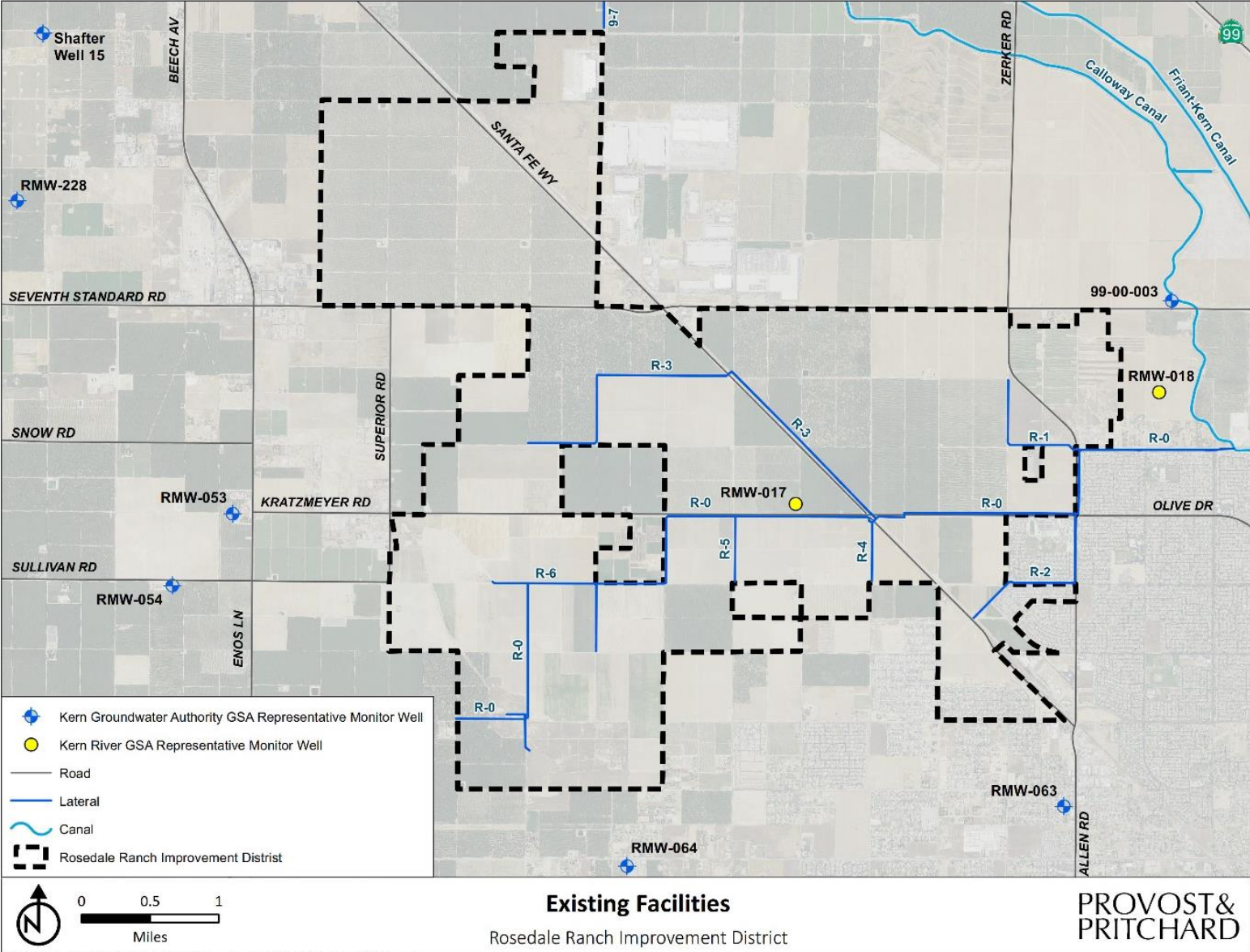


Figure 2-3: Existing Facilities

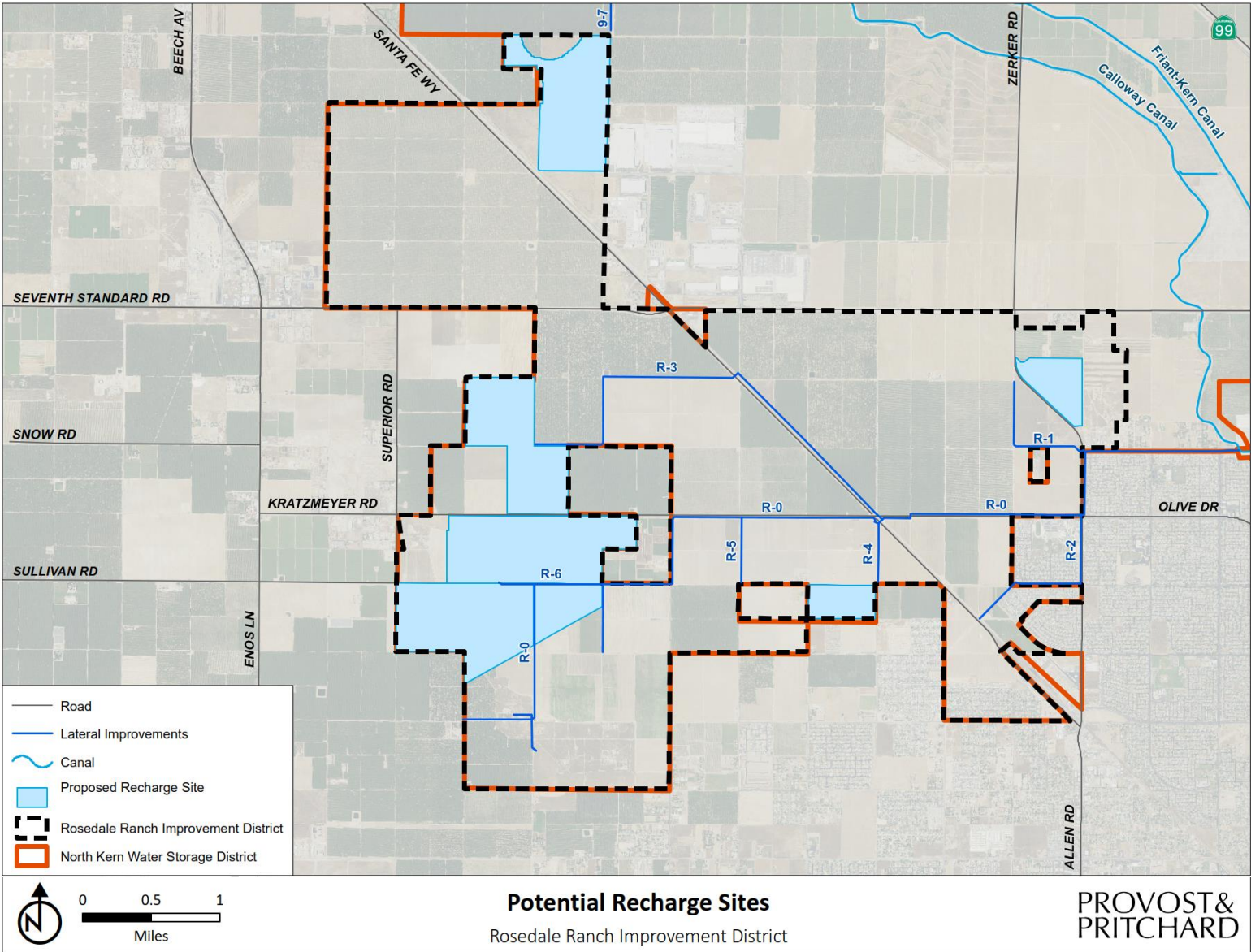


Figure 2-4: Potential Recharge Sites

2.5. Water Supplies

Irrigated agriculture within RRID has been developed through the use of pumped groundwater, which has been supplemented from time to time with surface water.

While the intent of the RRID project is to facilitate surface water deliveries in lieu of pumping groundwater, the reduced frequency of surface water deliveries to RRID has resulted in only a small number of landowners maintaining operable canal turnouts to take surface water. Consequently, there has been an increased reliance on groundwater for irrigation within RRID in recent years.

2.5.1. Surface Water

Initially, RRID received Kern River water, principally during “wet” years, under a long-term contract between Tenneco West and the City of Bakersfield. This contract was assigned to RRID in 1990; however, it expired in 2012. Over the last ten years, RRID was able to purchase surface water supplies in two years (2017 and 2019), both “wet” years on the Kern River. In total, about 300,000 acre-feet (AF) of surface water, mostly from the Kern River, has been diverted for the benefit of RRID since its formation in 1967.

Going forward, it is expected that the availability of surface water supplies for purchase will continue to favor only “wet” years. The construction of recharge ponds would increase RRID’s ability to take advantage of such occurrences, not only due to the increased absorptive capability, but also the off-peak demand that it represents; i.e., recharge ponds are not constrained to an irrigation demand schedule as they can take water any time water and conveyance capacity are available. In years when surplus surface water is available, NKWSD’s priority is to utilize and store water within district boundaries including RRID. NKWSD will endeavor to make surplus water available to RRID when operations or governing regulations provide the appropriate opportunities.

Table 2-2 summarizes RRID’s diversions, deliveries, and recharge since 1993. While the average annual diversion for this period is about 5,900 AF per year, the maximum annual amount was 22,700 AF. Considering the Kern River Water Supply Contract changes and recent reductions in absorptive capacity the expected annual recharge capability, based on the last 5 years, 2017-2021, has changed to 4,000 AF per year.

Table 2-2: Rosedale Ranch Diversions, Deliveries, and Recharge

Diversions, Deliveries, and Recharge					
Year	Total Diverted (AF)	Deliveries/Sales (AF)	Canal Losses/Recharge (AF)	Cumulative (AF)	Running Avg (AF)
1993	22,737	12,041	10,696	22,737	22,737
1994	1,434	83	1,351	24,171	12,086
1995	19,122	9,693	9,429	43,293	14,431
1996	14,719	9,488	5,231	58,012	14,503
1997	17,379	11,849	5,530	75,391	15,078
1998	15,053	10,378	4,675	90,444	15,074
1999	5,921	5,508	413	96,365	13,766
2000	1,621	1,621	0	97,986	12,248
2001	593	593	0	98,579	10,953
2002	103	103	0	98,682	9,868
2003	488	488	0	99,170	9,015
2004	350	350	0	99,520	8,293
2005	14,915	8,264	6,651	114,435	8,803
2006	13,398	8,375	5,023	127,833	9,131
2007	188	188	0	128,021	8,535
2008	0	0	0	128,021	8,001
2009	1,254	181	1,073	129,275	7,604
2010	3,695	1,690	2,005	132,970	7,387
2011	16,350	9,132	7,218	149,320	7,859
2012	339	151	188	149,659	7,483
2013	0	0	0	149,659	7,127
2014	0	0	0	149,659	6,803
2015	0	0	0	149,659	6,507
2016	0	0	0	149,659	6,236
2017	11,538	2,876	8,662	161,197	6,448
2018	0	0	0	161,197	6,200
2019	8,631	1,184	7,447	169,828	6,290
2020	0	0	0	169,828	6,065
2021	0	0	0	169,828	5,856
29-Yr Avg.	5,856	3,250	2,607		
2017-2021 Avg.	4,000				
2021 Acres	9,624				
Avg AF/acre	0.61				

2.5.2. Groundwater

RRID is located on the flank of the Kern River alluvial fan where groundwater with suitable quality is found in the underlying aquifer. In general, there are no perched zones or shallow groundwater tables in RRID. Groundwater is pumped by deep well pumps owned by landowners and urban water providers. Surface water is used conjunctively with groundwater so that water users can stabilize their water supply. Urbanized areas both adjacent to and within RRID utilize groundwater supplemented by treated surface water.

Various agencies measure water levels in some wells in the RRID area periodically. **Figure 2-5** is a graph of water levels in a well near the southwest corner of RRID measured by RRBWSD. **Figure 2-6** is a graph of water levels in a well near the center of RRID measured by the California Department of Water Resources (DWR). The average rate of decline before operations began in 1980 was 4.5 feet per year. From 1980 to 2012 the average rate of decline in **Figure 2-5** was about 1.3 feet per year, an improvement of 3.2 feet per year. Fluctuations in both wells are seen that correlate to wetter and drier periods (recovery during wetter periods and greater decline in drier periods). In recent years steeper declines (6.2 feet per year) due to extended drought, reduced supplies, and reduced in-lieu use are seen in **Figure 2-6**.

History has shown that the importation and delivery of surface water to lands within RRID has generally corresponded with rising groundwater levels; whereas periods without the importation and delivery of surface water have generally corresponded with declining groundwater levels. Accordingly, in the absence of a reduction in water use, sustainable groundwater levels require the importation and delivery of surface water to lands within RRID and implementation of water management projects.

Groundwater conditions in California generally and Kern County specifically have been a major concern for many years. SGMA was passed by the State of California in 2014 and DWR has designated the Kern County Subbasin, within which NKWSD and RRID are situated, as a critically overdrafted, "high priority" basin. SGMA requires local agencies to form Groundwater Sustainability Agencies (GSAs) and to prepare and implement Groundwater Sustainability Plans (GSPs) for groundwater management that avoids the "Undesirable Results" defined in SGMA. The Board of Directors directed the preparation of a SGMA Planning Report, specifically for RRID, which was completed in 2020. This report determined that compliance with SGMA will require increased importation of surface water and/or decreased use of groundwater relative to historical levels to achieve groundwater sustainability.

WATER LEVEL HYDROGRAPH FOR WELL No. 29/25-12M3

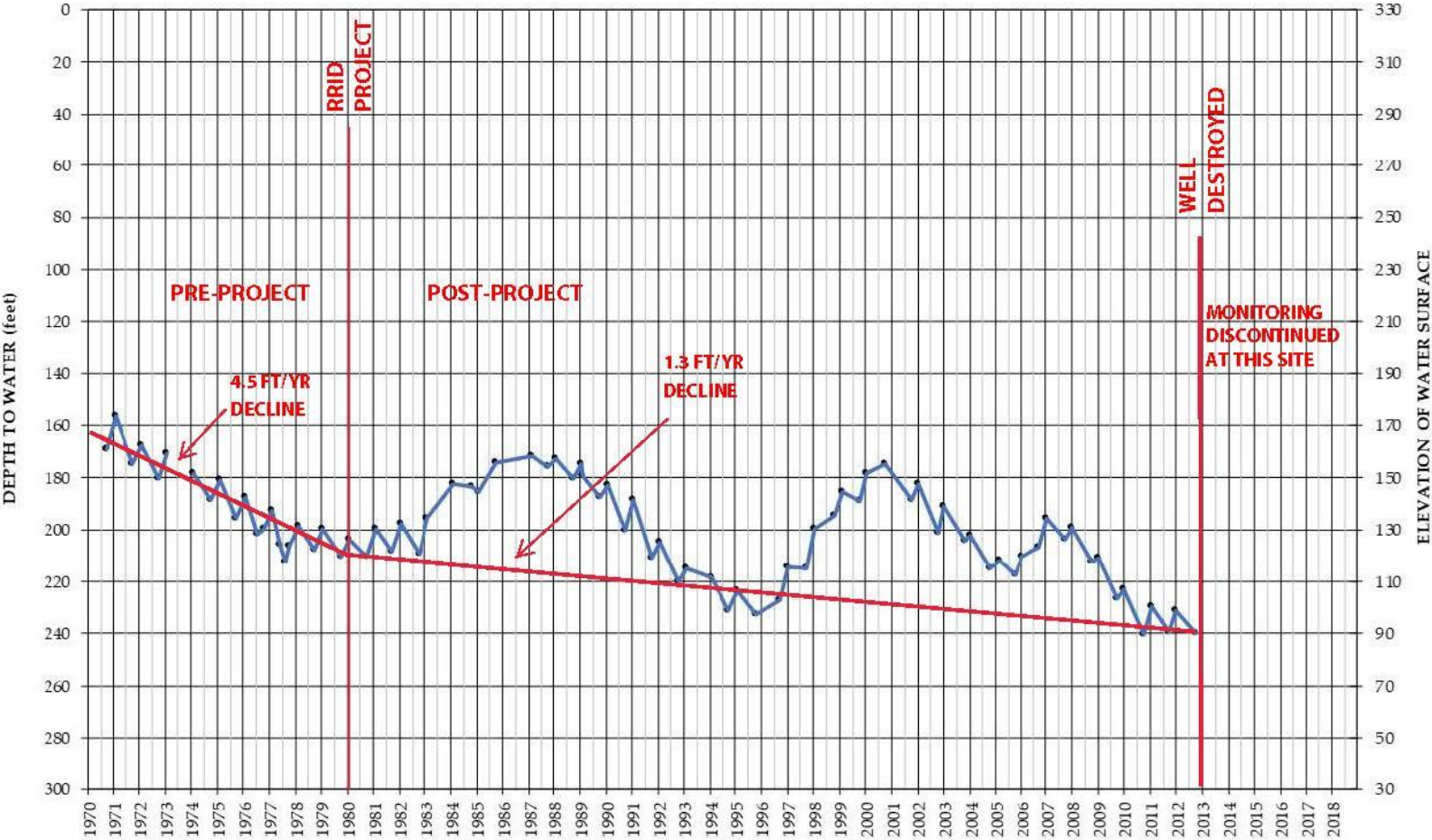


Figure 2-5: Average Depth to Groundwater in Well Near Southwest Corner of RRID

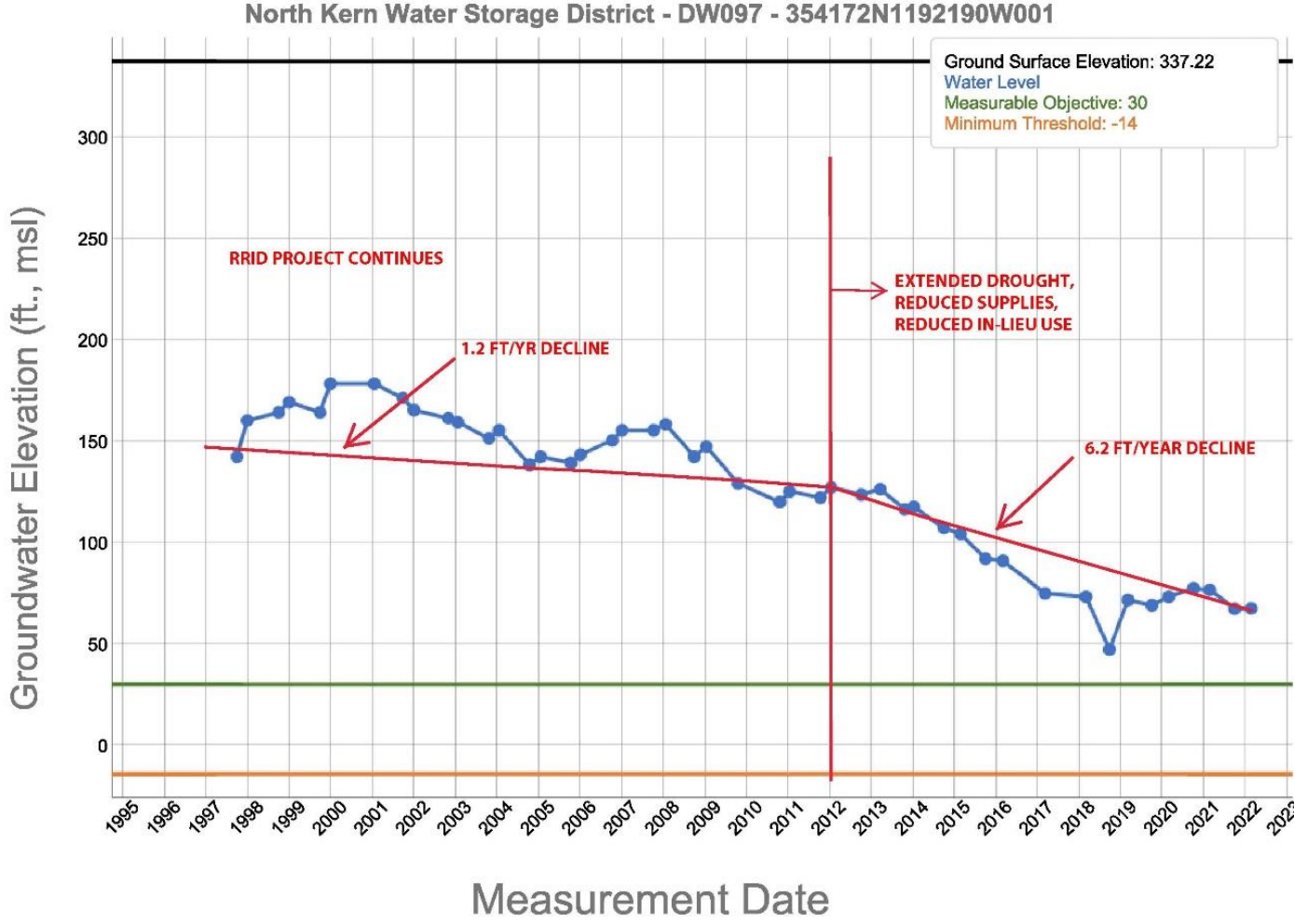


Figure 2-6: Groundwater Elevation near Center of RRID

There are 11 GSAs in the Kern County Subbasin. North Kern, for itself and on behalf of RRID, elected to become a member of the Kern Groundwater Authority (KGA) and participate in coordinated discussions with other water agencies in the Subbasin with regard to SGMA compliance. This also included the coordinated completion of a number of primarily technical tasks. The City of Bakersfield is a member of the Kern River GSA (KRGSA).

In collaboration with the SWID, North Kern completed a Management Area Plan (MAP) in 2020 (which was subsequently amended in July 2022), which includes a portion of RRID as a specific Management Area. This MAP is part of the GSP prepared by the KGA and submitted to the DWR in 2020 (subsequently amended in 2022) in satisfaction of the first submittal requirement under SGMA.

That portion of RRID which is within the City of Bakersfield is covered by KRGSA's GSP. That portion of RRID which is outside the City of Bakersfield is subject to the KGA GSP and the joint MAP prepared by NKWSD and SWID. Under each of the GSPs, the local agencies have compared district level water budget-type groundwater balances which account for the recharge and recovery of water. Groundwater balance calculations have been included in those GSPs and MAPs. The MAP also contains P&P that will promote sustainable groundwater conditions as part of SGMA compliance.

Section 5 of the MAP includes a discussion of potential and proposed projects and management actions intended to address SGMA compliance. For RRID, two projects were identified: a) acquisition of available NKWSD supplies; and b) expanded groundwater recharge. While North Kern's primary Kern River supply is contractually restricted to use within NKWSD, it is proposed to make other Kern River and imported supplies available to RRID during wet years and credit RRID with a portion of the oilfield-produced water which North Kern purchases for meeting irrigation demands and during low irrigation demand delivers to its Rosedale spreading ponds. Currently, recharge occurs in RRID through operation of the unlined canals which make up its irrigation distribution system. Expanded recharge would involve the acquisition of land suitable for recharge and the construction of recharge ponds, along with attendant conveyance system improvements.

There is uncertainty regarding how much water can be acquired going forward or, for that matter, how much will be required to achieve sustainability. Accordingly, the MAP and the results of management actions defined therein, including groundwater recharge activities, will be periodically reviewed and revised as necessary (i.e., adaptive management).

2.6. Projected Water Supply Demands

2.6.1. Urban Development Projections

During the next 20 years, much of the agricultural areas within RRID are forecasted for urban development. There are no current confirmed commitments by local cities for long-term urban development plans or schedules, and development plans can be unpredictable as they are impacted by population growth rate, local policies and planning, and local and national economic conditions. Due to these variables, it is difficult to discern

the precise impact that future urbanization may have on the forecasted water supply demands and therefore the water supply shortfall.

The average water demand for agriculture within RRID is approximately 3 AF/Acre while the current estimated water demand for urban areas is 1 AF/Acre. Any increase in urban development signifies an overall decrease in water supply demand for RRID as agricultural areas are potentially replaced by urban development. However, to have an accurate understanding of the total potential reduction to future RRID water supply demands it is necessary to know the urbanization rate.

For purposes of this report, Provost & Pritchard used estimates prepared by GEI Consultants (GEI) indicating that agricultural water demand will decrease, and total residential, municipal and industrial (M&I) demands will increase forecasting a total decrease of water demand for RRID by over 9,600 AF by the year 2040.

2.6.2. Combined Demand Projections

In its MAP, NKWSD identified groundwater pumping demands within RRID for specified land uses. NKWSD determined the historic Agricultural Demand to be 24,200 AF and the M&I demand to be 2,400 AF totaling 26,600 AF. From this amount the estimated available Kern County Subbasin Native Yield, precipitation, and surface water supplies would be deducted to determine the remaining deficit. The currently estimated Native Yield is 0.15 AF/Acre that is equal to 1,447 AF and the assumed average precipitation is 4.5 inches (0.375 AF/Acre), which is equal to 3,618 AF, both based on total acreage. Including the historical surface water supply of 4,000 AF on average, the remaining deficit is 17,500 AF. The following RRID Supply and Demand chart (**Figure 2-7**) shows supply and demand changes thru 2040 incorporating proposed water supply purchases and project implementation. Details of the water supply P&P that are planned to mitigate this deficit are provided in Section 4.2.

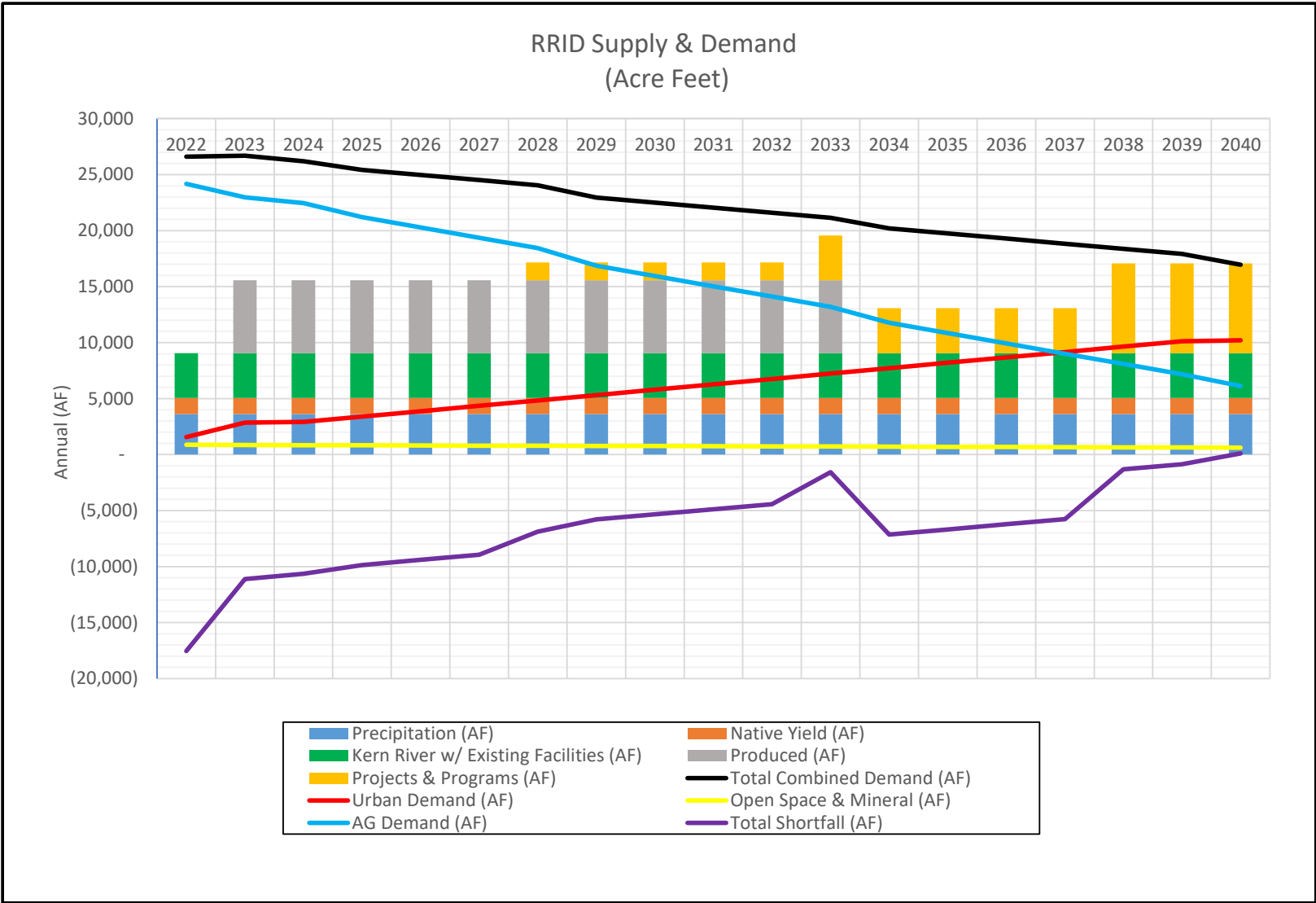


Figure 2-7: RRID Supply and Demand

3. RRID FINANCIAL INFORMATION

RRID currently operates on a budget of approximately \$277,000 per year. This includes direct and allocated costs for RRID operations. Also included are additional direct costs for RRID system maintenance and system weed control plus allocated NKWSD costs for system maintenance, field offices, vehicles, heavy equipment, and capital.

Revenue sources include the BSC, Water Toll, Interest, and Miscellaneous Income.

RRID's revenues and expenses for the past eight years were reviewed in NKWSD's audited Financial Reports and Operating Statements. These Reports and Statements verified that NKWSD has been operating RRID within its established budget, and that at current levels revenues will be insufficient to meet groundwater sustainability goals.

3.1. Current RRID Cost Recovery Program

As a public agency, NKWSD's financial plan is based on recovering the costs of maintaining and operating the NKWSD's Project in an equitable manner and maintaining reasonable reserves. NKWSD's cost recovery structure includes two charges: 1) A Base Service Charge, which is a "land based" charge assessed on a per-acre basis; and 2) a "Water Toll", which is a "usage based" charge assessed on the volume of water delivered to water users. This same structure has been adopted and used for RRID.

Rosedale Ranch operations have included both revenues and costs, where annual revenues must offset annual costs. Revenues have been generated through BSC and Water Tolls (when surface water is available). In the absence of revenues from Water Tolls --- which has been infrequent, owing to the lack of a surface water supply --- revenues from the BSC must offset fixed costs which continue to include administration, O&M of NKWSD, contracting for water supplies, as well as P&P to achieve sustainable groundwater conditions as required by the SGMA.

NKWSD's Rules and Regulations for Distribution and Use of Water ("Rules") for RRID provide for the BSC to be collected annually on a per acre basis from all assessable lands within RRID. The Rules distinguish between developed and undeveloped lands, also providing that a minimum rate per parcel may be established for tracts of land less than five acres in area. Though assessed as a single per-acre charge, it has two components: an Administrative BSC and a Project BSC.

The Administrative BSC is assessed on all lands in RRID, both developed and undeveloped, and includes direct and allocated costs of administration. Allocated costs are those which are shared by NKWSD and RRID.

All other "fixed" costs, including O&M, are included in the Project BSC, which is assessed on all developed lands in RRID. Historically, the Project BSC has also included the cost of water purchased by NKWSD for delivery to Rosedale Ranch if and to the extent the Water Toll fell short of recovering the cost of such purchases.

Undeveloped lands are only assessed the Administrative BSC whereas developed lands are assessed both the Administrative BSC and Project BSC. With the passage of Proposition 218 in 1996, the BSC cannot exceed the maximum annual amount previously charged without the affirmative vote of the landowners in accordance with provisions in

Proposition 218. To date, RRID has not had a Proposition 218 proceeding for the assessment.

In 2022, the Administrative BSC is \$24.40 per acre and the Project BSC is an additional \$4.20 per developed acre. For Developed lands the current total Project BSC are the sum of \$24.40 plus the \$4.20 equaling \$28.60. The maximum amount of the BSC that the NKWSD Board of Directors is authorized to levy is \$28.60 per acre.

3.1.1. District Expenses

District expenses include administrative costs, water purchases, and O&M. A summary of these expenses is included in **Table 3-1**. A description of these expenses is provided herein.

Administration BSC

The NKWSD Board and staff administers both NKWSD and RRID. Most of the costs associated with administration of RRID are allocated costs though occasionally there are Direct Administration costs. These costs make up the Administrative BSC.

Water Supply Costs

NKWSD incurs and is reimbursed by RRID costs associated with contracting and paying for water supplies delivered to RRID. Current Supplies include wet year Kern River supplies and oilfield produced water. This cost is part of the Project BSC.

Groundwater Replenishment

Miscellaneous costs associated with groundwater replenishment in RRID are tracked in this budget category. This cost is part of the Project BSC.

System Operations and Allocated System Operation

NKWSD operations staff operate the shared distribution system that conveys water to lands within both NKWSD and RRID. Consequently, costs associated with RRID's system operations are accounted under the System Operations line item in the Budget. The portion of NKWSD's system operations associated with shared portions of the distribution system are partially allocated to RRID under the Allocated System Operations line item. For the 2022 Budget, no costs are charged for the System Operations. This cost is part of the Project BSC.

System Weed Control

NKWSD maintenance staff perform weed control on RRID's distribution system. Costs are accounted under System Weed Control. This cost is part of the Project BSC.

Other Allocated Costs

Various other costs of NKWSD are allocated to RRID and tracked by the following categories: Field Office, Light Vehicles, Heavy Equipment, System Maintenance, and Capital. This cost is part of the Project BSC.

Table 3-1: RRID Current Budget

RRID CURRENT BUDGET FOR 2022	
Administrative BSC (\$/ac)	\$24.40
NKWSD Allocated and Direct Administration Costs	\$232,400
Project BSC (\$/ac)	\$4.20
Projects Operations and Maintenance	
Groundwater Replenishment	\$1,300
System Operations	-
Recharge Operations	N/A
System Maintenance	\$300
System Weed Control	\$3,100
Recharge Pond Maintenance	N/A
Allocated System Operations	\$10,600
Allocated System Maintenance	\$23,100
Allocated Light Vehicles	\$1,100
Allocated Heavy Equipment	\$1,200
Allocated Capital	\$4,000
Total Project Operations and Maintenance Cost	\$44,700
Subtotal Admin, Project Operations and Maintenance	\$277,100
Produced Water Supply Costs (\$/ac)	
CRC Oilfield Produced Water	0
Total Produced Water Supply Costs	0
Projects & Programs Costs (\$/ac)	
450 Acre Recharge Project Design, Permitting, Land, and Construction	0
Water Supply Acquisition	0
Total Project BSC Costs	0
Total Project Base Service Costs	
	\$44,700
BSCs for Developed Lands (\$/ac) – 9,074 ac	
	\$28.60
Administrative Service Charge	\$24.40
Project Service Charge	\$4.20
BSC for Undeveloped Lands (\$/ac) – 519 ac	
	\$24.40

3.1.2. Revenues

The NKWSD's main revenue source for RRID comes from the Administrative and Project BSC. The current amount collected for the Administrative and Project BSC is \$277,100 annually.

Water Toll revenue comes from landowners who receive surface water supplies from NKWSD when available. The amount of water available varies greatly and is not available every year. In recent years, revenue from water tolls has ranged from \$73,657 (in 2017) and \$82,136 (in 2019). This revenue comes from the Water Toll and only covers water delivery costs for those water users. The Water Toll is not included in the budget for setting the BSC.

Miscellaneous income could come from grant funding or third-party participation in various projects.

3.2. Inflation

The effect of inflation was reviewed based on the following:

1. Actual RRID Expenses based on audited Financial Reports and Operating Statement;
2. Consumer Price Index (CPI): United States CPI data from 2016 to 2021 averaged about 2.5%. CPI increased greatly in 2021 and 2022 with an increase of 8.5% from July 2021 to July 2022 in the Western Region. The Federal Planning Bureau forecasts of future inflation show inflation rates continuing well above 6% through the end of 2022 and rates dropping from 4% to just below 2% through 2023.

4. PROPOSED PROGRAMS, PROJECTS, AND BUDGET

4.1. General

While there is uncertainty concerning how future urban development of lands in RRID and the provision of urban water supplies for them will unfold, for now it is assumed there will be some significant level of urban development and that RRID will need to provide a sustainable water supply for all lands within the boundaries of RRID. P&P discussed in this section were budgeted for RRID. NKWSD will continue to look for opportunities to reduce program and project costs, apply for grants, and find funding partners but may need to propose future additional projects as water management may need to adapt to changing water demands, supplies and the associated groundwater level elevations. Budgeting currently assumes grant funding and that project costs will be financed through the new proposed Project BSC.

4.2. Proposed Programs and Projects

As discussed in Section 1.3, RRID must meet groundwater sustainability goals under SGMA. GEI assisted NKWSD and RRID in developing a water supply and capital project plan to address its groundwater deficit of 17,500 AF. The goal of the program is to develop facilities and to acquire water supplies sufficient to offset the supply shortfalls identified in the MAP. NKWSD has identified the availability of 6,500 AF/year of reclaimed oilfield produced water that can be purchased by RRID. The remaining shortfall can be offset by developing recharge facilities within RRID that can recharge up to 7,200 AF per year (on an average annual basis) and also fallowing said lands which reduces irrigation water use by approximately 1,440 AF per year (for a total P&P annual yield of 8,640 AF per year). A large enough cash reserve will need to be developed in order to effectively and progressively acquire land to construct groundwater recharge facilities and to purchase the wet year water.

Proposed Programs and Projects planned for RRID include the following:

4.2.1. Acquire Produced Water Credit

- California Resources Corporation (CRC) Oilfield Produced Water (OPW) – NKWSD entered into a contract with CRC to receive a minimum of 11,200 AF/year of OPW and the contract allows for a maximum of about 20,000 AF/year, but recent delivery average is only about 9,000 AF/year. CRC estimates that it continues to deliver 9,000 AF/year of OPW to NKWSD of which an average of 6,500 AF/year could be allocated to RRID. The price of the water and cost to deliver has been running between \$90/AF and \$111/AF. The amount of 6,500 AF/year at \$100/AF will be used for budgeting purposes.
- Current Waste Discharge Requirements permit authorizes CRC OPW to be delivered to NKWSD's Rosedale Spreading Ponds and this proposed project does not alter this surface point of discharge. Delivery of CRC OPW will continue at this location and RRID will be allocated an annual average of 6,500 AF to count towards RRID's available groundwater supplies.

4.2.2. Groundwater Recharge and Water Supplies Reserve Fund

4.2.2.1 Groundwater Recharge Facilities

- Preliminary studies have been done by GEI to evaluate construction of new groundwater recharge basins and improve RRID canals to increase conveyance capacities (GEI Consultants, December 2020). Factoring in the effect of fallowing land for use in a recharge project, it has been determined that approximately up to 450 acres of land will need to be dedicated to groundwater recharge to meet the MAP goal of recharging 24,000 AF during a wet cycle. Forecasting that water would be available three out ten years based on historic hydrology for a duration of approximately 107 days with a recharge rate of 0.5 feet/day, the 450 acres would enable reaching the desired goal.
- From GEI's study, NKWSD has narrowed down potential recharge sites that total 950 gross acres (see **Figure 2-4**). Of this acreage, up to 450 acres could be considered and purchased for implementation of the recharge project.
- NKWSD will seek grant funding to offset costs for land acquisition and construction.
- Third parties can be engaged under a variety of possible contractual arrangements to share in the costs and benefits associated with building recharge basins and increasing commitments to spread water in the basins.
- An annually funded reserve is needed so that NKWSD, on behalf of RRID, will have funds available to acquire land and construct groundwater recharge basins over proposed 17-year implementation period.

4.2.2.2 Water Supplies

- Recent costs for purchasing Kern River water have been highly variable and highly volatile, ranging from about \$100/AF (wet year) to \$2,000/AF (dry year). Wet years are expected to occur on average in three years out of ten.
- An annually funded reserve is needed for purchasing wet year Kern River supplies when available with a target of up to 24,000 AF in a wet year once sufficient recharge facilities are available. Wet years are expected to occur three years over a ten-year interval (7,200 AF/year X 10 years of demand shortfall divided by 3 wet years = 24,000 AF). It is assumed \$100/AF is the wet year price to purchase large quantities of water.
- Additional potential supplies could include, without limitation, high flow water from the State Water Project (Article 21) or from the Friant system (Section 215 water), joint banking programs, or participation in the Delta Conveyance Project (tunnel project) and/or the Water Blueprint for the San Joaquin Valley. These projects have been identified but not included in the

Engineers Report since the Kern River wet year supplies are expected to be sufficient to meet the program needs

4.2.2.3 Establishing and Use of Reserve Funds

- In order to achieve projected groundwater sustainability by 2040, RRID will need to obtain sufficient water supplies to eliminate an annual average shortfall 17,500 AF per year currently to 8,000 AF per year when considering potential urbanization. Benefits from the Projects and Management Actions will reduce the shortfall 8,500 AF annually based on projected land use changes. A significant shortfall range is provided due to the unknown extent and schedule of urban development in the RRID area.
- During wet years when water supplies are available for purchase, there is insufficient surface demand to take delivery of potentially acquired annual supplies and therefore established recharge facilities will be necessary in order for RRID to effectively recharge groundwater supplies within its boundaries. In order to efficiently utilize available wet year supplies a projected schedule of use of reserve funds is needed to structure a balance between constructing recharge basins and acquiring wet year supplies during the project implementation period. Management of fund expenditures would need to be adaptive, primarily focusing on initially establishing recharge facilities and then maximizing existing facilities when water is available.
- In consideration of a long-term implementation schedule that adapts for recharge construction and water acquisition opportunities, an evaluation was conducted to determine the minimum annual reserve fund required to reach the goal of groundwater sustainability by 2040. In order to achieve construction of a minimum of 450 acres of new recharge basins and have the ability to acquire and recharge about 24,000 AF in a wet year, the proposed annual reserve funding is \$1,000,000/year. Additionally, the P&P reserve fund will have a funding cap maximum of \$5,000,000. The reserve fund shall not exceed the cap in any one year, and the annual reserve fund component of BSC will be reduced accordingly to not exceed the cap. An example of an adaptive schedule is provided in **Table 4-1**.

4.3. Additional Recharge Opportunities

Additional recharge occurs on-farm by deep percolation of some irrigation water. Deep percolation occurs due to application of water to account for the non-uniform distribution by the irrigation systems. This component of irrigation water can account for 5-15% of the total water applied. Growers are encouraged to irrigate with surface water when available to decrease pumping and provide incidental deep percolation. To the extent direct irrigation is done the demand for groundwater pumping is reduced allowing for a reduction in direct recharge.

Table 4-1: Example Reserve Fund Schedule

Year	2024	2025	2026	2027	2028	2029	2030	2031	2032
Year No.	1	2	3	4	5	6	7	8	9
Recharge Basin Build (Acres)	0	100	0	0	0	200	0	0	0
Costs - Land Acquisition (\$18,000/Acre)	\$0	\$1,800,000	\$0	\$0	\$0	\$3,600,000	\$0	\$0	\$0
Costs - Construction (\$22,300/Acre)			\$1,115,000	\$1,115,000	\$0	\$0	\$2,230,000	\$2,230,000	\$0
Water Acquisition (Acre-Foot)	0	0	0	0	8,000	0	0	0	0
Cost - Wet Year Supply (\$100/AF)	\$0	\$0	\$0	\$0	\$800,000	\$0	\$0	\$0	\$0
Annual Costs	\$0	\$1,800,000	\$1,115,000	\$1,115,000	\$800,000	\$3,600,000	\$2,230,000	\$2,230,000	\$0
Revenue - Grant Funding (50% of Recharge Basin Build)	\$0	\$900,000	\$557,500	\$557,500	\$0	\$1,800,000	\$1,115,000	\$1,115,000	\$0
Adjusted Annual Costs	\$0	\$900,000	\$557,500	\$557,500	\$800,000	\$1,800,000	\$1,115,000	\$1,115,000	\$0
Revenue - Assessed Reserve Fund	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000
Cash Flow	\$1,000,000	\$1,100,000	\$1,542,500	\$1,985,000	\$2,185,000	\$1,385,000	\$1,270,000	\$1,155,000	\$2,155,000

Year	2033	2034	2035	2036	2037	2038	2039	2040
Year No.	10	11	12	13	14	15	16	17
Recharge Basin Build (Acres)	0	150	0	0	0	0	0	0
Costs - Land Acquisition (\$18,000/Acre)	\$0	\$2,700,000	\$0	\$0	\$0	\$0	\$0	\$0
Costs - Construction (\$22,300/Acre)	\$0	\$0	\$1,672,500	\$1,672,500	\$0	\$0	\$0	\$0
Water Acquisition (Acre-Foot)	20,000	0	0	0	0	24,000	0	0
Cost - Wet Year Supply (\$100/AF)	\$2,000,000	\$0	\$0	\$0	\$0	\$2,400,000	\$0	\$0
Annual Costs	\$2,000,000	\$2,700,000	\$1,672,500	\$1,672,500	\$0	\$2,400,000	\$0	\$0
Revenue - Grant Funding (50% of Recharge Basin Build)	\$0	\$1,350,000	\$836,250	\$836,250	\$0	\$0	\$0	\$0
Adjusted Annual Costs	\$2,000,000	\$1,350,000	\$836,250	\$836,250	\$0	\$2,400,000	\$0	\$0
Revenue - Assessed Reserve Fund	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000
Cash Flow	\$1,155,000	\$805,000	\$968,750	\$1,132,500	\$2,132,500	\$732,500	\$1,732,500	\$2,732,500

The NKWSD continues its planning work for direct and in-lieu groundwater recharge project siting, preliminary engineering design, environmental permitting, and land acquisition for programs to recharge the NKWSD's water supplies and those of its project partners. **Table 4-2** provides a summary of estimated annual costs for potential Projects.

Table 4-2: Estimated Costs of Programs and Projects

ESTIMATED COSTS OF PROGRAMS AND PROJECTS		
Programs and Projects	Estimated Costs	Annualized Costs*
450 Acre Recharge Project Design, Permitting, and Construction & Land Acquisition for Recharge Project	\$ 18,135,000	\$695,000
Water Supply Acquisition	\$5,200,000	\$305,000
Total Programs and Project Cost	\$22,300,000	\$1,000,000

* Assumes a 3% discount rate and 30-year period.

4.4. Projected Base Service Costs

Provost & Pritchard worked with NKWSD staff to develop a budget for RRID for calendar year 2024 as a basis for setting future BSC to cover costs necessary to maintain operations of RRID or otherwise required by law. A summary of the general budget by major categories is depicted in **Table 4-3** with comparison to the 2022 budget. The budget is developed assuming 2024 would be a dry year and that recharge facilities are not yet implemented.

Past inflation and projected inflation were factored in the development of the 2024 Budget for RRID. This report recommends use of the CPI to factor inflation into the BSC calculation for each of the five (5) years following 2024. Any adjustment to the BSC following such 5-year period would require a further Proposition 218 proceeding.

Total NKWSD expenses for 2024 are estimated to be approximately \$2.5 Million. Of this amount, NKWSD expenses include administrative costs, water purchases, O&M, and SGMA projects and management actions.

Grant funds are being pursued to assist with the cost of constructing recharge ponds and related conveyance system improvements. If and to the extent these efforts are successful, they would serve to reduce the debt service associated with financing the construction of recharge ponds.

Table 4-3: RRID Prop 218 Projected Budget

RRID PROP 218 PROJECTED BUDGET		
	2022	2024
Administrative BSC (\$/ac)	\$24.40	\$28.25
NKWSD Allocated and Direct Administration Costs	\$232,400	\$271,000
Project BSC (\$/ac)	\$4.20	\$190.02
Projects Operations and Maintenance		\$8.18
Groundwater Replenishment	\$1,300	N/A
System Operations	-	\$4,300
Recharge Operations	N/A	N/A
System Maintenance	\$300	\$17,500
System Weed Control	\$3,100	\$5,500
Recharge Pond Maintenance	N/A	N/A
Allocated System Operations	\$10,600	\$12,500
Allocated System Maintenance	\$23,100	\$27,000
Allocated Light Vehicles	\$1,100	\$1,300
Allocated Heavy Equipment	\$1,200	\$1,400
Allocated Capital	\$4,000	\$4,700
Total Project Operations and Maintenance Cost	\$44,700	\$74,200
Subtotal Admin, Project Operations and Maintenance	\$277,100	\$345,200
Produced Water Supply Costs (\$/ac)		\$71.63
CRC Oilfield Produced Water	-	\$650,000
Total Produced Water Supply Costs	-	\$650,000
Project & Programs Costs (\$/ac)		\$110.20
450 Acre Recharge Project Design, Permitting, land, and Construction	-	\$695,000
Water Supply Acquisition	-	\$305,000
Total Project & Programs Costs	-	\$1,000,000
Total Project BSC Costs	\$44,700	\$1,724,200
BSCs for Developed Lands (\$/ac) - 9,074 ac	\$28.60	\$218.27
Administrative BSC	\$24.40	\$28.25
Project BSC	\$4.20	\$190.02
BSC for Undeveloped Lands (\$/ac) - 519 ac	\$24.40	\$28.25

5. SPECIAL BENEFIT ASSESSMENT RECOMMENDATION

5.1. General

With increasing costs over the last 25 years and a decrease in available surface water supplies, the BSC has annually been set at or near the maximum authority, which is not keeping pace with the costs of providing such services. The current maximum authorized amount of the BSC that NKWSD levies is \$28.60 per acre and is based on a levy established by NKWSD's Board of Directors in 1996, prior to the implementation of Proposition 218.

As described in previous sections of this report, the current BSC are not adequate to cover the increased administrative and project services charges due to inflation and new regulatory activities required per SGMA. An increase to the BSC is recommended to provide a reasonable method for the collection of funds. If adopted, the increase in current BSC will be uniformly applied to all parcels within the RRID which are benefited by the NKWSD's operations in proportion to the actual benefit received by the parcel as is more thoroughly described below.

Additionally, in order to ensure the NKWSD's ability to continue to satisfy its obligations to the parcels benefited by the operations of the NKWSD, it is also recommended that the NKWSD adopt a BSC increase policy for the purpose of attempting to keep up with inflation on an incremental basis, so that the NKWSD may continue its operations while reducing the need for frequent and costly future Proposition 218 proceedings.

The proposed 2024 budget shows that RRID's total revenue needs would be approximately \$1.7 Million and is based on a) review of RRID costs and inflation data for recent years; b) the cost of purchasing oilfield-produced water, and assuming the purchase of 6,500 AF annually; c) funding a \$1,000,000 per year reserve account for the development of 450 gross acres over the next 17 years for recharge ponds (assuming assistance from grant funds) and purchase surface water supplies when available.

To obtain this needed revenue, increases to the BSC will need to commence for the 2023–2024 tax year. The proposed BSC are as follows:

- Administrative BSC – Proposed to be \$28.25 per acre and will be applicable to Undeveloped Lands and Developed Lands.
- Project BSC – Proposed to be \$190.02 per acre and will be applicable to Developed Lands.

Therefore, the proposed total BSC for Undeveloped Lands is \$28.25 per acre and the total BSC for Developed Lands is \$218.27 per acre. It is also proposed that an escalator policy be implemented that will authorize an increase to the BSC to match the Consumer Price Index (CPI) annually for five (5) years after setting the initial amount of the BSC for 2024.

The proposed BSC considers the successful application for grant funding to assist with the land acquisition and construction for recharge ponds, assuming 50% cost matching requirements.

In addition to the BSC, NKWSD will continue to collect usage-based Water Tolls from landowners in RRID for surface water deliveries. Proposed increases to Water Tolls are not addressed in this report.

Although this report examines the projected water supply shortfall out to 2040 and considers P&P to help reach groundwater sustainability, NKWSD, on behalf of RRID, will need to annually evaluate the effectiveness of the implemented P&P. At a future time NKWSD may need to consider expansion of the currently proposed P&P or new ones in order to reach groundwater sustainability. Any changes to the BSC to fund such future P&P would require an additional Prop 218 election.

5.2. Individual Assessment Recommendation Break Down

The structure of the BSC is proposed to continue to be broken into the Administrative Service Charge and Project Service Charge where the Administrative Service Charge applies to all lands, developed and undeveloped and the Project Service Charge applies to developed lands only.

Billing and collection for parcels 5 acres and larger in size will continue to be done by NKWSD staff. Assessment Roll A consists of those parcels.

Billing and collection for parcels smaller than 5 acres will continue to be done by the Kern County Assessor. Assessment Roll B consists of those parcels.

Parcel classifications are used to account for whether the parcel is undeveloped (does not use water), developed (uses surface water and/or groundwater), or non-assessed. The parcels would continue to be classified based on the historical parcel classes:

- Undeveloped Lands;
- Developed Lands;
- Non-assessed Lands.

Regarding the Non-assessed Lands, NKWSD has identified some parcels (e.g. railroads, drainage sumps, rights-of-way) as having no potential water use; therefore these parcels will not be assessed as they receive no special benefit from RRID's operations and importation of water supplies.

The current BSC of \$28.60 per Developed acre and \$24.40 per Undeveloped acre was determined to be insufficient to meet the future revenue requirements of RRID. An increase in revenue is needed to meet budget requirements and build prudent reserves to withstand multiple drought years or unforeseen needs.

The increases in BSC are necessary to cover increasing costs for providing administrative and project development services and benefits. Revenue is also collected through Water Tolls (usage-based charges assessed on the volume of water delivered to landowners in RRID for irrigation, and to cover variable costs related to RRID operations), which are not addressed in this report. The identified projects have associated costs which must be offset by enhanced revenues. Accordingly, project implementation will require a significant increase to the Board's maximum authority to set and collect the BSC.

Maximum amounts of the Administrative BSC are proposed to be \$28.25 per acre. The proposed new maximum authorized amount of the Project BSC is \$190.02 per developed acre.

The total Undeveloped Lands BSC will be \$28.25. The Developed Lands BSC total will be \$218.27, which includes the Administrative BSC plus the Project BSC. These rates will commence with the 2023-2024 tax year levy and then will be subject to the escalator discussed in the next section.

5.3. Annual Assessment Escalator

To account for inflation while avoiding the need for frequent and costly Proposition 218 proceedings, this report recommends that the NKWSD implement an escalator policy based on the CPI without the need for a Proposition 218 proceeding for a 5-year period. The increase would be applied to the BSC Assessments in direct correspondence with the CPI increase as indicated through comparisons of the “CPI, All Urban Consumers, All Items Index, Western Cities with populations between 50,000 and 1,500,000” (the CPI-U).

NKWSD’s Board of Directors will have authority to annually review actual costs of operating RRID as well as income from Water Tolls and adjust the BSC as necessary to offset costs. Such adjustments could result in NKWSD levying a BSC that is less than the maximum authorized amount if costs to the NKWSD of providing services and benefits so warrant. In the event that the Board determines to forgo the increase in a given year, the Board may recover that increase in a subsequent year.

5.4. Special Benefit Determination

5.4.1. General

Consistent with Proposition 218 requirements, this report’s recommended BSC is a special benefit assessment and as such this report shall identify all parcels which will have a special benefit conferred upon them and upon which the recommended assessment will be imposed if adopted. Additionally, this report identifies the proportionate special benefit derived by each parcel in relationship to the entirety of the capital cost of the public improvement, the maintenance and operation expense of the public improvement and the cost of providing the service to the property assessed.

NKWSD provides a benefit to the parcels identified in this report through its importation of water into RRID, which is then either directly delivered to the parcels as surface water or indirectly delivered to the parcels through the recharging of the groundwater supplies within RRID, which a landowner or a municipal water supplier then draw from. The groundwater is recharged directly through canal seepage and recharge projects or indirectly through on-farm deliveries (and deep percolation of the portion not consumptively used by crops).

NKWSD also provides groundwater sustainability benefits through implementation of the MAP and the KGA’s GSP to assure long-term sustainable groundwater conditions plus avoidance of State intervention.

5.4.2. Determination of Benefits

There are multiple benefits provided by the NKWSD to the lands located within the RRID service area. These benefits include administration of a water agency on behalf of RRID landowners, access to water supplies, benefits of being covered by local agencies for purposes of SGMA compliance, and the benefits from the NKWSD's operation and maintenance activities. These benefits result in the recharge and storage of groundwater within RRID and its accessibility at shallower depths than it otherwise would be.

5.4.3. NKWSD Administration Benefit

This component represents the benefit derived from the basic functioning of the NKWSD (i.e., being within a water agency versus being outside a water agency). This administrative component is required by the NKWSD to perform the responsibilities necessary to maintain a functioning district for all landowners with and without water use. Basic functions include items such as conducting periodic board meetings, representing all landowners with respect to water and groundwater matters, preparing the annual audit and financial statements, and performing accounting, management, and legal services to maintain a functioning district, assuming no water deliveries were made.

Some of the monetary value associated with NKWSD Administration Benefit can be seen in the difference in land values for non-districted lands (white areas) versus lands in a district as discussed further below.

5.4.4. Groundwater Stabilization Benefit

Groundwater supply would be significantly impacted if the NKWSD did not import surface water supplies for the benefit of its landowners and water users. Without such supplies, groundwater users would incur higher energy costs for pumping groundwater, degradation of groundwater quality, cost of drilling new deeper wells, and potentially the higher cost of importing water from other sources. If for instance the 4.5 foot per year average decline observed before NKWSD formation continued from 1980 to 2022, groundwater levels would be about 189 feet deeper than they are currently. Provost & Pritchard has estimated the energy cost of agricultural pumping in Pacific Gas & Electric Company service territory as being about \$0.458/acre-foot per foot of lift. With average pumping of 2 AF per acre, the energy savings benefit alone for that 189-foot difference equates to about \$173 per acre per year. With the programs and projects that are proposed for groundwater sustainability in RRID, annual savings are expected to be greater than \$173 per acre per year as recent rates of groundwater level decline lessen.

5.4.5. SGMA Benefit

Additionally, land use capabilities of all lands in the NKWSD will be enhanced by the NKWSD's efforts to achieve SGMA compliance, including by implementation of projects, programs, and water purchases that promote groundwater sustainability. If sufficient sustainable yield cannot be created, the landowners may find that they may have to reduce water use by reducing irrigated acreage or limit number of homes or industrial uses per acre. This can be directly related to the ability to make profitable use of their lands. The SGMA Benefit can be illustrated by considering how landowners with various

land uses will avoid costs associated with having insufficient water supplies and sustainable groundwater conditions. For example:

Farming Land Use

With the programs and projects proposed for RRID farmers can continue to farm property using groundwater and NKWSD supplied surface water at the same level of intensity and farming income as now. The property would also be more valuable for selling later, as it would be viewed as being in a district with groundwater and water supplies as opposed to “white area”.

Without the RRID P&P the farmer would be restricted to using groundwater in an estimated quantity limited to 0.5 AF/Ac that together with rainfall would only support farming about one-third (1/3) of the area currently farmed, which could result in a reduction of farm income or lease values on the other two-thirds (2/3). University of California publications that review costs and expected profits from farming various crops commonly farmed in RRID suggest that such reductions in farm acreage would cut on the order of \$750/acre/year to thousands of dollars per acre per year of farming or lease income.

Residential Land Use

With RRID's Programs and Projects the landowner can continue to use about the same amount of water on the landscape and the home without making major changes.

Without the Programs and Projects, the landowner would be limited to an amount of water that would only support indoor water use and be limited on outdoor water use to the equivalent of desert living. To cope with that the landowner could be forced to re-landscape with desert plants (xeriscape) and/or artificial turf, and do in-home water conservation measures, costing thousands of dollars.

Landowner Desiring to Sell Property for Urban Development

With RRID's programs and projects the landowner could sell property to a developer proposing lot sizes and landscaping that matches current norms (like ¼ acre lots for each home with standard landscaping) at a higher value.

However, without the Programs and Projects, the landowner could only sell the property to a developer proposing a much lower density and with reduced landscape areas resulting in an overall lower land value.

Commercial Land Use

With RRID's programs and projects the landowner can continue commercial use consistent with its current water use without making major changes.

Without RRID's programs and projects the landowner would be forced to make expensive water conservation retrofits or otherwise modify the commercial use in a manner that greatly reduces the size of the facility commensurate with the water use thereby reducing the income potential.

5.4.6. NKWSD Operations and Maintenance Benefit

There is a special benefit that is conferred upon all parcels in the NKWSD that use or have the potential to use water. This benefit includes the value of the NKWSD's distribution system and infrastructure, the benefit derived from the annual operation of the NKWSD, ability to acquire grants and water supplies, and the benefit of ongoing maintenance of the delivery system (including canals, pump stations, pipelines and their associated appurtenances, check structures, control structures, measuring equipment, electrical supply and controls, and turnouts).

The benefit is also partially illustrated in the difference in land value between white areas and district lands. Lands in RRID have the benefit of utilizing water conveyance capacity in portions of NKWSD canals, laterals, a Cross Valley Canal turnout, and RRID's distribution system for direct delivery and/or groundwater recharge that white areas would have to build at great expense.

5.4.7. Assessment Rate Proportionality

Section 4(a) of Proposition 218 specifies that assessments may not "exceed the reasonable cost of the proportional special benefit conferred on that parcel". Benefits for water delivery are considered to have varying benefits to parcels based on how the water is delivered to the user and whether or not the parcels have the ability to accept the NKWSD surface water that is allocated to them or use groundwater.

RRID's Project has provided a more stable and reliable water supply for all assessed lands, particularly in times of drought. The programs and projects proposed for RRID to assure groundwater sustainability will continue to provide stable and reliable water supply and sustainable groundwater conditions. M&I parcels using groundwater, receive a special benefit, since the water that is used by these parcels is pumped from the groundwater that is replenished by NKWSD activities. M&I parcels that do not use surface water are charged their portion of the costs needed to fund the administrative benefit.

5.4.8. Conclusion

The Engineer's Report concludes that the affected properties receive a financial benefit from NKWSD and RRID's operations over and above the BSC assessment because the benefits described above exceed the BSC assessment for NKWSD and RRID operations.

The Engineer's Report shows that the current assessment rates for the BSC have positioned NKWSD to decrease the rate of decline of the aquifer water levels within RRID. However, the current rate does not equip NKWSD to develop a sustainable water budget and prevent exceedance of MAP thresholds. In order to manage the groundwater resources sustainably and flatten the rate of water level decline, continued NKWSD operations and additional projects and management actions are needed for RRID lands to become sustainable and meet SGMA requirements. The report demonstrates that the annual benefits derived from RRID programs and projects are commensurate with the proposed Benefit Assessment.

The Engineer's Report also shows that absent the Benefit Assessment, NKWSD would not be able to fund the proposed programs and projects for RRID, thus properties in RRID

would not have reliable water supplies and sustainable groundwater conditions. In such a case, landowners would be compelled to reduce groundwater pumping through land fallowing, invest in costly water conservation measures, and/or sell property at greatly reduced land values.

6. References

GEI Consultants. (December 2020). *Rosedale Ranch Groundwater Recharge Information Study Technical Memorandum.*

Attachment A
Assessment Roll for RRID