

# Idaho-Maryland Mine Water Supply Assessment

PREPARED FOR

Raney Planning and Management, Inc.



PREPARED BY



# Idaho-Maryland Mine Water Supply Assessment

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Prepared for

**Raney Planning and Management Inc.**

Project No. 704-60-20-14



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December 1, 2021

Date

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December 1, 2021

Date

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## LIST OF ACRONYMS AND ABBREVIATIONS

ac-ft	Acre-Feet
ac-ft/yr	Acre-Feet Per Year
County	Nevada County
District	Nevada Irrigation District
Drought Plan	Water Shortage Contingency Plan
EIR	Environmental Impact Report
ETo	Evapotranspiration
F	Fahrenheit
gpd	Gallons Per Day
gpm	Gallons Per Minute
MGD	Million Gallons Per Day
msl	Mean Sea Level
PG&E	Pacific Gas and Electric
Rise	Rise Grass Valley Inc.
SB	Senate Bill
SMD1	Placer County Sewer Maintenance District 1
SVI	Sacramento Valley Index
UWMP	Urban Water Management Plan
WSA	Water Supply Assessment
WTP	Water Treatment Plant

# Idaho-Maryland Mine Water Supply Assessment

## EXECUTIVE SUMMARY

### Purpose of Water Supply Assessment

The purpose of this Water Supply Assessment (WSA) is to perform the evaluation required by California Water Code sections 10910 through 10915, as established by Senate Bill (SB) 610, in connection with the Rise Grass Valley Inc. (Rise) proposed Idaho-Maryland Mine (Proposed Project) in unincorporated Nevada County (County). The Proposed Project is anticipated to receive potable water from Nevada Irrigation District (District) for dust control, sanitary uses, and to provide a reliable water supply to some nearby residences whose water supply wells could be impacted by mining operations. This WSA evaluates the adequacy of the District's total projected water supplies, including existing water supplies and future planned water supplies, to meet the existing and projected future water demands, including those future water demands associated with the Proposed Project, under all hydrologic conditions (Normal Years, Single Dry Years, and Multiple Dry Years).

### Proposed Project Overview

The Proposed Project is located on two properties owned by Rise, referred to as the Brunswick Industrial Site and the Centennial Industrial Site. According to the Project Description<sup>1</sup>, the majority of the aboveground facilities, access to the underground mine workings, treated groundwater outfall structure, and a portion of the engineered fill would be located on the Brunswick Industrial Site. Engineered fill would also be placed on 56-acres of the Centennial Industrial Site. Of the approximately 175 total surface acres, approximately 104 acres is proposed to be disturbed as a result of the construction of the Proposed Project, including facilities proposed to support dewatering, mining activities and material processing at the Idaho-Maryland Mine. Furthermore, as proposed, the applicant retains the subsurface rights to approximately 2,585 acres that encompass the existing historic Idaho-Maryland Mine workings and the Proposed Project area. As proposed, upon completion of construction of the aboveground facilities, the applicant would begin dewatering the mine, performing advanced exploration, and mining the underground mine workings.

The primary purpose of the Proposed Project is operation of the Idaho-Maryland Mine. The Proposed Project comprises five primary elements:

1. Dewatering the existing underground mine workings
2. Mining existing and new underground workings
3. Processing gold mineralization and rock
4. Placing engineered fill at the Brunswick and Centennial Industrial Sites
5. Export of engineered fill from the Brunswick Industrial Site to support local construction projects

The Proposed Project meets the definition of a "Project" per California Water Code sections 10910 through 10915, as established by SB 610 in 2001, thus requiring the preparation of this WSA.

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<sup>1</sup> Raney Planning and Management, *Draft Project Description*, July 2020.

## **Potable and Recycled Water Demands and Supply Availability**

Projected potable and non-potable water demands for buildout of the Proposed Project total approximately 107,600 gallons per day (gpd), which is approximately 120.5 acre-feet per year (ac-ft/yr).

It is anticipated that potable water demands for the Proposed Project (26.4 ac-ft/yr), if approved by the County, would be served from the Nevada Irrigation District. The non-potable water demands (94.1 ac-ft/yr) will be met by the mine dewatering operations. The inclusion of existing and planned future water supplies is specifically allowed by the Water Code:

*Water Code section 10631(b): Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).*

Pursuant to Water Code section 10910(4), and based on the technical analyses described in this WSA, this WSA demonstrates that the District's existing and additional planned future water supplies are sufficient to meet the District's existing water demands, including those future water demands associated with the Proposed Project.

## **Determination of Water Supply Sufficiency**

As described in Section 7, water demand within the District's service area is expected to exceed the District's supplies by more than 45 percent from 2025 to 2040 in Single Dry Years and by less than 10 percent from 2025 to 2040 in the first and second years of a Multiple Dry Year period.

The potable water demands for buildout of the Proposed Project are included in the District's projected 2040 water demands. Also, the potable water demand of the Proposed Project (26.4 ac-ft/yr) represents less than 0.27 percent of the District's 2020 potable water production (9,858 ac-ft/yr). Therefore, the District will be able to serve the Proposed Project in addition to existing and planned developments with some reliance on demand reductions in dry years by 2025. In addition, the Proposed Project is expected to be a net producer of water through its discharge of treated mine dewatering water to the south fork of Wolf Creek. According to the Proposed Project applicant: the excess treated mine water (approximately 850 gpm, or 1,371 ac-ft/yr) to the south fork of Wolf Creek could be utilized by NID and the mine would add more water to the system than it uses. The mine water flow should also be immune from drought years and so the mine would have a positive effect on water supply. NID could adjust its flows upstream to use the extra water available downstream if it desired to.

## **1.0 INTRODUCTION**

### **1.1 Legal Requirement for Water Supply Assessment**

California Senate Bill (SB) 610 amended state law, effective January 1, 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 sought to promote more collaborative planning between local water suppliers and cities and counties. It requires detailed information regarding water availability to be provided to the city and county decision-makers prior to approval of specified large development projects. The purpose of this coordination is to ensure that prudent water supply planning has been conducted, and that planned water supplies are adequate to meet existing demands, anticipated demands from approved projects and tentative maps, and the demands of proposed projects.

SB 610 amended California Water Code sections 10910 through 10915 (inclusive) to require land use lead agencies to:

- Identify any public water purveyor that may supply water for a proposed development project; and
- Request a Water Supply Assessment (WSA) from the identified water purveyor.

The purpose of the WSA is to demonstrate the sufficiency of the purveyor's water supplies to satisfy the water demands of the proposed project, while still meeting the water purveyor's existing and planned future uses. Water Code sections 10910 through 10915 delineate the specific information that must be included in the WSA.

### **1.2 Need for and Purpose of Water Supply Assessment**

The purpose of this WSA is to perform the evaluation required by Water Code sections 10910 through 10915 in connection with the Proposed Project. It is not to reserve water, or to function as a "will serve" letter or any other form of commitment to supply water (see Water Code section 10914). The provision of water service will continue to be undertaken in a manner consistent with applicable District policies and procedures, consistent with existing law.

## **1.3 Water Supply Assessment Preparation, Format and Organization**

The format of this WSA is intended to follow Water Code sections 10910 through 10915 to clearly delineate compliance with the specific requirements for a WSA. The WSA includes the following sections:

- Section 1.0: Introduction
- Section 2.0: Description of Proposed Project
- Section 3.0: Required Determinations
- Section 4.0: Nevada Irrigation District Water Service Area
- Section 5.0: Nevada Irrigation District Water Demands
- Section 6.0: Nevada Irrigation District Water Supplies
- Section 7.0: Determination of Water Supply Sufficiency Based on the Requirements of SB 610
- Section 8.0: Water Supply Assessment Approval Process
- Section 9.0: References

Relevant citations of Water Code sections 10910 through 10915 are included throughout this WSA in *italics* to demonstrate compliance with the specific requirements of SB 610.

## **2.0 DESCRIPTION OF PROPOSED PROJECT**

The Proposed project location, description, and projected water demands are discussed below.

### **2.1 Proposed Project Location**

The Proposed Project site is located in western unincorporated Nevada County, California (see Figure 2-1). The Brunswick Industrial Site is approximately 2 miles from the center of the City of Grass Valley and State Route 49 as shown on Figure 2-2. The Centennial Industrial Site is adjacent to the Grass Valley city limits and within the City of Grass Valley's near-term annexation timeline. The elevation of the project site ranges from approximately 2,500 feet mean sea level (msl) on the Centennial Industrial Site to 3,000 feet msl on the Brunswick Industrial Site. The Centennial Industrial Site is accessed from Whispering Pines Lane and the Brunswick Industrial Site is accessed from Brunswick Road or East Bennett Road.

The Proposed Project site is within Sections 25, 26, and 36 of Township 16 North, Range 8 East and Section 31 of Township 16 North, Range 9 East of Grass Valley U.S. Geological Survey 7.5 minute quadrangle.

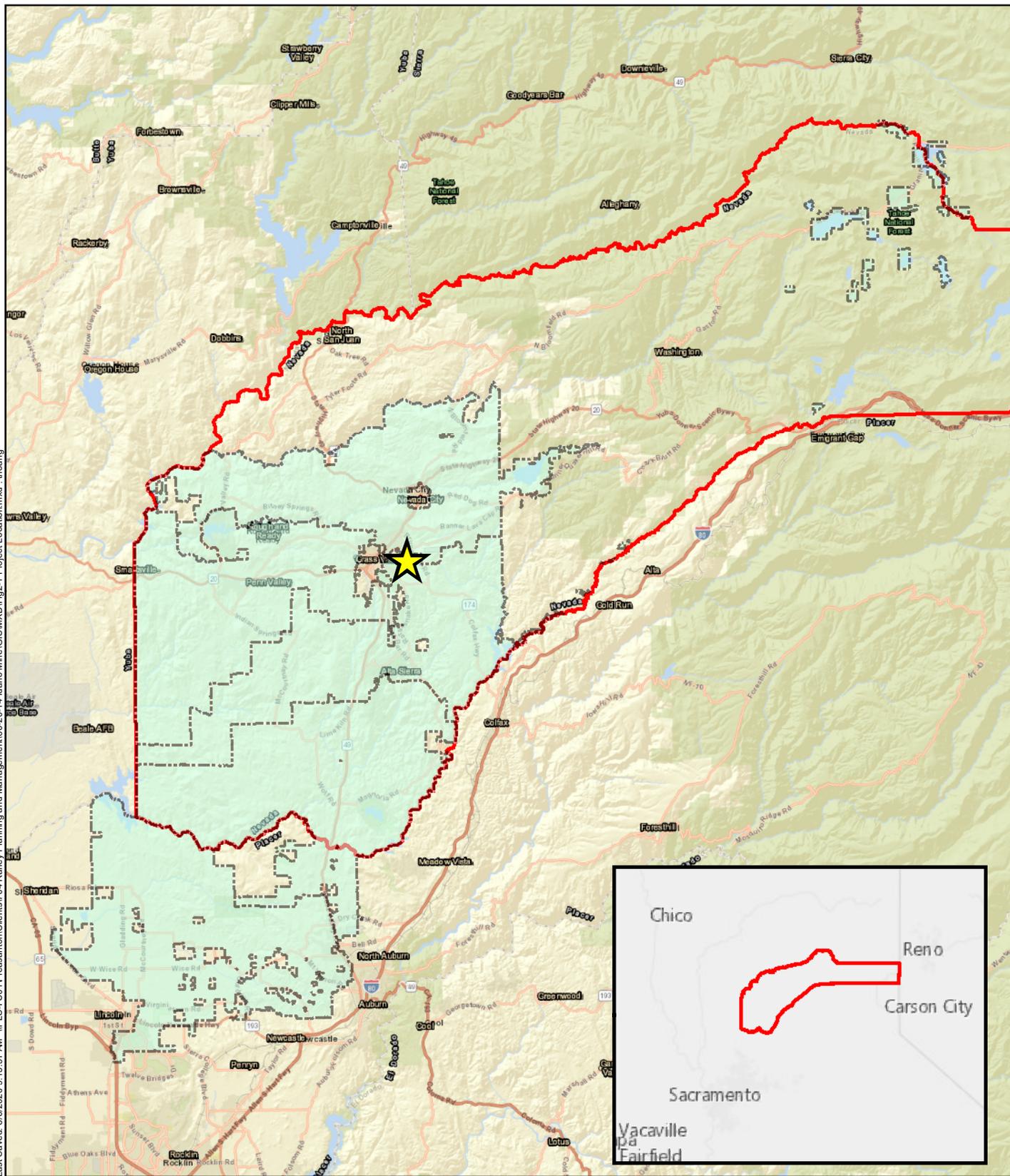
### **2.2 Proposed Land Uses and Acreages**

The Brunswick and Centennial Industrial Sites consist of primarily open space, with remnants of the previous gold mining and sawmill operations still located on-site. The Brunswick Industrial Site is zoned Light Industrial with a Site Performance Combining District (M1-SP). The Centennial Industrial Site is zoned Light Industrial (M1). The surrounding areas and closest receptors include residential, commercial, open space, and industrial land uses. Table 2-1 summarizes the locations of the surrounding land uses and the receptors closest to the project site.

**Table 2-1. Surrounding Land Use and Closest Receptors to Project Site**

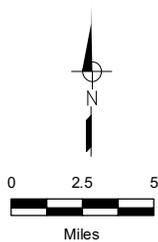
Direction	Land Use	Zoning	Closest Land Use
<b>Brunswick Industrial Site</b>			
North	East Bennett Road, low-density residential, industrial	Residential Agriculture (RA-1.5)	Residential
West	Open space, low-density residential, South Fork Wolf Creek Residential Agriculture (RA -3- PD)	Residential Agriculture (RA -3-PD)	Residential
South	Open space, low-density residential	Single-Family Residential (R-1) and Residential Agriculture (RA-X)	Residential
East	Brunswick Road, open space, low-density residential	Residential Agriculture (RA-3) and Residential Agriculture (RA-5)	Residential
<b>Centennial Industrial Site</b>			
North	Grass Valley city limits, commercial, industrial, Idaho-Maryland Road	GVCTY – Commercial/Industrial (M-1 GVCTY), GVCTY – Special Districts (SP1-B GVCTY)	Commercial/Industrial
West	Grass Valley city limits, commercial	GVCTY – Commercial/Industrial (C-3 GVCTY) and Business Park (BP)	Commercial
South	Open space, East Bennett Road, industrial	Light Industrial (M1) and Open Space (OS)	Industrial
East	Grass Valley city limits, Centennial Drive, industrial, commercial	GVCTY – Special Districts (SPA1-A GVCTY)	Industrial/Commercial
<i>Source: Benchmark Resources, Idaho-Maryland Mine Project Description, November 2019, Table 3-2</i>			

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**Symbology**

-  Project Location
-  County Boundary
-  NID Service Area

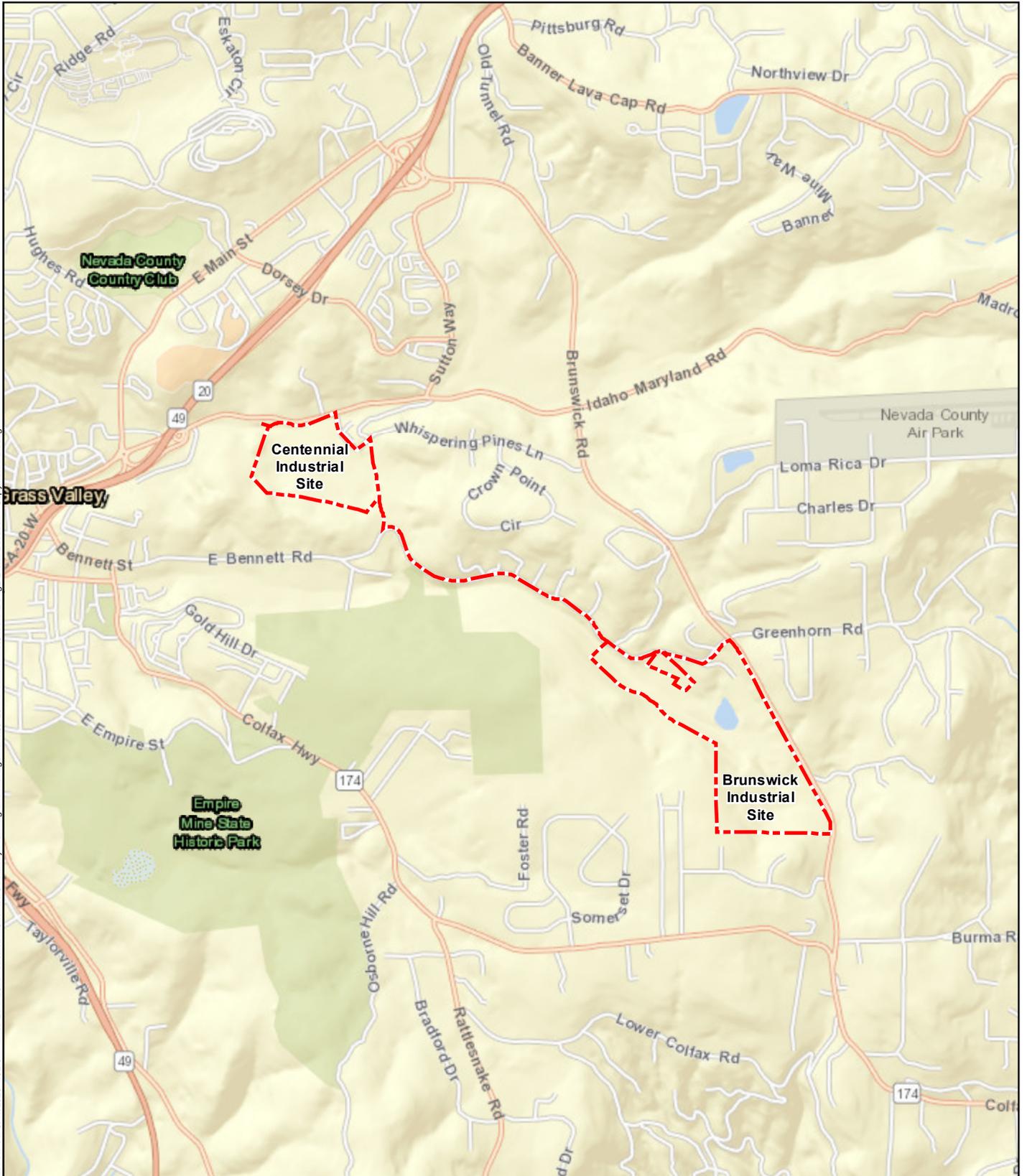


**Figure 2-1**

**Regional Location**

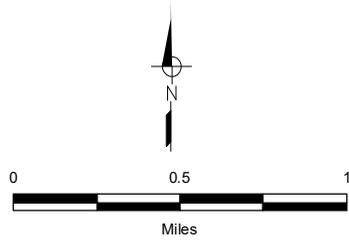
Raney Planning and Management, Inc.  
Idaho-Maryland Mine  
Proposed Project

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**Symbology**

 Project Boundary



**Figure 2-2**  
**Site Location**

Raney Planning and Management, Inc.  
Idaho-Maryland Mine  
Proposed Project

## **2.3 Projected Water Demand**

The projected potable and non-potable water demands for the Proposed Project are discussed below.

### **2.3.1 Potable Water Demand**

An average of approximately 5,700 gpd of potable water will be purchased from the District for sinks, toilets, and showers installed in buildings at the Brunswick Industrial Site. The groundwater dewatering water will be treated before it is used for dust control at the Brunswick Industrial Site. The treated mine water is used instead of NID potable water due to convenience and availability of water at the Brunswick Industrial Site.

Water needed for compaction and dust suppression during activity at the Centennial Industrial Site will also be purchased from the District. Approximately 42,000 gpd may be required for dust suppression and compaction. Compacting 8 hours per day and 5 days per week requires water service of up to 125 gallons per minute. The water used for compaction and dust control in placement of the engineered fill at both Brunswick and Centennial would be for construction purposes.

The area of building for the project at Brunswick will be either paved, left in natural forest state, or landscaped. The landscaped area may require some minor irrigation which would use treated mine water, not potable water.

The engineered fill piles will not be paved as part of this project and the final surface will be compacted crushed rock which will not require dust control watering once construction is complete. The side slopes of the pile will be covered with grass which should not require irrigation.

Because this WSA is assessing the impacts at buildout of the Proposed Project, the water demand during construction will not be included in buildout water demands.

A potable water pipeline will be constructed from the District's Loma Rica potable water system to provide water service to those residences whose existing groundwater wells may be impacted by mine groundwater dewatering operations. Connection to the District pipeline will be voluntary. Although it is not known yet how many residences will connect to the District potable water supply, it appears that up to 31 residences are located along the proposed pipeline alignment (including cul-de-sacs) and could connect. Potable water supply needed for residential use along the proposed pipeline alignment is projected to average 17,900 gpd based on a unit water demand of 0.4 gallons per minute (gpm)/dwelling unit and a maximum of 31 dwelling units to be connected to the District pipeline. The 0.4 gpm/dwelling unit water use factor was provided by the District<sup>2</sup>.

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<sup>2</sup> E-mail from Tonia Herrera, Nevada Irrigation District, July 22, 2020.

**2.3.2 Non-Potable Water Demand**

Groundwater consumed during operations is estimated to be 84,000 gpd. Water consumption includes water vapor in ventilation, air, cemented paste backfill, and concentrates and engineered fill. Because dust control and compaction of engineered fill will occur only during construction and are not part of the buildout mine operations, those water demands have not been included in the buildout water demand projections. The following list provides a description of project elements consuming groundwater:

- **Underground Mining Service Water:** Such uses include water use for dust suppression in rock drills and blasted rock piles, which is piped into the mine workings. Net consumption of water would not result from such activities, because water in underground workings is pumped to the surface for reuse.
- **Water Vapor in Ventilation:** Ventilation air flow through the mine working would become saturated with water vapor, consuming approximately 40,000 gpd (assuming 200,000 CFM airflow, 100 percent saturation of air at 68 degrees F).
- **Cemented Paste Backfill:** Water is needed to transport and bind the cemented paste backfill underground. Such water is permanently retained in the backfill or used in the hydration of cement. Backfilling would consume approximately 20,000 gpd, assuming a 15 percent water content by mass and 500 tons per day of backfill placed.
- **Gold Concentrates and Engineered Fill:** Concentrates and engineered fill shipped off-site would contain approximately 24,000 gpd of water.
- **Dust Control and Compaction:** Active fill areas and unpaved surfaces require water to control fugitive dust, and engineered fill placed at the Brunswick Industrial Site would need to be compacted to meet design standards. Such activities would consume up to 42,000 gpd of water, but only during construction.

The Proposed Project will have a surplus of water from the natural groundwater flow into the ground workings. Once the initial dewatering is completed, approximately 1.224 MGD (850 gpm) are estimated to be pumped to the surface and settling pond on an on-going basis to maintain the dewatered mine. This water will support all project-related non-potable water demand described above. The process plant will run on a closed circuit.

**2.3.3 Projected Water Demand Summary**

The total water demand for the Proposed Project is summarized below in Table 2-2.

<b>Table 2-2. Projected Water Demand</b>	
<b>Water Use</b>	<b>Volume, gpd</b>
Brunswick Industrial Site Potable Water Use (NID)	5,700
Single Family Residential Potable Water Use (NID)	17,900
<b>Total NID Potable Water Use</b>	<b>23,600<sup>(a)</sup></b>
<b>Total Groundwater Consumption for Non-Potable Water Use</b>	<b>84,000<sup>(a)</sup></b>
<b>Total Water Use</b>	<b>107,600<sup>(a)</sup></b>

(a) Approximately 26.4 ac-ft/yr, 94.1 ac-ft/yr, and 120.5 ac-ft/yr, respectively.

Because the source of non-potable groundwater is the mine dewatering operations and only 10 percent of the dewatering volume will be needed, the Proposed Project's non-potable water demands are not discussed further in this WSA.

## 2.4 Projected Water Supply

Water demands for the Proposed Project will be served using the District's existing and future portfolio of water supplies. The inclusion of existing and planned future water supplies is specifically allowed by the Water Code:

*Water Code section 10631(b): Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).*

## **3.0 REQUIRED DETERMINATIONS**

### **3.1 Does SB 610 apply to the Proposed Project?**

*10910 (a) Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part.*

*10912 (a) "Project" means any of the following:*

- (1) A proposed residential development of more than 500 dwelling units.*
- (2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.*
- (3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.*
- (4) A proposed hotel or motel, or both, having more than 500 rooms.*
- (5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.*
- (6) A mixed-use project that includes one or more of the projects specified in this subdivision.*
- (7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling unit project.*

Based on the following facts, SB 610 does apply to the Proposed Project.

- The County has determined that the Proposed Project is subject to the California Environmental Quality Act and that an Environmental Impact Report (EIR) is required.
- The industrial portion of the Proposed Project is expected to occupy more than 40 acres of land (Item 5 in the above list).

The Proposed Project has not been the subject of a previously adopted WSA and has not been included in an adopted WSA for a larger project. Therefore, according to Water Code section 10910(a), a WSA is required for the Proposed Project.

### **3.2 Does SB 221 apply to the Proposed Project?**

In 2001, SB 221 amended State law to require that approval by a city or county of certain residential subdivisions requires an affirmative written verification of sufficient water supply. Per California Government Code section 66473.7(a)(1), a subdivision means a proposed residential development of more than 500 dwelling units. As the Proposed Project includes connecting up to 31 dwelling units, it is not subject to the requirements of SB 221.

### **3.3 Who is the Identified Public Water System?**

*10910(b) The city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources Code, shall identify any water system that is, or may become as a result of supplying water to the project identified pursuant to this subdivision, a public water system, as defined by Section 10912, that may supply water for the project*

*10912 (c) "Public water system" means a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections...*

The Proposed Project is located within the District's Water Service Area. Therefore, District is the identified public water system for the Proposed Project.

### **3.4 Does the District have an adopted Urban Water Management Plan (UWMP) and does the UWMP include the projected water demand for the Proposed Project?**

*10910(c)(1) The city or county, at the time it makes the determination required under Section 21080.1 of the Public Resources Code, shall request each public water system identified pursuant to subdivision (b) to determine whether the projected water demand associated with a proposed project was included as part of the most recently adopted urban water management plan adopted pursuant to Part 2.6 (commencing with Section 10610).*

The District's most recently adopted UWMP (the District's 2020 UWMP) was adopted by the District's Board of Directors in July 2021 and is incorporated by reference into this WSA<sup>3</sup>. The District's 2020 UWMP included water demand projections for current water demands within the District's service area (baseline demand) and anticipated water demands associated with future development projects and planning areas within the District's water service area through 2040.

The District's ability to meet the projected water demands for the Proposed Project, as defined in the District's 2020 UWMP, is described in Section 7.0 of this WSA.

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<sup>3</sup> Nevada Irrigation District 2020 Urban Water Management Plan, prepared by Zanjero, July 2021.

## **4.0 NEVADA IRRIGATION DISTRICT WATER SERVICE AREA**

### **4.1 Water Service Area**

The District is located on the western slope of the Sierra Nevada mountain range. The District encompasses 287,000 acres and covers portions of three counties: Nevada, Placer, and Yuba. The District's watershed is located on the upper reaches of the Yuba River, Bear River, and Deer Creek.

Defined as "a special district operated by and for the people who own land within its 287,000-acre boundary", the District was established as an irrigation district in 1921. The District is governed by a five-member Board, who are elected by District voters.

The District's retail potable water system consists of six service areas. The retail water system connections are predominantly single-family, but also consist of multi-family, commercial, industrial, and institutional customers.

### **4.2 Population**

Table 4-1 shows the District's historical population from 1995 through 2015.

The population estimates for 2020 through 2040 presented in the District's 2020 UWMP are projected as a range based on a customer annual average growth rates. These growth rates are based on customer growth projections estimated for each of the District's seven potable water service areas as estimated by the District staff. Table 4-2 shows the District's projected population in five-year increments to the year 2040.

**Table 4-1. Historical Population**

Year	Population Estimate
1995	36,536
1996	37,004
1997	37,420
1998	37,953
1999	38,686
2000	39,374
2001	41,996
2002	42,609
2003	44,202
2004	45,420
2005	47,000
2006	48,114
2007	49,236
2008	50,118
2009	50,006
2010	49,023
2011	49,341
2012	49,477
2013	49,685
2014	49,994
2015	50,250

*Source: Nevada Irrigation District 2015 Urban Water Management Plan, June 2016, Table 2-2.*

**Table 4-2. Current and Projected Treated Water Customer Population**

Year	Population Served
2020	52,733
2025	53,839
2030	54,927
2035	56,016
2040	57,104

*Source: Nevada Irrigation District 2020 Urban Water Management Plan, July 2021, Table 2-5.*

### 4.3 Climate

In the District’s service area summers have been dry with mild to hot temperatures. Winters are relatively wet, especially in the upper elevations around Nevada City and Grass Valley, with snow levels usually above 5,000 feet. Based on the historical data obtained from the California Irrigation Management Information System and the Western Regional Climate Center, the District’s service area’s Grass Valley average monthly minimum and maximum temperatures are 32 and 87 degrees Fahrenheit (F), respectively.

Table 4-3 summarizes the District’s average temperature and rainfall data in Grass Valley.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Standard Average ETo, in	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Average Maximum Temperature, °F	53.4	55.5	57.8	62.3	71.0	79.6	87.4	87.0	82.0	72.5	59.5	53.4	68.4
Average Minimum Temperature, °F	32.0	33.6	36.1	38.8	45.3	51.2	55.9	54.6	50.1	42.8	36.1	31.6	42.4
Average Rainfall, in	10.26	8.60	8.11	3.74	1.90	0.65	0.14	0.25	0.89	2.54	7.11	9.16	53.34
Average Snowfall, in	2.2	2.2	2.5	0.8	0	0	0	0	0	0	0.4	1.8	10.0

*Source: Nevada Irrigation District 2015 Urban Water Management Plan, June 2016, Table 2-1.*

ETo = Evapotranspiration  
In = inches

## 5.0 NEVADA IRRIGATION DISTRICT WATER DEMANDS

*10910(c)(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g).*

The descriptions provided below for the District’s water demands have been taken, for the most part, from the District’s 2020 UWMP, which was adopted in July 2021. Supplemental information from other available reports has been included to provide the most recent data available and to meet the specific requirements of SB 610.

### 5.1 Historical and Existing Water Demand

The District’s potable water demand increased from 1995 to 2008 and decreased from 2008 to 2010. In 1995, the District’s potable water demand was 9,216 ac-ft/yr and by 2008 the District’s potable water demand had increased to 13,285 ac-ft/yr. From 2008 to 2010, the District’s potable water demand decreased. Table 5-1 shows the District’s water demand from 1995 to 2010.

Year	Population Estimate (from Table 4-1)	Historical Production, ac-ft/yr
1995	36,536	9,216
1996	37,004	9,861
1997	37,420	10,326
1998	37,953	9,574
1999	38,686	11,396
2000	39,374	11,364
2001	41,996	12,505
2002	42,609	12,654
2003	44,202	11,941
2004	45,420	11,841
2005	47,000	11,275
2006	48,114	11,310
2007	49,236	13,198
2008	50,118	13,285
2009	50,006	11,863
2010	49,023	10,358

*Source: Nevada Irrigation District 2015 Urban Water Management Plan, June 2016, Table 4-1.*

## 5.2 Future Water Demand

The District’s projected future water demand through 2040, including water demand for the Project, is summarized in Table 5-2.

	2020	2025	2030	2035	2040
Retail	149,269	142,545	145,988	149,431	152,875
Wholesale	2,999	3,891	4,346	4,948	5,549
Unrecoverable Environmental	9,410	16,359 - 59,527	16,359 - 59,527	16,359 - 59,527	16,359 - 59,527
<b>Total Water Demand</b>	<b>161,678</b>	<b>162,795 - 205,963</b>	<b>166,693 - 209,861</b>	<b>170,738 - 213,906</b>	<b>174,783 - 217,951</b>

*Source: Nevada Irrigation District 2020 Urban Water Management Plan, July 2021, Table 3-10.*

According to the Proposed Project applicant: the excess treated mine water to the south fork of Wolf Creek (850 gpm or about 1,371 ac-ft/yr) could be utilized by NID and the mine would add more water to the system than it uses. The mine water flow should also be immune from drought years and so the mine would have a positive effect on water supply. NID could adjust its flows upstream to use the extra water available downstream if it desired to.

## 5.3 Dry Year Water Demand

The District’s Water Shortage Contingency Plan, outlined in Section 6 of the District’s 2020 UWMP, includes a six-stage plan describing specific actions to reduce water demand by up to 50 percent in the event of a water supply shortage or emergency. In 2015, as a response to the Governor’s Executive Order, the District also passed a resolution for treated water conservation to achieve 36 percent water use reduction from 2013 water use between the months of May through September. The District’s customers were able to achieve the target reductions during a number of months in 2015 and 2016. For all of 2015 and 2016, water reduction was 27 percent and 22 percent, respectively.

The projected future dry year water demand is presented in Table 5-3. It should be noted that projected future dry year water demands are same as normal year water demands. For planning purposes and to be conservative, the District assumes no reduction in demand in dry years.

	2025	2030	2035	2040
Retail	156,800	160,587	164,375	168,162
Wholesale	4,277	4,777	5,439	6,100
Unrecoverable Environmental	16,359 - 41,900	16,359 - 41,900	16,359 - 41,900	16,359 - 41,900
<b>Total Water Demand</b>	<b>177,436 - 202,977</b>	<b>181,723 - 207,264</b>	<b>186,173 - 211,714</b>	<b>190,621 - 216,162</b>

*Source: Nevada Irrigation District 2020 Urban Water Management Plan, July 2020, Table 3-12.*

## 6.0 NEVADA IRRIGATION DISTRICT WATER SUPPLIES

*10910(c)(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f) and (g).*

*10910(d)(1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts*

*10910(d)(2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:*

- (A) Written contracts or other proof of entitlement to an identified water supply.*
- (B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.*
- (C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.*
- (D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.*

*10910(e) If no water has been received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts, the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall also include in its water supply assessment pursuant to subdivision (c), an identification of the other public water systems or water service contract-holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has identified as a source of water supply within its water supply assessments.*

It is anticipated that the Proposed Project, if approved by the County, would be served from the District's existing and future portfolio of water supplies. The inclusion of existing and planned future water supplies is specifically allowed by the Water Code:

*Water Code section 10631(b): Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).*

The water supply for the Proposed Project will have the same water supply reliability and water quality as the water supply available to the District's other existing and future water customers.

The water supplies needed to serve the Proposed Project (together with existing water demands and planned future uses) are predominantly described in the District's 2020 UWMP. Therefore, the descriptions provided below for the District's water supplies have been taken, for the most part, from the District's 2020 UWMP, which was adopted in July 2021.

## 6.1 Existing Water Supplies

The District currently receives water from the following sources:

- Purchased water from Pacific Gas and Electric (PG&E) that generally originates from the same watershed as the District water rights surface water supply.
- Surface water from the Yuba River, Bear River, and Deer Creek watersheds that is diverted and stored under the Districts pre-1914 and post-1914 appropriative water rights.
- Recycled water from Nevada City, Grass Valley, Auburn, and Placer County.

The District does not utilize groundwater as an existing or planned source of water due to limited groundwater availability. The District currently has a policy to not accept stormwater runoff into canals without the appropriate collection rights. The District has no sources of ocean water, brackish water, or groundwater that provide a viable opportunity for development of desalinated water as a long-term supply. The District is currently exploring the feasibility of water transfers on a short-term basis.

Each of these existing supplies is described below. Table 6-1 shows the District’s existing use of these existing water supplies.

<b>Table 6-1. Existing (2020) Water Supplies, ac-ft/yr</b>			
<b>Water Supply</b>	<b>Additional Detail on Water Supply</b>	<b>Actual Volume</b>	<b>Total Right or Safe Yield</b>
Purchased Water		0	54,361
Surface Water	Watershed Runoff	119,500	450,000
	Carryover Storage	169,100	
Recycled Water	-	1,408	as available
<b>Total</b>		<b>290,008</b>	-

*Source: Nevada Irrigation District 2020 Urban Water Management Plan, July 2021, Table 4-6.*

### 6.1.1 Purchased Water

The District’s contracted purchase from PG&E is a surface water supply that generally originates from the same watershed as the District water rights surface water supply. The maximum amount available for District purchase is 54,361 acre-feet (ac-ft) with reductions in dry years based on the Sacramento Valley Index (SVI).

## 6.1.2 Surface Water

The District's primary source of supply is local surface water derived principally from the Yuba River, Bear River, and Deer Creek watersheds that is diverted and stored under the District's pre-1914 and post-1914 appropriative water rights. The water rights allow for a diversion of 450,000 ac-ft, although hydrology and runoff timing rarely allow for full collection of all water rights. The District has an extensive system of storage reservoirs that provides surface water supply to the District's six water treatment plants as well as to the District's raw water customers.

This section provides a description of the District's water rights surface water supply. The water rights surface water supply falls into two main categories:

- Watershed runoff
- Carryover storage in surface reservoirs

### 6.1.2.1 Watershed Runoff

Watershed runoff is the District's primary water supply. This category of supply includes water rights to runoff produced by the District's watersheds during the water year. District water rights include 25 pre-1914 rights acquired from mining interests, along with 28 post-1914 rights filed with the State of California to provide for domestic, municipal, industrial, recreational, power, and irrigation uses, and three riparian rights. These include rights for both consumptive and power purposes. The total water right volumes consist of storage rights, direct diversion rights, and some are a combination of both. The total quantity estimated for diversion and/or storage under current consumptive water rights is approximately 450,000 ac-ft on an annual basis.

The amount of runoff and the way it is used depends upon the amount of water contained in the snowpack and the rate at which the snowpack melts. The most prominent and obvious cause for the fluctuation in natural runoff is the variability in hydrologic conditions, as seen in the wide variations in annual rainfall/snowpack accumulations. Over the last 30 years runoff has fluctuated from less than 77,378 ac-ft in dry years (2015) to over 467,000 ac-ft in wet years (1995). Average runoff from the Upper Division watershed, including the watershed area feeding Scotts Flat Reservoir, is approximately 221,500 ac-ft. Due to provisions in the PG&E Coordinated Operations Agreement, hydrologic variability, and the fact that the District is not the senior water right holder, no supplies are assumed to be available from the Bear River and South Yuba River. The historical runoff data evaluated to estimate the District's average runoff supply, therefore do not include supplies from the Bear River and the South Yuba River, and are based on runoff data from the water supply in the District watershed including Middle Yuba River, Canyon Creek, Texas Creek, Fall Creek and Deer Creek. The District is likely to receive some water from the Bear River and South Yuba River sources in dry years. Due to the uncertainty of the amount of supply available from these two sources and because the District is not the senior water rights holder, it has not been quantified.

The District's Yuba-Bear Project's Federal Energy Regulatory Commission license (No. 2266) expired in July 2013. The Project is presently undergoing relicensing. There is the potential for increased environmental flow requirements, which will impact water supply. The District is working to minimize these impacts especially in dry years however it could be until issuance of the new license before the actual impacts are known.

### 6.1.2.2 Carryover Storage

The second largest component of the District’s supply is carryover storage, which is the volume of water left in storage reservoirs at the end of the irrigation season, usually at the end of September. The District’s main storage reservoirs can contain a maximum of 279,985 ac-ft of water. The two major distribution and storage systems within the District are the Deer Creek System and the Bear River System. These systems are a mixture of canals, siphons, pipelines, and other water conveyance structures.

### 6.1.3 Recycled Water

Recycled wastewater discharge is mixed with District irrigation water being transported in natural watercourses. The combined waters are then diverted from the creeks into canals. This supply of water augments the District’s overall water supply. The District uses recycled water exclusively for irrigation uses. Below is a description of the use of recycled water from each of the four wastewater treatment municipalities within the District service area:

- **Nevada City:** The District utilized recycled wastewater effluent from the Nevada City sewage treatment plant for irrigation uses. The sewage effluent is diverted from Deer Creek and gets re-used as irrigation water.
- **Grass Valley:** The District utilized recycled sewage effluent from the Grass Valley sewage treatment plant for irrigation uses. The sewage effluent is diverted from Wolf Creek and gets re-used as irrigation water.
- **City of Auburn:** The District utilized recycled sewage effluent from the Auburn sewage treatment plant for irrigation uses. The sewage effluent is diverted from Auburn Ravine and gets re-used as irrigation water.
- **Placer County:** The District utilized recycled sewage effluent from the Placer County Sewer Maintenance District 1 (SMD1) that discharges into Rock Creek, just above its confluence with Dry Creek for agricultural uses. This sewage treatment plant was taken offline in 2016, resulting in a reduction of supply to the District.

Table 6-2 presents the projected future reuse water demands in the District’s service area. The extent to which recycled water is available in the future is dependent upon the capacity of the four wastewater treatment plants. Recycled water supplies could potentially be reduced based on the assumption that discharges from natural waterway from the wastewater treatment facilities would be reduced as well as from the loss of recycled water from the SMD1 that consolidated with the City of Lincoln.

Water Supply	Additional Detail on Water Supply	2025	2030	2035	2040
Recycled Water	Tertiary treated	1,408	1,408	1,408	1,408
<b>Total</b>		<b>1,408</b>	<b>1,408</b>	<b>1,408</b>	<b>1,408</b>

*Source: Nevada Irrigation District 2020 Urban Water Management Plan, July 2021, Table 4-7.*

## 6.1.4 Groundwater

*10910(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment.*

*10910(f)(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.*

*10910(f)(2) A description of any groundwater basin or basins from which the proposed project will be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.*

*10910(f)(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historical use records.*

*A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historical use records.*

*10910(f)(4) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project.*

*A water assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.*

The District does not utilize groundwater as an existing or planned source of water due to limited groundwater availability. The Proposed Project will use non-potable mine dewatering groundwater for some of its proposed activities.

## 6.2 Additional Planned Future Potable Water Supplies

In addition to the District's existing potable water supplies described above, the District has several additional planned future potable water supplies to meet the District's existing and projected future water demands, including those associated with the Proposed Project. For example, the District intends to increase the capacity of the Elizabeth George and Loma Rica water treatment plants by 6 mgd and 4 mgd respectively. These upgrades are anticipated to increase the annual water supply by 2,688 ac-ft and 1,792 ac-ft, respectively (see Table 6-3). The inclusion of planned future water supplies in this WSA is specifically allowed by the Water Code:

*Water Code section 10631(b): Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).*

The District is in the early stages of a long-term visioning and planning effort to better understand potential future conditions and needs and identify management and operational practices to meet those needs. The process, Plan for Water, will identify optional water management practices as triggering points in supply, demand, regulatory, legal, and other events are reached. These practices may include supply projects, demand management efforts, policy changes, and others.

The District does anticipate studying the expansion of reservoir capacity as one of the supply options available during the Plan for Water process. Reservoir capacity would offer the District greater reliability with respect to dry-year supplies. In addition, recent climate modeling indicates a temporal shift in expected watershed runoff. The expanded reservoir capacity could be used to capture more runoff for subsequent use by the District. Other water supply augmenting options will be explored in the Plan for Water process.

Depending on growth, some of the District’s water treatment plants are expected to be expanded. Once capacity triggering points are neared, the District will begin the planning process for capacity expansion. This table also provides an estimated quantification of each project’s normal-year yield, single dry-year yield, and multiple dry-year yields. The WTP expansion projects do not increase the District’s raw water supply; however, they do increase the amount of treated water available for the District’s treated water customers.

Summary tables listing the District’s existing and additional planned future water supplies, and historical and anticipated future quantities are provided in Section 6.3.

Project Name	Expected Increase in Treated Water Supply
Loma Rica WTP - 4 mgd expansion	1,792
E. George WTP - 6 mgd expansion	2,688
Lake Wildwood WTP - 4 mgd expansion	1,792
North Auburn WT - 4 mgd expansion	1,792

*Source: Nevada Irrigation District 2020 Urban Water Management Plan, July 2021, Table 4-5.*

### **6.3 Summary of Existing and Additional Planned Future Water Supplies**

Table 6-4 provides a summary of the District’s projected water supply entitlements. A discussion of the future anticipated availability of these existing and additional planned future water supplies during dry years is provided in the next section.

### **6.4 Water Supply Availability and Reliability**

Water Code section 10910 (c)(4) requires that a WSA include a discussion with regard to “whether total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.” Accordingly, this WSA addresses these three hydrologic conditions through the year 2040.

Also, in response to drought conditions and the State of Emergency proclaimed by Governor Brown, first in January 2014 and again in April 2015, this WSA provides a discussion of the availability and reliability of the District's available water supplies to meet the District's water demands in the event that the District's surface water supplies are limited under emergency water supply conditions.

Factors contributing to inconsistency in the District's water supplies include legal limitations due to water rights and contracts limiting the quantity of water available to the District, environmental constraints, and reductions in availability due to climatic factors. The surface water supply to the District is subject to reductions during single and multiple dry years (seasonal and climatic shortages). The District holds senior water rights to the majority of its supply, excluding the watershed runoff supply, and has the ability to manage carry over storage quantities based on domestic, municipal and irrigation needs.

**Table 6-4. Projected Water Supplies, ac-ft/year**

Water Supply	Additional Detail on Water Supply	2020 (Actual)		2025	2030	2035	2040
		Reasonably Available Volume	Total Right or Safe Yield	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume
Purchased water	PG&E	-	54,361	7,500	7,500	7,500	7,500
Surface Water	Watershed Runoff	119,500	450,000	233,066	233,066	233,066	233,066
Surface Water	Carryover storage	169,100		143,968	143,968	143,968	143,968
Recycled Water	Tertiary treated	1,408	as available	1,408	1,408	1,408	1,408
<b>Total</b>		<b>290,008</b>	<b>-</b>	<b>385,942</b>	<b>385,942</b>	<b>385,942</b>	<b>385,942</b>

*Source: Nevada Irrigation District 2020 Urban Water Management Plan, July 2021, Table 4-6 and Table 4-7.*

Note: A normal year is assumed

The District’s contracted water supply from PG&E will be reduced in dry, critically dry, or extreme critically dry water year types. The July-December quantities are reduced by the ratio of the May 1 value of the SVI 50 percent probability of exceeding the then-current 50-year SVI average. Beyond runoff and PG&E supplies, the only other source of water for the District is recycled water, which will be reduced with the elimination of the SMD1 wastewater treatment plant, but otherwise is assumed to remain constant in all year types. Recycled water supplies could potentially be reduced based on the assumption that river discharges from the wastewater treatment facilities would be reduced.

Regulations governing drinking water quality with which the District must comply for its treated water supply are established at the Federal and State levels. One of those requirements is to prepare a Watershed Sanitary Survey every five years. As summarized in the District’s 2011 Watershed Sanitary Survey Update (Starr, 2011) the District expects no loss of water used for urban purposes due to water quality impacts. The PG&E purchased water is similar in quality as the District’s supply since it originates from the same sources and is co-mingled with the District supply.

The District’s watershed runoff water supply sources are covered by a combination of pre-1914 water rights, post 1914- water rights, and riparian water rights. In some California watersheds including the Sacramento River watershed, the recent drought has resulted in diversion curtailment orders being issued in 2014 and 2015 on water rights going back to a 1903 priority date. These restrictions may continue to be placed on the District regardless of the priority of the water rights if the drought continues to be an even longer multi-year drought.

The reliability of each of the District’s existing and additional planned water supplies and their projected availability during normal, single dry, and multiple dry years as described in Section 6 of the District’s 2020 UWMP, is described below.

**6.4.1 Normal, Single Dry, and Multiple Dry Years**

The reliability of each of the District’s additional planned water supplies and their projected availability during normal, single dry, and multiple dry years, as described in Section 6 of the District’s 2020 UWMP, is described below and summarized in Table 6-5, Table 6-6 and Table 6-7.

<b>Table 6-5. Normal Year Water Supply, ac-ft/yr</b>				
Supply	2025	2030	2035	2040
Supply Total	385,942	385,942	385,942	385,942

*Source: Nevada Irrigation District 2020 Urban Water Management Plan, July 2021, Table 5-4.*

The reliability of each of the District’s additional planned future water supplies and their projected availability during single dry years is shown in Table 6-6.

<b>Table 6-6. Single Dry Year Water Supply, af-ft/yr</b>				
Supply	2025	2030	2035	2040
Supply Total	91,807	91,807	91,807	91,807

*Source: Nevada Irrigation District 2020 Urban Water Management Plan, July 2021, Table 5-5.*

The projected water supplies for multiple dry years for the District are shown in Table 6-7.

<b>Table 6-7. Multiple Dry Year Water Supply, af-ft/yr</b>				
	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>
<b>First Year</b>				
<b>Supply Total</b>	179,143	179,143	179,143	179,143
<b>Second Year</b>				
<b>Supply Total</b>	176,630	176,630	176,630	176,630
<b>Third Year</b>				
<b>Supply Total</b>	381,346	381,346	381,346	381,346
<b>Fourth Year</b>				
<b>Supply Total</b>	254,196	254,196	254,196	254,196
<b>Fifth Year</b>				
<b>Supply Total</b>	282,920	282,920	282,920	282,920
<i>Source: Nevada Irrigation District 2020 Urban Water Management Plan, July 2021, Table 5-6.</i>				

### **6.4.2 Emergency Water Supply Conditions**

The District adopted an updated Drought Plan (Water Shortage Contingency Plan) on November 18, 2015 to guide staff and customers to help minimize drought or water supply storage impacts. The Drought Plan identifies drought action levels, appropriate agency response, water demand reduction goals, and provides recommended demand management measures to assist customers in water conservation. The Drought Plan is reviewed every five years and updated, if necessary, with Board approval. The Drought Plan was updated and adopted along with the 2020 UWMP in July 2021.

The District maintains an Emergency Response Plan to address responding to catastrophic supply interruptions as well as other emergencies. The system is predominantly gravity fed but in situations where on-site generations are unavailable; the District currently has three portable generators that can be moved between different locations as needed. Nearly all drinking water facilities and critical raw water facilities are equipped with permanently installed backup generators. These backup generators increase the reliability of the District’s supply.

## **7.0 DETERMINATION OF WATER SUPPLY SUFFICIENCY BASED ON REQUIREMENTS OF SB 610**

Water Code section 10910 states:

*10910(c)(4) If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.*

Pursuant to Water Code section 10910(c)(4), and based on the technical analyses described in this WSA, the District finds that the total projected water supplies determined to be available for the Proposed Project during Normal water years during a 15-year projection will meet the projected water demand associated with the Proposed Project. The potable water demands for buildout of the Proposed Project are included in the District's projected 2040 water demands. Also, the potable water demand of the Proposed Project (26.4 ac ft/yr) represents less than 0.27 percent of the District's 2020 potable water production (9,858 ac ft/yr). Therefore, the District will be able to serve the Proposed Project in addition to existing and planned developments with some reliance on demand reductions in dry years by 2025.

Water demand within the District's service area is expected to exceed the District's supplies by more than 45 percent from 2025 to 2040 in Single Dry Years and by less than 10 percent from 2025 to 2040 during the first and second years of a Multiple Dry Year period. This Project is not expected to exacerbate NID's water supply shortages during dry years. This Project would, however, be subject to the same water demand cutbacks as other NID water customers who are served by NID.

Table 7-1 summarizes the projected availability of the District's existing and planned future water supplies and the District's projected water demands in normal, single dry and multiple dry years through buildout. As shown in Table 7-1, demand within the District's service area is expected to exceed the District's supplies from 2025 to 2040 during Single Dry Years and in the first and second years of a Multiple Dry Year period from 2025 to 2040.

Demand exceeds supplies during single dry year and multiple dry year scenarios. This illustrates the highly variable reliability of a snowpack-based supply system during drought periods. There are numerous management and operational efforts available to NID to address supply shortfall during drought periods. Demand reductions, carryover storage strategies, system operational strategies, supplemental supplies, increased storage, and others are all options to evaluate in creating the District's future water resources management supply strategy in the Plan for Water process. In its 2020 UWMP, NID assumed carryover water would be reduced by the same quantity as the watershed runoff (approximately 81 percent). This is likely a conservative assumption as carryover storage is water from the previous year that is stored in reservoirs. NID documents carryover storage in Normal years is expected to be over 140,000 acre-feet (see Section 6.2 and Table 6-4). It is possible that the year prior to a Single Dry Year would not be as dry as the Single Dry Year and therefore carryover storage would be closer to the value for a Normal Year. A larger value of carryover storage would translate to less severe water supply deficits. As indicated above, NID will be reviewing the assumptions in the 2020 UWMP as part of the Plan for Water.

During multiple dry years, the District’s Water Shortage Contingency Plan will take effect and mandatory conservation will help decrease the shortfall. According to NID staff, if supplies become extremely critical, drinking water supplies may be reduced but would not be cut off to protect public health and safety.

<b>Table 7-1. Summary of Water Demand Versus Water Supply During Various Hydrologic Conditions</b>					
	<b>Normal, Single Dry, and Multiple Dry Years, ac-ft/yr</b>				
<b>Hydrologic Condition</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	
<b>Normal Year<sup>(a)</sup></b>					
Available Water Supply	385,942	385,942	385,942	385,942	
Total Water Demand	188,336 - 205,963	192,234 - 209,861	196,279 - 213,906	200,324 - 217,951	
Potential Surplus (Deficit)	197,606 - 179,979	193,708 - 176,081	189,663 - 172,036	185,618 - 167,991	
Percent Shortfall of Demand	-	-	-	-	
<b>Single Dry Year<sup>(b)</sup></b>					
Available Water Supply	91,807	91,807	91,807	91,807	
Total Water Demand	177,436	181,723	186,173	190,621	
Potential Surplus (Deficit)	-85,629	-89,916	-94,366	-98,814	
Percent Shortfall of Demand	48%	49%	51%	52%	
<b>Multiple Dry Years<sup>(c)</sup></b>					
Year 1	Available Water Supply	179,143	179,143	179,143	179,143
	Total Water Demand	183,751	188,038	192,488	196,936
	Potential Surplus (Deficit)	-4,608	-8,895	-13,345	-17,793
	Percent Shortfall of Demand	3%	5%	7%	9%
Year 2	Available Water Supply	176,630	176,630	176,630	176,630
	Total Water Demand	183,751	188,038	192,488	196,936
	Potential Surplus (Deficit)	-7,121	-11,408	-15,858	-20,306
	Percent Shortfall of Demand	4%	6%	8%	10%

**Table 7-1. Summary of Water Demand Versus Water Supply During Various Hydrologic Conditions**

Hydrologic Condition		Normal, Single Dry, and Multiple Dry Years, ac-ft/yr			
		2025	2030	2035	2040
Year 3	Available Water Supply	381,346	381,346	381,346	381,346
	Total Water Demand	212,714	217,001	221,451	225,899
	Potential Surplus (Deficit)	168,632	164,345	159,895	155,447
	Percent Shortfall of Demand	-	-	-	-
Year 4	Available Water Supply	254,196	254,196	254,196	254,196
	Total Water Demand	188,900	193,187	197,637	202,085
	Potential Surplus (Deficit)	65,296	61,009	56,559	52,111
	Percent Shortfall of Demand	-	-	-	-
Year 5	Available Water Supply	282,920	282,920	282,920	282,920
	Total Water Demand	188,900	193,187	197,637	202,085
	Potential Surplus (Deficit)	94,020	89,733	85,283	80,835
	Percent Shortfall of Demand	-	-	-	-
(a) Nevada Irrigation District 2020 Urban Water Management Plan, July 2021, Table 5-4. (b) Nevada Irrigation District 2020 Urban Water Management Plan, July 2021, Table 5-5 (c) Nevada Irrigation District 2020 Urban Water Management Plan, July 2021, Table 5-6.					

## **8.0 WATER SUPPLY ASSESSMENT APPROVAL PROCESS**

*10910 (g)(1) Subject to paragraph (2), the governing body of each public water system shall submit the assessment to the city or county not later than 90 days from the date on which the request was received. The governing body of each public water system, or the city or county if either is required to comply with this act pursuant to subdivision (b), shall approve the assessment prepared pursuant to this section at a regular or special meeting.*

*10911 (b) The city or county shall include the water supply assessment provided pursuant to Section 10910, and any information provided pursuant to subdivision (a), in any environmental document prepared for the project pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.*

The District's Board of Directors must approve this WSA at a regular or special meeting. Furthermore, the County must include this WSA in the Draft EIR that is being prepared for the Proposed Project.

## **9.0 REFERENCES**

Raney Planning and Management, *Draft Project Description*, July 2020.

Brown and Caldwell, *Nevada Irrigation District 2015 Urban Water Management Plan*, June 2016.

Benchmark Resources, *Idaho-Maryland Mine Project Description*, November 2019.

Zanjero Water, *Nevada Irrigation District 2020 Urban Water Management Plan*, July 2021.