

# The Campus Water Supply Assessment

PREPARED FOR

City of Dixon



PREPARED BY



# The Campus Water Supply Assessment

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Prepared for

**City of Dixon**

Project No. 487-60-23-31

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Date

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## LIST OF ACRONYMS AND ABBREVIATIONS

Cal Water	California Water Service
CEQA	California Environmental Quality Act
City	City of Dixon
EIR	Environmental Impact Report
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
MG	Million Gallons
NEQSP	Northeast Quadrant Specific Plan
RCD	Resource Conservation District
SB	Senate Bill
SGMA	Sustainable Groundwater Management Act
UWMP	Urban Water Management Plan
Water Code	California Water Code
WSA	Water Supply Assessment
WSCP	Water Shortage Contingency Plan
WSMP	Water System Master Plan

# The Campus 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 proposed The Campus Project (Proposed Project). The Project site is located within the City of Dixon (City), on the eastern edge adjacent to Pedrick Road. While both the City and California Water Service (Cal Water) provide water service within the City limits, the Proposed Project lies solely within the City's water service area.

This WSA evaluates the projected water demands associated with the Proposed Project and the availability of water supplies to meet those projected water demands under various hydrologic conditions (i.e., normal, single dry, and multiple dry years). This WSA is not intended 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 City policies and procedures, consistent with existing law.

### Proposed Project Overview

The Proposed Project site consists of five separate parcels bounded by Pedrick Road to the east, by industrial lands to the south, and by agricultural lands to the north and west. The site is located within the City's Northeast Quadrant, subject to the requirements of the Northeast Quadrant Specific Plan (NEQSP).

The Proposed Project site contains approximately 255 gross acres of land, comprising nearly 40 percent of the approximately 643 acres covered by the NEQSP. The Proposed Project would include:

- A new Dixon Opportunity Center covering approximately 48 acres
- Approximately 1,041 new residential dwelling units ranging from low- to high-density use
- Approximately 2.5 acres of commercial use
- Approximately 8.42 acres of parks and open space
- A new 1.58-acre potable water well site

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.

### Projected Water Demands

The projected water demands for buildout of the Proposed Project are 191 million gallons (MG) per year. Water demands for the Proposed Project were estimated based on unit water use factors from the City's 2016 Water System Master Plan (WSMP). Consistent with the 2016 WSMP, demands for the Proposed Project include 14 percent of unaccounted-for water.

This WSA uses water demand projections for the City as presented in the City's 2020 Urban Water Management Plan (UWMP). Because the City's 2020 UWMP did not fully include demands for the Proposed Project, the incremental increase has been added to the UWMP projections for use in this WSA.



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### Water Supply Availability

If approved by the City, the Proposed Project would be served from the City's existing and future portfolio of water supplies. The City's existing and future supplies consist solely of groundwater pumped from City-owned and operated wells from the underlying Solano Groundwater Subbasin. The availability and reliability of the City's water supplies as described in this WSA are based primarily on information contained in the City's 2020 UWMP. The City's 2020 UWMP is incorporated by reference into this WSA. Proponents of the Proposed Project will be responsible for funding and constructing the infrastructure required to deliver water supplies to the Proposed Project area.

### Determination of Water Supply Sufficiency

This WSA concludes that the City's projected water supplies are sufficient to meet existing and projected future water demands, including future water demands associated with the Proposed Project, over a 20-year period and under normal, single dry, and multiple dry years. To remain conservative in planning, the City's 2020 UWMP assumes no reduction in water demand during dry years. However, water conservation and demand reduction methods detailed in the City's adopted Water Shortage Contingency Plan, included in Appendix F of the City's 2020 UWMP, are able to reduce demands by up to and greater than 50 percent under water supply shortage conditions and other emergencies.



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## 1.0 INTRODUCTION

The purpose of this Water Supply Assessment (WSA) is to perform the evaluation required by California Water Code (Water Code) Sections 10910 through 10915 in connection with a proposed project. Key topics covered in this introduction include:

- Legal Requirements for the WSA
- Need for and Purpose of WSA
- Water Supply Assessment Preparation, Format, and Organization

## 1.1 Legal Requirement for a Water Supply Assessment

California Senate Bill 610 (SB 610) and Senate Bill 221 (SB 221) 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 and SB 221 were companion measures which sought to promote more collaborative planning between local water suppliers and cities and counties. Both statutes require 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 Water Code Sections 10910 through 10915 (inclusive) to require lead agencies conducting environmental review under the California Environmental Quality Act (CEQA) for a proposed development project<sup>1</sup> that meets specified criteria to:

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

The purpose of a 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 set forth the specific information that must be included in a WSA.

SB 221 amended State law (California Government Code Section 66473.7) to require that approval by a city or county of certain residential subdivisions<sup>2</sup> requires an affirmative written verification of sufficient water supply. SB 221 was intended as a failsafe mechanism to ensure that collaboration on finding the needed water supplies to serve a new large residential subdivision occurs before construction begins.

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<sup>1</sup> The definition of a "project" subject to the requirement to prepare a WSA is provided in Water Code Section 10912(a) and is discussed further in Section 3.1 of this WSA.

<sup>2</sup> Per Government Code Section 66473.7(a)(1), subdivision means a proposed residential development of more than 500 dwelling units.





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

The purpose of this WSA is to perform the evaluation required by SB 610 (Water Code Sections 10910 through 10915) in connection with The Campus project (Proposed Project). This WSA does not reserve water, or 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 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. This WSA includes the following sections:

- Section 1: Introduction
- Section 2: Description of the Proposed Project
- Section 3: Required Determinations
- Section 4: City of Dixon Water System
- Section 5: City of Dixon Water Demands
- Section 6: City of Dixon Water Supplies
- Section 7: Determination of Water Supply Sufficiency Based on the Requirements of SB 610
- Section 8: Water Supply Assessment Approval Process
- Section 9: 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.



## The Campus Water Supply Assessment

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### 2.0 DESCRIPTION OF THE PROPOSED PROJECT

The following sections describe the Proposed Project, including its location, proposed land uses, and projected water demand.

#### 2.1 Proposed Project Location

The Proposed Project is located in the northeast area of the City of Dixon (City), within existing City limits as shown on Figure 2-1. The Proposed Project site consists of five separate parcels bounded by Pedrick Road to the east, by industrial lands to the south, and by agricultural lands to the north and west. The site is located with the City's Northeast Quadrant, subject to the requirements of the Northeast Quadrant Specific Plan (NEQSP).

#### 2.2 Proposed Land Uses and Projected Water Demand

The Proposed Project site contains approximately 255 gross acres of land, comprising nearly 40 percent of the approximately 643 acres covered by the NEQSP.<sup>3</sup> The Proposed Project would include:

- A new Dixon Opportunity Center covering approximately 48 acres
- Approximately 1,041 new residential dwelling units ranging from low- to high-density use
- Approximately 2.5 acres of commercial use
- Approximately 8.4 acres of parks and open space
- A new 1.58-acre potable water well site

Water use factors as presented in the City's 2016 Water System Master Plan (WSMP)<sup>4</sup> were used to estimate the projected water demand for the Proposed Project. Table 2-1 summarizes the land uses and projected water demands for the Proposed Project. Consistent with the 2016 WSMP, demands for the Proposed Project include 14 percent of unaccounted-for water. The total projected water demand for the Proposed Project is approximately 191 million gallons (MG) per year.

#### 2.3 Projected Water Supply for the Proposed Project

The City's existing and future portfolio of water supplies discussed in Section 6 will be used to serve the Proposed Project, as 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).*

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<sup>3</sup> City of Dixon, August 2023. *Notice of Preparation and Scoping Meeting for the Draft Environmental Impact Report for The Campus.*

<sup>4</sup> West Yost, March 2018. *City of Dixon 2016 Water System Master Plan and Strategic Asset Management Plan.*

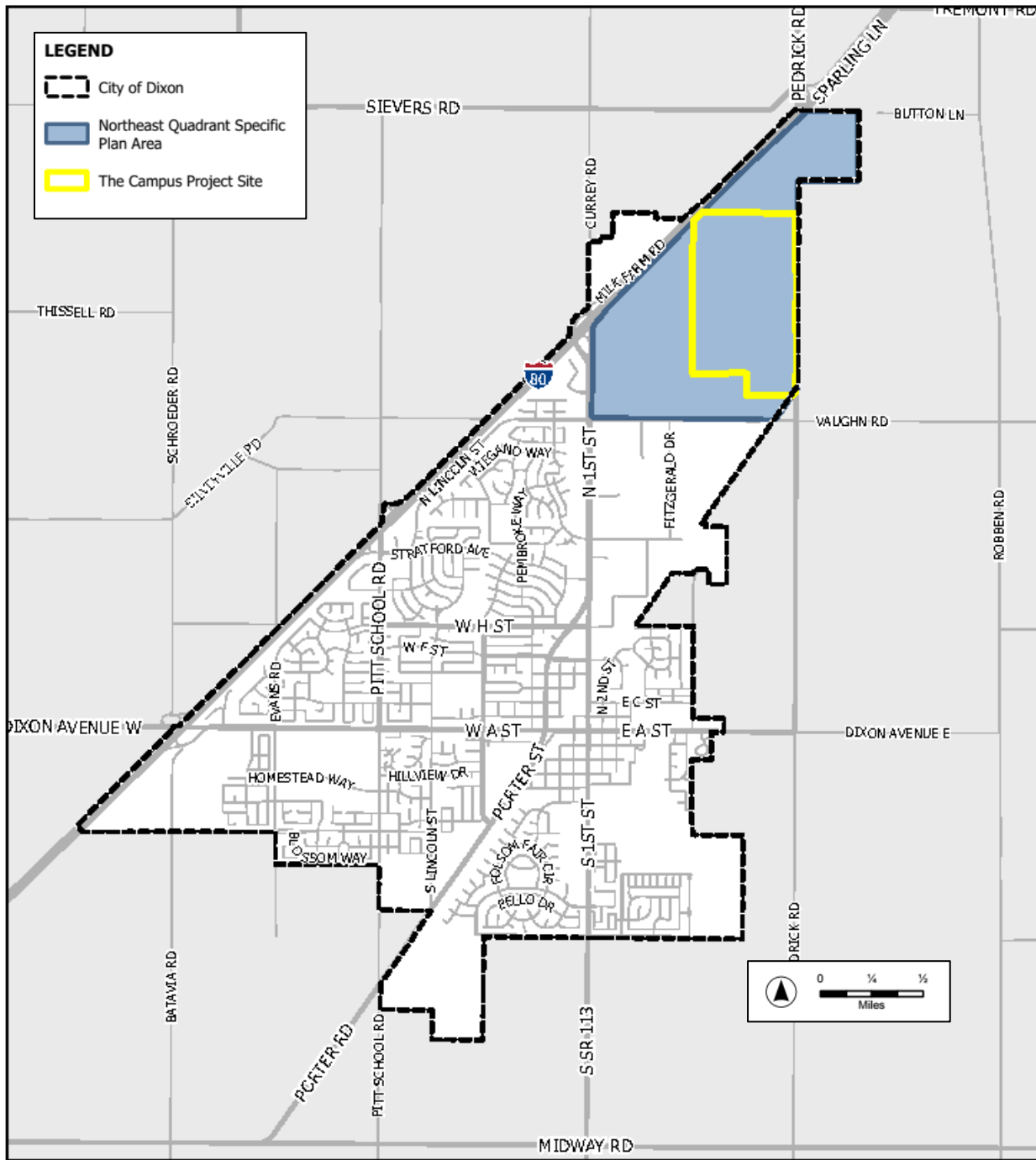


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**Table 2-1. Projected Water Demand for the Proposed Project**

Description	Use Area, acres <sup>(a)</sup>	Water Use Type	Water Use Factor, AFY <sup>(b)</sup>	Projected Water Demand, MG/year
Single Family Residential	132.73	Single Family Residential	2.7	117
Multi-Family Residential	11.54	Multi-Family Residential	3.9	15
Industrial	47.87	Industrial	1.5	23
Neighborhood Commercial	2.49	Commercial	1.3	1
Well Site	1.58	Government	0.3	0
Roads, Open Space, and Basin	49.98	Other	0.0	0
Park and Landscaping	8.42	Landscape	3.0	8
<b>Subtotal</b>	<b>254.61</b>	<b>–</b>	<b>–</b>	<b>164</b>
Unaccounted For Water <sup>(c)</sup>				27
<b>Total Water Demand</b>				<b>191</b>
<p>(a) From <i>Notice of Preparation for The Campus Draft Environmental Impact Report</i>, August 30, 2023, City of Dixon.</p> <p>(b) From the 2016 WSMP.</p> <p>(c) Per the 2016 WSMP, unaccounted-for water is assumed to be 14 percent of the total water demand for the Proposed Project.</p> <p>AFY = acre-feet per year, MG = million gallons</p>				

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Source: City of Dixon, August 2023. Notice of Preparation and Scoping Meeting for the Draft EIR for the Campus, Figure 2.

**Figure 2-1. Project Location**

## The Campus Water Supply Assessment

### 3.0 REQUIRED DETERMINATIONS

The following sections describe the required determinations for a WSA.

#### 3.1 Does SB 610 Apply to the Proposed Project?

*Water Code Section 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 assumptions, SB 610 does apply to the Proposed Project.

- The City has determined that the Proposed Project is subject to CEQA and that an Environmental Impact Report (EIR) is required.
- In developing approximately 1,041 dwelling units and an industrial park covering nearly 48 acres, the Proposed Project meets the definition of a "Project" per Water Code Section 10912(a) paragraph (6).

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. The Proposed Project has over 1,000 new residential dwelling units within the City's water service area; however, the Proposed Project will be developed in individual phases. The individual phases within the Proposed Project may be subject to the requirements of SB 221. Applicability of SB 221 for each individual project phase may not be determined until further along in the planning process, typically during the preparation of the tentative site map. If required, a verification of sufficient water supply (SB 221) report would be required prior to final approvals for individual projects.



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

*Water Code Section 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...*

*Water Code Section 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 area is within City Limits and within the City's water service area. Therefore, the City is the identified public water system for the Proposed Project.

### 3.4 Does the Identified Public Water Supplier have an adopted UWMP and does the UWMP include the projected water demand for the Proposed Project?

*Water Code Section 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).*

According to Water Code Section 10617, an urban water supplier is defined as a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water per year. The City meets the definition of an urban water supplier and is therefore required to prepare an Urban Water Management Plan (UWMP). The City's most recently adopted UWMP is the 2020 UWMP, which was adopted in April 2022.<sup>5</sup> The City's 2020 UWMP is incorporated by reference into this WSA.

The City's 2020 UWMP incorporated the water demand projections for buildout of the City's 2040 General Plan, adopted in May 2021,<sup>6</sup> as subsequently evaluated in a 2021 addendum to the City's 2016 WSMP (2021 WSMP Addendum).<sup>7</sup> Demands for the Proposed Project site were included in the 2020 UWMP; however, demands for the Proposed Project are slightly higher than the projected demands included in the 2020 UWMP. Per Water Code Section 10910(c)(3), if the projected water demand associated with a proposed project is not accounted for in the most recently adopted UWMP, the WSA shall discuss whether water supplies are available to meet the projected water demand for that proposed project during normal, single dry, and multiple dry years. Section 7 of this WSA describes the City's ability to meet the projected water demands for the Proposed Project.

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<sup>5</sup> City of Dixon and West Yost, April 2022. *2020 Urban Water Management Plan*.

<sup>6</sup> City of Dixon, May 2021. *General Plan 2040*.

<sup>7</sup> West Yost, December 2021. TM. *City of Dixon 2021 Water System Master Plan Update (Addendum to 2016 WSMP)*.



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## 4.0 CITY OF DIXON WATER SYSTEM

The following sections describe the City’s existing water service area, including existing and projected population.

### 4.1 Water Service Area

The City, incorporated in 1878, is located in the California Central Valley along Interstate Highway 80, and is surrounded by agricultural and open space lands. Located in the northeastern portion of Solano County, the City is approximately 20 miles west of the City of Sacramento and the Sacramento River and 65 miles northeast of the City of San Francisco. The City is relatively flat at an average elevation of 64 feet (ft) above mean sea level.

The City is one of two water purveyors within the City limits. The City provides water to the residences and businesses within its water service area, primarily in the north, west, and south portions of the City. The central portion of the City is served by California Water Service (Cal Water). Land uses throughout the City’s water service area include residential, commercial, industrial, institutional/governmental, and landscape uses.

### 4.2 Population

The existing (2020) population for the City’s water service area was estimated in the 2020 UWMP to be 9,037 people. The 2040 population projection as presented in the 2020 UWMP was obtained by subtracting Cal Water’s 2040 projected population from the City’s 2040 General Plan buildout projection. The 2025 population was projected based on approved developments that are under construction. The interim years between 2025 and 2040 were linearly interpolated. In anticipation of growth in the City’s sphere of influence, the 2045 projected population was extrapolated based on the projected growth between 2025 and 2040. The City’s current and projected populations for its water service area are shown in Table 4-1.

Year	2020	2025	2030	2035	2040	2045
Population Served	9,037	15,949	16,396	16,843	17,290	17,737

*Source: 2020 UWMP, Table 3-3.*



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## 5.0 CITY OF DIXON WATER DEMANDS

*Water Code Section 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).*

*Water Code Section 10910(c)(3) If the projected water demand associated with the proposed project was not accounted for in the most recently adopted urban water management plan, or the public water system has no urban water management plan, the water supply assessment for the project shall include a discussion with regard to whether the public water system's total projected water supplies available 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 the public water system's existing and planned future uses, including agricultural and manufacturing uses.*

The descriptions provided below for the City’s water demands are based on the City’s 2020 UWMP and incorporate the incremental demands associated with the Proposed Project.

### 5.1 Historical and Existing Water Demand

The City’s historical water demand for 2015 through 2020 is summarized in Table 5-1.

Demand Source	2015	2016	2017	2018	2019	2020
2020 UWMP	519	564	601	640	642	702

*Source: 2020 UWMP, Tables 4-1 and 4-2.*

### 5.2 Future Water Demand

Projected future water demands presented in the City’s 2020 UWMP used land-use based water demand projections. Water demand projections were based on the anticipated growth within the City’s water service area as defined by City’s 2040 General Plan and subsequently evaluated in the 2021 WSMP Addendum. The City’s 2021 WSMP Addendum incorporates the most recent and accurate future development estimates and unit water use factors available to develop water demand projections. The water demand projections in the 2020 UWMP were estimated through linear interpolation using the 2021 actual water use and the 2021 WSMP Addendum water demand projections for 2040 and 2050.

Table 5-2 presents the projected normal year water demands for the City from 2025 through 2045.

Demand Projection Source	2025	2030	2035	2040	2045
2020 UWMP	1,458	1,620	1,782	1,945	2,307

*Source: 2020 UWMP, Table 4-3.*



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Because projected demands for the Proposed Project site in the City’s 2020 UWMP are lower than the projected demands for the Proposed Project as evaluated in this WSA, this WSA recalculates the City’s total projected water demands by adding the incremental demand for the Proposed Project to the demand projections from the City’s 2020 UWMP. The Proposed Project is part of the City’s Northeast Quadrant, which was projected to have a water demand of 322 MG/year. Projected demands from the Proposed Project location within the Northeast Quadrant were 183 MG/year. As shown in Table 2-1, the updated projected demand for the Proposed Project is 191 MG/year, which is an increase of 8 MG/year compared to the projected demand included in the 2020 UWMP. Table 5-3 presents the new total demand projections used for this WSA.

Source	2025	2030	2035	2040	2045
2020 UWMP <sup>(a)</sup>	1,458	1,620	1,782	1,945	2,307
Incremental Increase in Project <sup>(b)</sup>	8	8	8	8	8
<b>Total</b>	<b>1,466</b>	<b>1,628</b>	<b>1,790</b>	<b>1,953</b>	<b>2,315</b>

(a) Refer to Table 5-2.  
 (b) The 2020 UWMP includes 183 MG/year for the Proposed Project site. The projected demands for the Proposed Project are 191 MG/year (refer to Table 2-1), an incremental increase of 8 MG/year.

### 5.3 Dry Year Water Demand

For planning purposes and to be conservative, the City assumes no reduction in water demand during dry years in its 2020 UWMP. The City’s Water Shortage Contingency Plan (WSCP), outlined in Appendix F of the 2020 UWMP, defines six water shortage stages with associated actions to reduce water demand by up to and greater than 50 percent in the event of a water supply shortage or other emergency.

However, when evaluating future water supplies, neither the City’s 2020 UWMP nor this WSA assume the City’s WSCP would be implemented (which would reduce demands) during dry years. This conservative assumption means that demands in single dry years and the first year of multiple dry year periods are equal to the normal year demands presented in Table 5-3. Consistent with Tables 7-4 and 7-5 of the City’s 2020 UWMP, demands in multiple dry years 2 through 5 are linearly interpolated. Table 5-4 summarizes the City’s projected future dry year water demands with the addition of the incremental demands for the Proposed Project.

Hydrologic Condition	2025	2030	2035	2040	2045
Single Dry Year	1,466	1,628	1,790	1,953	2,315
Multiple Dry Year 1	1,466	1,628	1,790	1,953	2,315
Multiple Dry Year 2	1,498	1,661	1,823	2,025	2,377
Multiple Dry Year 3	1,531	1,693	1,855	2,098	2,449
Multiple Dry Year 4	1,563	1,725	1,888	2,170	2,521
Multiple Dry Year 5	1,596	1,758	1,920	2,243	2,594

(a) Projected demands are from Tables 7-4 and 7-5 of the City’s 2020 UWMP, with the addition of the incremental increase of 8 MG/year from the Proposed Project identified in Table 5-3 of this WSA.

### 6.0 CITY OF DIXON WATER SUPPLIES

*Water Code Section 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...under the existing water supply entitlements, water rights, or water service contracts.*

*Water Code Section 10910(e) If no water has been received in prior years by the public water system...under the existing water supply entitlements, water rights, or water service contracts, the public water system...shall also include in its water supply assessment...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.*

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

- (1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.*
- (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 a basin that has 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.*
- (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.*
- (4) 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.*
- (5) 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 descriptions provided below for the City's water supply are based on the City's 2020 UWMP. As described in Section 3.4 of this WSA, implementation of the Proposed Project was partially accounted for in the growth forecasts when the City was preparing its 2020 UWMP. Therefore, consistent with Water Code 10910(c)(3), this WSA provides an assessment of supply for the City, which will build from the supply summary presented below. That supply assessment will be presented in Section 7.



## The Campus Water Supply Assessment

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The Proposed Project, if approved by the City, is anticipated to be served from the City'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 other City existing and future water customers. Proponents of the Proposed Project will be responsible for funding and constructing the infrastructure required to deliver water supplies to the Proposed Project area.

### 6.1 Water Supply Overview

The City's existing water supply comes solely from City-owned and operated groundwater wells throughout the City's water service area. The City has water storage tanks within its service area to provide for emergency supply.

#### 6.1.1 Groundwater Basin Description

The City's service area overlies the Solano Subbasin (Basin No. 5-21.66). The Solano Subbasin underlies the City and is a part of the Sacramento Valley Groundwater Basin. The Sacramento Valley Groundwater Basin is located in north central California and is bounded on the east by the Sierra Nevada and Cascade Mountain Ranges, and on the west by the North Coast Mountain Range. The Sacramento Valley Groundwater Basin also extends from about 5 miles north of Red Bluff southward for 150 miles to the Sacramento-San Joaquin Delta and covers an area of approximately 6,000 square miles.

The Solano Subbasin is bounded by Putah Creek on the north, the Sacramento River on the east, the North Mokelumne River on the southeast, the San Joaquin River on the south, the non-water bearing geologic units of the Great Valley Sequence on the northwest and the Suisun-Fairfield Valley Basin on the south side. The western hydrologic divide corresponds to the crest of the English Hills and Montezuma Hills and separates the Solano Subbasin from the Suisun-Fairfield Groundwater Basin.

#### 6.1.2 Groundwater Basin Management

In 2014, the California legislature enacted the Sustainable Groundwater Management Act (SGMA) in response to continued overdraft of California's groundwater resources. The Solano Subbasin has not been identified as in overdraft, nor is it expected to be in overdraft. The Solano Subbasin has also not been adjudicated. Adjudication is defined as an action filed in the superior or federal district court to determine the rights to extract groundwater from a basin or store water within a basin, including, but not limited to, actions to quiet title respecting rights to extract or store groundwater or an action brought to impose physical solution on a basin.<sup>8</sup>

Since the Solano Subbasin was designated as a medium priority subbasin under SGMA, a Groundwater Sustainability Plan (GSP) was required to be developed and submitted to DWR by January 31, 2022. The City is a part of the Solano Subbasin Groundwater Sustainability Agency (GSA). The Solano Subbasin GSA is a Joint Powers Agency representing the City of Dixon, City of Rio Vista, Solano County, Dixon Resource

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<sup>8</sup> Luhdorff & Scalmanini Consulting Engineers. 2021. *Solano Subbasin Groundwater Sustainability Plan*.



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Conservation District (RCD), Solano RCD, Maine Prairie Water District, Reclamation District 2068, and associated members from the Solano Farm Bureau, Solano County Agricultural Advisory Committee, and Cal Water Dixon.

The Solano Subbasin GSA is part of the Solano Collaborative which is made up of a total of five GSAs located in the Solano Subbasin. The five GSAs include the following:

- Solano Subbasin GSA
- City of Vacaville GSA
- Northern Delta GSA
- Sacramento County GSA
- Solano Irrigation District GSA

A Collaboration Agreement, which formalizes the coordination between the five GSAs to develop a single GSP, was executed on February 4, 2020. The Collaboration Agreement allows the various agencies to work collaboratively to meet the requirements of SGMA. The Solano Subbasin GSP was completed in November 2021 and serves as a guide for the sustainable groundwater management of the Solano Subbasin.

Existing groundwater and surface water monitoring programs have been implemented by a variety of local, state, and federal agencies and are often dictated by statutory and regulatory requirements. The Solano Collaborative plans to continue using these monitoring programs to manage the Solano Subbasin.

### 6.1.3 Groundwater Existing and Future Use

The City has historically relied solely on groundwater to meet its water demands, and plans to use groundwater in the future to meet its additional demands. The annual volume of groundwater pumped by the City is shown in Table 6-1.

2016	2017	2018	2019	2020
564	601	640	642	702

*Source: City of Dixon 2020 UWMP, Table 6-1.*

## 6.2 Additional Planned Future Water Supplies

The City has no additional planned future water supplies, including surface water, stormwater, or recycled water. Existing groundwater supplies are anticipated to meet existing and projected future water demands, including those associated with the Proposed Project.

# The Campus Water Supply Assessment

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

Table 6-2 summarizes the projected water supply through 2045. Because the Solano Subbasin is not adjudicated and is not in overdraft or expected to be in overdraft, and the City does not have a contract that limits its groundwater use, the City uses as much groundwater as is necessary to meet demands. The projected water supply is equal to the projected water demand summarized in Table 5-3. The volumes shown are equal to the projected demands and are not intended to represent the City's maximum pumping volume.

2025	2030	2035	2040	2045
1,466	1,628	1,790	1,953	2,315

(a) Projected water supply is equivalent to projected demand in Table 5-3.

## 6.4 Water Supply Reliability

*Water Code Section 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.*

*Water Code Section 10911(a) If, as a result of its assessment, the public water system concludes that its water supplies are, or will be, insufficient, the public water system shall provide to the city or county its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. If the city or county, if either is required to comply with this part pursuant to subdivision (b), concludes as a result of its assessment, that water supplies are, or will be, insufficient, the city or county shall include in its water supply assessment its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. Those plans may include, but are not limited to, information concerning all of the following:*

- (1) The estimated total costs, and the proposed method of financing the costs, associated with acquiring the additional water supplies.*
- (2) All federal, state, and local permits, approvals, or entitlements that are anticipated to be required in order to acquire and develop the additional water supplies.*
- (3) Based on the consideration set forth in paragraphs (1) and (2), the estimated timeframes within which the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), expects to be able to acquire additional water supplies.*

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 2045. The reliability discussion presented in this section reflects Chapter 7 of the City’s 2020 UWMP.



## The Campus Water Supply Assessment

### 6.4.1 Groundwater Supply Reliability

The City’s 2020 UWMP reviewed historical data for the groundwater supply under three hydrologic conditions: (1) normal water year, (2) single dry year, and (3) five-consecutive-year drought. Each condition is defined as follows:

- **Normal Water Year:** The condition represents the water supplies the City considers available during normal conditions. A year in the historical sequence was selected that most closely represents average allocation levels and patterns.
- **Single Dry Year:** The condition that represents the year in the historical sequence with the lowest water supply available to the City.
- **Five-Consecutive-Year Drought:** The condition which represents a five-consecutive-year drought period, such as the lowest average water supply available to the City for five years in a row since 2005.

Table 6-3 summarizes the years representing the normal, single dry, and five-consecutive-year drought hydrologic conditions. Since the City’s sole water supply source is groundwater, and the City does not have a contract that limits its groundwater use, the City uses as much groundwater as necessary to meet demands. Table 6-3 indicates that the groundwater supply is sufficient to meet demands as needed.

Year Type		Base Year	Percent of Average Supply
Normal Year		2006	100
Single Dry Year		2013	100
Multiple Dry Years	Year 1	2011	100
	Year 2	2012	100
	Year 3	2013	100
	Year 4	2014	100
	Year 5	2015	100

*Source: 2020 UWMP, Table 7-2.*

Projected normal year, single dry year, and five-consecutive-dry year supplies are presented in Table 6-4. Because the City considers its groundwater supply 100 percent reliable and uses as much groundwater as is necessary to meet its demands, the values in Table 6-4 are equivalent to the projected demands in Table 5-3 and Table 5-4.



## The Campus Water Supply Assessment

**Table 6-4. Summary of Estimated Available Water Supply**

Condition	Reasonably Available Volume, MG/year <sup>(a)</sup>				
	2025	2030	2035	2040	2045
Normal Year	1,466	1,628	1,790	1,953	2,315
Single Dry Year	1,466	1,628	1,790	1,953	2,315
Multiple Dry Year 1	1,466	1,628	1,790	1,953	2,315
Multiple Dry Year 2	1,498	1,661	1,823	2,025	2,377
Multiple Dry Year 3	1,531	1,693	1,855	2,098	2,449
Multiple Dry Year 4	1,563	1,725	1,888	2,170	2,521
Multiple Dry Year 5	1,596	1,758	1,920	2,243	2,594

(a) The Solano Subbasin is not adjudicated and is not in overdraft or expected to be in overdraft. The City does not have a contract that limits its groundwater use and uses as much groundwater as is necessary to meet demands. The volumes shown are equal to the projected demands in Table 5-3 and Table 5-4 and are not intended to represent the City's maximum pumping volume.



## The Campus Water Supply Assessment

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

*Water Code Section 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.*

*Water Code Section 10911 (a) If, as a result of its assessment, the public water system concludes that its water supplies are, or will be, insufficient, the public water system shall provide to the city or county its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies.*

Pursuant to Water Code section 10910(c)(4), and based on the technical analyses described in this WSA, the total projected water supplies determined to be available for the Proposed Project during normal, single dry, and multiple dry years during a 20-year projection will meet the projected water demands associated with the Proposed Project, in addition to existing and planned future uses. Proponents of the Proposed Project will be responsible for funding and constructing the infrastructure required to deliver water supplies to the Proposed Project area.

Table 7-1 summarizes the projected availability of the City's existing and planned future water supplies compared with projected water demands in normal, single dry, and multiple dry years through buildout. As stated in Section 3.4, the Proposed Project's water demands were partially included in future water demand projections presented in the 2020 UWMP, and the updated demand projections presented in Table 5-3 and Table 5-4 are used in this comparison.





# The Campus Water Supply Assessment

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

Hydrologic Condition		Normal, Single Dry, and Multiple Dry Years				
		2025	2030	2035	2040	2045
<b>Normal Year</b>						
Available Water Supply <sup>(a)</sup>		1,466	1,628	1,790	1,953	2,315
Total Water Demand <sup>(b)</sup>		1,466	1,628	1,790	1,953	2,315
Potential Surplus (Deficit)		0	0	0	0	0
Percent Shortfall of Demand		--	--	--	--	--
<b>Single Dry Year</b>						
Available Water Supply <sup>(a)</sup>		1,466	1,628	1,790	1,953	2,315
Total Water Demand <sup>(c)</sup>		1,466	1,628	1,790	1,953	2,315
Potential Surplus (Deficit)		0	0	0	0	0
Percent Shortfall of Demand		--	--	--	--	--
<b>Multiple Dry Years</b>						
Multiple Dry Year 1	Available Water Supply <sup>(a)</sup>	1,466	1,628	1,790	1,953	2,315
	Total Water Demand <sup>(c)</sup>	1,466	1,628	1,790	1,953	2,315
	Potential Surplus (Deficit)	0	0	0	0	0
	Percent Shortfall of Demand	--	--	--	--	--
Multiple Dry Year 2	Available Water Supply <sup>(a)</sup>	1,498	1,661	1,823	2,025	2,377
	Total Water Demand <sup>(c)</sup>	1,498	1,661	1,823	2,025	2,377
	Potential Surplus (Deficit)	0	0	0	0	0
	Percent Shortfall of Demand	--	--	--	--	--
Multiple Dry Year 3	Available Water Supply <sup>(a)</sup>	1,531	1,693	1,855	2,098	2,449
	Total Water Demand <sup>(c)</sup>	1,531	1,693	1,855	2,098	2,449
	Potential Surplus (Deficit)	0	0	0	0	0
	Percent Shortfall of Demand	--	--	--	--	--
Multiple Dry Year 4	Available Water Supply <sup>(a)</sup>	1,563	1,725	1,888	2,170	2,521
	Total Water Demand <sup>(c)</sup>	1,563	1,725	1,888	2,170	2,521
	Potential Surplus (Deficit)	0	0	0	0	0
	Percent Shortfall of Demand	--	--	--	--	--
Multiple Dry Year 5	Available Water Supply <sup>(a)</sup>	1,596	1,758	1,920	2,243	2,594
	Total Water Demand <sup>(c)</sup>	1,596	1,758	1,920	2,243	2,594
	Potential Surplus (Deficit)	0	0	0	0	0
	Percent Shortfall of Demand	--	--	--	--	--

(a) Refer to Table 6-4.  
 (b) Refer to Table 5-3.  
 (c) Refer to Table 5-4.



## The Campus Water Supply Assessment

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### 8.0 WATER SUPPLY ASSESSMENT APPROVAL PROCESS

*Water Code Section 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.*

*Water Code Section 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.*

As the approving agency for the Proposed Project, the City must adopt this WSA at a regular or special meeting. Furthermore, the City must include this WSA in the EIR being prepared for the Proposed Project.



## The Campus Water Supply Assessment

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### 9.0 REFERENCES

City of Dixon. 2009. *Northeast Quadrant Specific Plan*.

City of Dixon. 2021. *2040 General Plan*.

City of Dixon. August 2023. *Notice of Preparation and Scoping Meeting for the Draft Environmental Impact Report for The Campus*.

Luhdorff & Scalmanini Consulting Engineers. 2021. *Solano Subbasin Groundwater Sustainability Plan*.

West Yost. 2018. *City of Dixon 2016 Water System Master Plan and Strategic Asset Management Plan*.

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