

**Engineering, Operations and
Water Resources Committee Meeting
October 23, 2013**

AGENDA ITEMS 7 & 8

WATER SUPPLY ASSESSMENTS AND
VERIFICATION REPORTS
DATED SEPTEMBER 2013

FOR THE

OTAY RANCH VILLAGE 2 SPA AMENDMENT

&

OTAY RANCH UNIVERSITY VILLAGE PROJECT
(3 NORTH AND A PORTION OF VILLAGES 4,
8 EAST, AND 10)

AGENDA ITEM 7



STAFF REPORT

TYPE MEETING:	Regular Board	MEETING DATE:	November 6, 2013
SUBMITTED BY:	Lisa Coburn-Boyd Environmental Specialist Bob Kennedy Engineering Manager	CIP./G.F. NO:	D0740- 090161
		DIV. NO.	2
APPROVED BY:	<input checked="" type="checkbox"/> Rod Posada, Chief, Engineering <input checked="" type="checkbox"/> German Alvarez, Assistant General Manager <input checked="" type="checkbox"/> Mark Watton, General Manager		
SUBJECT:	Approval of Water Supply Assessment and Verification Report (September 2013) for the Otay Ranch Village 2 SPA Amendment		

GENERAL MANAGER'S RECOMMENDATION:

That the Otay Water District (District) Board of Directors (Board) approve the Water Supply Assessment Report (WSA&V Report) dated September 2013 for the Otay Ranch Village 2 SPA Amendment, as required by Senate Bills 610 and 221 (see Exhibit A for Project location).

COMMITTEE ACTION:

Please see Attachment A.

PURPOSE:

To obtain Board approval of the WSA&V Report dated September 2013 for the Otay Ranch Village 2 SPA Amendment, as required by Senate Bill 610 and Senate Bill 221 (SB 610 and SB 221).

ANALYSIS:

The City of Chula Vista submitted a request for a WSA&V report to the District pursuant to SB 610 and SB 221. SB 610 and SB 221 require that, upon the request of the City or County, a water purveyor, such as the District, prepare a water supply assessment and verification report to be included in the California Environmental Quality Act (CEQA) environmental documentation. This request was received by the District on October 2, 2013.

SB 610 requires a city or county to evaluate whether water supplies will be sufficient to meet the projected water demand for certain "projects" that are otherwise subject to the requirement of the CEQA. SB 610 provides its own definition of "project" in Water Code Section 10912.

SB 221 requires affirmative written verification from the water purveyor of the public water system that sufficient water supplies are planned to be available for certain residential subdivisions of property. The requirements of SB 610 and SB 221 are addressed by the September 2013 WSA&V Report for this Project. The WSA&V Report was prepared by the District in consultation with Dexter Wilson Engineering, the San Diego County Water Authority (Water Authority), and the City of Chula Vista (City).

Prior to transmittal to the City, the WSA&V Report must be approved by the Board of Directors. An additional explanation of the intent of SB 610 and SB 221 is provided in Exhibit B, the Otay Ranch Village 2 SPA Amendment WSA&V Report is provided as Exhibit C.

For the Otay Ranch Village 2 SPA Amendment, the City is the responsible land use agency that requested the SB 610 and SB 221 water supply assessment and verification report from the District. The request for the WSA&V Reports, in compliance with SB 610 and SB 221 requirements, was made by the City because the Project meets or exceeds one or both of the following SB 610 and SB 221 criteria:

- A proposed residential development of more than 500 dwelling units.
- A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
- A mixed-use project that includes one or more of the land uses specified in SB 610.
- 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.

The Otay Ranch Village 2 Project is located within the Otay River parcel of the Otay Ranch General Development Plan/Sub-

regional Plan (Otay Ranch GDP), a land use planning document jointly prepared and adopted by the County of San Diego and the City of Chula Vista. The Village 2 Project is a part of the designated 14 villages and five planning areas within the Otay Ranch GDP. As the Otay Ranch area has developed over time, the Otay Ranch GDP has been amended to address land use and circulation element issues. Village 2 is located along the south side of Olympic Parkway, west of La Media Road in the City of Chula Vista. The current SPA Amendment for this Village proposes to add 1,564 residential units, an elementary school, park, and Community Park Facilities (CPF) sites to the Project.

The expected potable water demand for the Otay Ranch Village 2 SPA Amendment is 1.46 million gallons per day or about 1,634 acre-feet per year (AFY) which is 529 AFY higher than what was projected in the District's 2010 Water Resources Master Plan Update (WRMP Update). The projected recycled water demand for the Otay Ranch Village 2 SPA Amendment is 0.50 million gallons per day or 560 AFY, representing about 25% of the total Otay Ranch Village 2 SPA Amendment water demand.

The 529 AFY increase is accounted for through the Accelerated Forecasted Growth demand increment of the Water Authority's 2010 UWMP. As documented in the Water Authority's 2010 UWMP, the Water Authority is planning to meet future and existing demands which include the demand increment associated with the accelerated forecasted growth. The Water Authority will assist its member agencies in tracking the environmental documents provided by the agencies that include water supply assessments and verifications reports that utilize the accelerated forecasted growth demand increment to demonstrate supplies for the development. In addition, the next update of the demand forecast for the Water Authority's 2015 UWMP will be based on SANDAG's most recently updated forecast, which will include the Project. Therefore, based on the findings from the District's 2010 UWMP and the Water Authority's 2010 UWMP, this Project will result in no unanticipated demands.

The request for compliance with SB 221 requirements was made by the City because the Project will exceed the SB 221 criteria of a proposed residential development subdivision of more than 500 dwelling units.

Pursuant to SB 610 and SB 221, the WSA&V Report incorporate by reference the current Urban Water Management Plans and other water resources planning documents of the District, the Water Authority, and the Metropolitan Water District of Southern



ATTACHMENT A

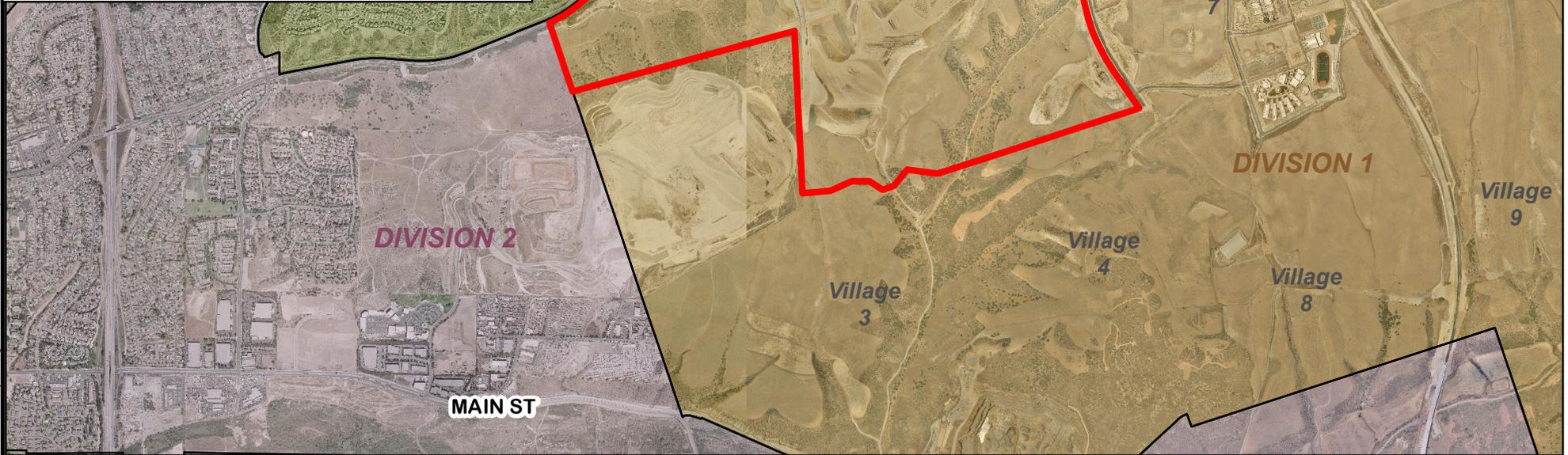
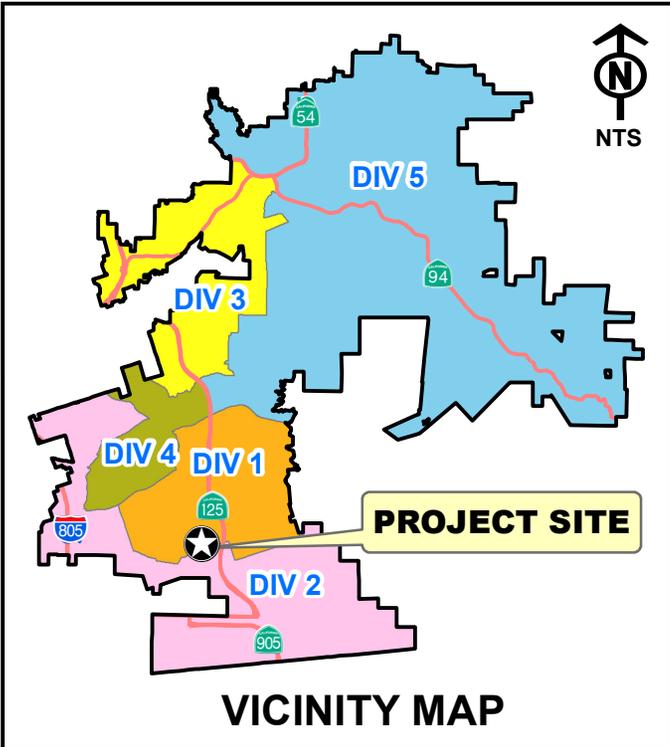
SUBJECT/PROJECT: D0740-090161	Approval of Water Supply Assessment and Verification Report (September 2013) for the Otay Ranch Village 2 SPA Amendment
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COMMITTEE ACTION:

The Engineering, Operations, and Water Resources Committee (Committee) reviewed this item at a meeting held on October 23, 2013. The Committee supported Staff's recommendation.

NOTE:

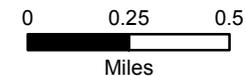
The "Committee Action" is written in anticipation of the Committee moving the item forward for Board approval. This report will be sent to the Board as a Committee approved item, or modified to reflect any discussion or changes as directed from the Committee prior to presentation to the full Board.



P:\WORKING\WO_D0871 - University Villages\Exhibit A, Location Map.mxd



OTAY WATER DISTRICT
OTAY RANCH UNIVERSITY VILLAGES PROJECT
VILLAGE 2 LOCATION MAP



SPA D0740-090161

EXHIBIT B

Background Information

The Otay Water District (District) prepared the September 2013 Water Supply Assessment and Verification (WSA&V) Report for the Otay Ranch Village 2 Sectional Planning Assessment (SPA) Amendment at the request of the City of Chula Vista (City). The City's WSA&V request letter dated October 2, 2013 was received by the District on October 2, 2013 so the 90-day deadline for the District to provide the Board an approved WSA&V Report to the City ends December 30, 2013. The Village 2 SPA Amendment is located within the 23,000-acre Otay Ranch master planned community within the City of Chula Vista. The current SPA amendment proposes to add 1,564 residential units, an elementary school, park, and Community Park Facilities (CPF) sites to the Village 2 Project.

The Otay Ranch Village 2 SPA Amendment is located within the jurisdictions of the District, the San Diego County Water Authority (Water Authority), and the Metropolitan Water District of Southern California (MWD). See Exhibit A for Project location. To obtain permanent imported water supply service, land areas are required to be within the jurisdictions of the District, Water Authority, and MWD.

The September 2013 WSA&V Report for the Otay Ranch Village 2 SPA Amendment has been prepared by the District in consultation with Dexter Wilson Engineering, the Water Authority, and the City pursuant to Public Resources Code Section 21151.9 and California Water Code Sections 10631, 10656, 10910, 10911, 10912, and 10915 referred to as Senate Bill (SB) 610 and Government Code Sections 65867.5, 66455.3, and 66473.7 referred to as SB 221. SB 610 and SB 221 amended state law, effective January 1, 2002, intending to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 requires that the water purveyor of the public water system prepare a water supply assessment to be included in the California Environmental Quality Act (CEQA) environmental documentation and approval process of certain proposed projects. SB 221 requires affirmative written verification from the water purveyor of the public water system that sufficient water supplies are to be available for certain residential subdivision of property. The requirements of SB 610 and SB 221 are addressed in the September 2013 WSA&V Report for the Otay Ranch Village 2 SPA Amendment.

The Otay Ranch Village 2 SPA Amendment Project is located within the City of Chula Vista, and is one of the 14 villages and 5 planning areas within the Otay Ranch General Development Plan/Sub-regional Plan (Otay Ranch GDP) which was jointly prepared by the County of San Diego and the City of Chula Vista. Village 2 is within what is defined as the Otay River parcel and is located along the south side of Olympic Parkway, west of La Media Road. The SPA Plan for Villages 2, 3, and a portion of 4 was approved on May 23, 2006 and included a WSA&V Report. The current SPA amendment proposes

to add 1,564 residential units, an elementary school, park, and CPF sites to the Village 2 Project. Due to the magnitude of the proposed new development, a new WSA&V Report is necessary.

The expected potable water demand for the Otay Ranch Village 2 SPA Amendment is 1.46 million gallons per day (MGD) or about 1,634 acre-feet per year (AFY) which is 529 AFY higher than what was projected in the District's 2010 Water Resources Master Plan Update (WRMP Update). The projected recycled water demand for the Otay Ranch Village 2 SPA Amendment is 0.50 MGD or 560 AFY, representing about 25% of the total Otay Ranch Village 2 SPA Amendment water demand.

The 529 AFY increase in demand is accounted for through the Accelerated Forecasted Growth demand increment of the Water Authority's 2010 UWMP. As documented in the Water Authority's 2010 UWMP, the Water Authority is planning to meet future and existing demands which include the demand increment associated with the accelerated forecasted growth. The Water Authority will assist its member agencies in tracking the environmental documents provided by the agencies that include water supply assessments and verifications reports that utilize the accelerated forecasted growth demand increment to demonstrate supplies for the development. In addition, the next update of the demand forecast for the Water Authority's 2015 UWMP will be based on SANDAG's most recently updated forecast, which will include the Project. Therefore, based on the findings from the Otay WD's 2010 UWMP and the Water Authority's 2010 UWMP, this Project will result in no unanticipated demands.

The District currently depends on the Water Authority and the MWD for all of its potable water supplies and regional water resource planning. The District's 2010 Urban Water Management Plan (UWMP) relies heavily on the UWMP's and Integrated Water Resources Plans (IRPs) of the Water Authority and MWD for documentation of supplies available to meet projected demands. These plans are developed to manage the uncertainties and variability of multiple supply sources and demands over the long-term through preferred water resources strategy adoption and resource development target approvals for implementation.

MWD in October 2010 approved the update of their Integrated Water Resources Plan (IRP). The 2010 IRP Update describes an adaptive management approach to mitigate against future water supply uncertainty. The new uncertainties that are significantly affecting California's water resources include:

- The Federal Court ruling on previous operational limits on Sacramento-San Joaquin Delta to protect the Delta species. Water agencies are still trying to determine what effect the ruling will have on State Water Project (SWP) deliveries. Actual supply curtailments for MWD are contingent upon fish distribution, behavioral patterns, weather, Delta flow conditions, and how water supply reductions are divided between state and federal projects.
- Periodic extended drought conditions.

These uncertainties have rightly caused concern among Southern California water supply agencies regarding the validity of the current water supply documentation.

MWD is currently involved in several proceedings concerning Delta operations to evaluate and address environmental concerns. In addition, at the State level, the Delta Vision and Bay-Delta Conservation Plan processes are defining long-term solutions for the Delta.

The SWP represents approximately 9% of MWD's 2025 Dry Resources Mix with the supply buffer included. A 22% cutback in SWP supply represents an overall 2% (22% of 9% is 2%) cutback in MWD supplies in 2025. Neither the Water Authority nor MWD has stated that there is insufficient water for future planning in Southern California. Each agency is in the process of reassessing and reallocating their water resources.

Under preferential rights, MWD can allocate water without regard to historic water purchases or dependence on MWD. Therefore, the Water Authority and its member agencies are taking measures to reduce dependence on MWD through development of additional supplies and a water supply portfolio that would not be jeopardized by a preferential rights allocation.

As calculated by MWD (December 11, 2012), the Water Authority's current preferential right is 17.22% of MWD's supply, while the Water Authority accounted for approximately 25% of MWD's total revenue. So MWD could theoretically cut back the Water Authority's supply and theoretically, the Water Authority should have alternative water supply sources to make up for the difference. In the Water Authority's 2010 UWMP, they had already planned to reduce reliance on MWD supplies. This reduction is planned to be achieved through diversification of their water supply portfolio.

The Water Authority's Drought Management Plan (May 2006) provides the Water Authority and its member agencies with a series of potential actions to engage when faced with a shortage of imported water supplies due to prolonged drought conditions. Such actions help avoid or minimize impacts of shortages and ensure an equitable allocation of supplies throughout the San Diego County region.

The Otay Water District Board of Directors could acknowledge the ever-present challenge of balancing water supply with demand and the inherent need to possess a flexible and adaptable water supply implementation strategy that can be relied upon during normal and dry weather conditions. The responsible regional water supply agencies have and will continue to adapt their resource plans and strategies to meet climatological, environmental, and legal challenges so that they may continue to provide water supplies to their service areas. The regional water suppliers (i.e., the Water Authority and MWD), along with the District, fully intend to maintain sufficient reliable supplies through the 20-year planning horizon under normal, single-dry, and multiple-dry year conditions to meet projected demand of the Otay Ranch Village 2 SPA

Amendment, along with existing and other planned development projects within the District's service area.

If the regional water suppliers determine additional water supplies will be required, or in this case, that water supply portfolios need to be reassessed and redistributed with the intent to serve the existing and future water needs throughout Southern California, the agencies must indicate the status or stage of development of actions identified in the plans they provide. MWD's 2010 IRP update will then cause the Water Authority to update its IRP, which will then provide the District with the necessary water supply documentation. Identification of a potential future action in such plans does not by itself indicate that a decision to approve or to proceed with the action has been made. The District's Board approval of the Otay Ranch Village 2 SPA Amendment WSA&V Report does not in any way guarantee water supply to the parcels that make up the Otay Ranch Village 2 SPA Amendment.

Alternatively, if the WSA&V Report is written to state that water supply is or will be unavailable; the District must include, in the assessment, a plan to acquire additional water supplies. At this time, the District should not state there is insufficient water supply.

So the best the District can do right now is to state the current water supply situation clearly, indicating intent to provide supply through reassessment and reallocation by the regional, as well as, the local water suppliers. In doing so, it is believed that the Board has met the intent of the SB 610 statute, that the land use agencies and the water agencies are coordinating their efforts in planning water supplies for new development.

With District Board approval of the Otay Ranch Village 2 SPA Amendment WSA&V Report, the Otay Ranch Village 2 SPA Amendment proponents can proceed with the draft environmental documentation required for the CEQA review process. The water supply issues will be addressed in these environmental documents, consistent with the WSA&V Report.

The District, as well as others, can comment on the draft EIR with recommendations that water conservation measures and actions be employed on the OMCP Update.

Some recent actions regarding water supply assessments and verification reports by Otay Water District are as follows:

- The Board approved the Judd Company Otay Crossings Commerce Park water supply assessment report on December 5, 2007.
- The Board approved the Otay Ranch L.P. Otay Ranch Preserve and Resort Project Water Supply Assessment and Verification Report on February 4, 2009.

- The Board approved water supply assessment and verification reports for the City of Chula Vista Village 8 West Sectional Plan Area and Village 9 Sectional Plan Area on January 5, 2011.
- The Board approved the water supply assessment report for the San Diego-Tijuana Cross Border Facility on February 2, 2011.
- The Board approved the water supply assessment for the County of San Diego Rabago Technology Park on April 6, 2011.
- The Board approved the water supply assessment report for the Pio Pico Energy Center Project on October 5, 2011.
- The Board approved the water supply assessment report for the Hawano Project on March 7, 2012.
- The Board approved the water supply assessment reports for the Sunroad Otay Plaza and Otay Tech Center Projects on March 6, 2013.
- The Board approved the water supply assessment reports for the Otay Ranch Planning Area 12 Freeway Commercial Project and the City of San Diego Otay Mesa Community Plan Update on July 3, 2013.

Water supplies necessary to serve the demands of the proposed Otay Ranch Village 2 SPA Amendment, along with existing and other projected future users, as well as the actions necessary to develop these supplies, have been identified in the water supply planning documents of the District, the Water Authority, and MWD.

The WSA&V Report includes, among other information, an identification of existing water supply entitlements, water rights, water service contracts, or agreements relevant to the identified water supply needs for the proposed Otay Ranch Village 2 SPA Amendment. The WSA&V Report demonstrates and documents that sufficient water supplies are planned and are intended to be available over a 20-year planning horizon, under normal conditions and in single-dry and multiple-dry years, to meet the projected demand of the proposed Otay Ranch Village 2 SPA Amendment and the existing and other planned development projects within the District.

Accordingly, after approval of a WSA&V Report for the Otay Ranch Village 2 SPA Amendment by the District's Board of Directors, the WSA&V Report may be used to comply with the requirements of the legislation enacted by Senate Bills 610 and 221 as follows:

Senate Bill (SB) 610 Water Supply Assessment: The District's Board of Directors approved WSA&V Report may be incorporated into the California Environmental Quality Act (CEQA) compliance process for the Otay Ranch Village 2 SPA Amendment as a water supply assessment report consistent with the requirements

of the legislation enacted by SB 610. The City of Chula Vista, as lead agency under the CEQA for the Otay Ranch Village 2 SPA Amendment environmental documentation, may cite the approved WSA&V Report as evidence that a sufficient water supply is planned and intended to be available to serve the Otay Ranch Village 2 SPA Amendment.

Senate Bill (SB) 221 Water Supply Verification: The District's Board of Directors approved WSA&V Report may be incorporated into the City's Otay Ranch Village 2 SPA Amendment as a water supply verification report, consistent with the requirements of the legislation enacted by SB 221. The City, within their process of approving the Otay Ranch Village 2 SPA Amendment, may cite the approved WSA&V Report as verification of intended sufficient water supply to serve the Project.



OTAY WATER DISTRICT

**WATER SUPPLY ASSESSMENT AND
VERIFICATION REPORT**

**Otay Ranch Village 2 SPA Amendment
D0740-090161**

Prepared by:
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September 2013

**Otay Water District
Water Supply Assessment and Verification Report
September 2013**

Otay Ranch Village 2 SPA Amendment

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Otay Water District Water Supply Assessment and Verification Report September 2013

Otay Ranch Village 2 SPA Amendment

Executive Summary

The Otay Water District (Otay WD) prepared this Water Supply Assessment and Verification Report (WSA&V Report) at the request of the City of Chula Vista (City) for the Otay Ranch Village 2 SPA Amendment project. Village 2 is split into several different ownerships. Baldwin and Sons is the majority owner in Village 2 and has submitted a comprehensive SPA Amendment to the City.

Project Overview and Water Use

The Village 2 project is included within a land use planning document known as the Otay Ranch General Development Plan/Sub-regional Plan (Otay Ranch GDP). The County of San Diego and City of Chula Vista jointly prepared and adopted the Otay Ranch GDP. The Village 2 project is located within what is defined as the Otay River Parcel of the Otay Ranch GDP. The project is a part of the designated 14 villages and five planning areas within the Otay Ranch GDP area. The Chula Vista City Council and the San Diego County Board of Supervisors adopted the Otay Ranch GDP on October 28, 1993, which was accompanied by a Program Environmental Impact Report EIR-90-01 (SCH #89010154). As the Otay Ranch area has developed over time, the Otay Ranch GDP has been periodically amended to address land use and circulation element issues specific to individual Villages.

The Village 2 project is located along the south side of Olympic Parkway, west of La Media Road. The Sectional Planning Area Plan (SPA Plan) for Villages 2, 3, and a portion of 4 was approved on May 23, 2006. A Water Supply Assessment and Verification report for the project was included as part of the approval process. The current SPA Amendment proposes to add 1,564 residential units, an elementary school, park, and Community Park Facilities (CPF) sites to the Village 2 project. Due to the magnitude of the proposed new development, a new Water Supply Assessment and Verification report is necessary.

The expected potable water demand for Village 2 with the currently proposed SPA Amendment is 1.46 million gallons per day (MGD) or about 1,634 acre-feet per year (ac-ft/yr). This is 529 acre-foot per year higher than the demand estimate in the 2010 Otay WD Water Resources Master Plan Revision (2010 WRMP Revision) of the 2009 Otay WD Water Resources Master Plan. The projected recycled water demand for the proposed project is

approximately 0.50 MGD or about 560 ac-ft/yr, representing about 25% of total project water demand.

The 529 AFY increase in demand is accounted for through the Accelerated Forecast Growth demand increment of the Water Authority's 2010 Urban Water Management Plan (UWMP). As documented in the Water Authority's 2010 UWMP, the Water Authority is planning to meet future and existing demands which include an increment associated with the accelerated forecasted growth. The Water Authority will assist its member agencies in tracking the environmental documents provided by the agencies that include water supply assessments and verification reports that utilize the accelerated forecasted growth demand increment to demonstrate supplies for the development. In addition, the next update of the demand forecast for the Water Authority's 2015 UWMP will be based on the San Diego Association of Government's (SANDAG) most recently updated forecast, which will include the Project. Therefore, based on the findings from the Otay WD's 2010 UWMP and the Water Authority's 2010 UWMP, this project will result in no unanticipated demands.

The Water Authority's 2010 UWMP provides for a comprehensive planning analysis at a regional level and includes water use associated with accelerated forecasted development as part of its municipal and industrial sector demand projections. These housing and commercial units were identified by SANDAG in the course of its regional housing needs assessment, but are not yet included in existing general land use plans of local jurisdictions. The demand associated with accelerated forecasted residential development is intended to account for SANDAG's land-use development currently projected to occur between 2035 and 2050, but has the likely potential to occur on an accelerated schedule. SANDAG estimates that this accelerated forecasted residential and commercial development could occur within the planning horizon (2015 to 2035) of the 2010 UWMP. This land-use is not included in the local jurisdictions' general plan, so their projected demands are incorporated at a regional level. When necessary, this additional demand increment, termed Accelerated Forecasted Growth, can be used by member agencies to meet the demands of development projects not identified in the general land use plans.

Planned Imported Water Supplies from the Water Authority and MWD

The Water Authority and the Metropolitan Water District (MWD) have an established process that ensures supplies are being planned to meet future growth. Any annexations and revisions to established land use plans are captured in the SANDAG updated forecasts for land use planning, demographics, and economic projections. SANDAG serves as the regional, intergovernmental planning agency that develops and provides forecast information. The Water Authority and MWD update their demand forecasts and supply needs based on the most recent SANDAG forecast approximately every five years to coincide with preparation of their UWMP's. Prior to the next forecast update, local jurisdictions may require water supply assessment and/or verification reports for proposed land developments that are not within Otay WD, Water Authority, nor MWD jurisdictions (i.e., pending or proposed annexations) or that have revised land use plans than what is reflected in the existing growth forecasts.

Proposed land areas with pending or proposed annexations or revised land use plans typically result in creating higher demand and supply requirements than anticipated. The Otay WD, Water Authority, and MWD next demand forecast and supply requirements and associated planning documents would then capture any increase or decrease in demands and required supplies as a result of annexations or revised land use planning decisions.

The California Urban Water Management Planning Act (Act), which is included in the California Water Code, requires all urban water suppliers within the state to prepare an UWMP and update it every five years. The purpose and importance of the UWMP has evolved since it was first required 25 years ago. State agencies and the public frequently use the document to determine if agencies are planning adequately to reliably meet future demands. As such, UWMPs serve as an important element in documenting supply availability for the purpose of compliance with state laws, Senate Bills 610 and 221, linking water supply sufficiency to large land-use development approval. Agencies must also have a UWMP prepared, pursuant to the Act, in order to be eligible for state funding and drought assistance.

MWD's Integrated Resource Plan (IRP) identifies a mix of resources (imported and local) that, when implemented, will provide 100 percent reliability for full-service demands through the attainment of regional targets set for conservation, local supplies, State Water Project supplies, Colorado River supplies, groundwater banking, and water transfers. The 2010 update to the IRP (2010 IRP Update) includes a planning buffer supply intended to mitigate against the risks associated with implementation of local and imported supply programs. The planning buffer identifies an additional increment of water that could potentially be developed if other supplies are not implemented as planned. As part of implementation of the planning buffer, MWD periodically evaluates supply development to ensure that the region is not under or over developing supplies. Managed properly, the planning buffer will help ensure that the southern California region, including San Diego County, will have adequate water supplies to meet future demands.

Water supply agencies throughout California continue to face climatological, environmental, legal, and other challenges that impact water source supply conditions, such as the court rulings regarding the Sacramento-San Joaquin Delta issues and the recent drought impacting the western states. Challenges such as these essentially always will be present. The regional water supply agencies, the Water Authority and MWD, along with Otay WD, nevertheless fully intend to have sufficient, reliable supplies to serve demands.

In Section ES-5 of MWD's 2010 Regional Urban Water Management Plan (2010 RUWMP), MWD states that MWD has supply capacities that would be sufficient to meet expected demands from 2015 through 2035. MWD has plans for supply implementation and continued development of a diversified resource mix including programs in the Colorado River Aqueduct, State Water Project, Central Valley Transfers, local resource projects, and in-region storage that enables the region to meet its water supply needs. MWD's 2010 RUWMP identifies potential reserve supplies in the supply capability analysis (Tables 2-9, 2-10, and 2-

11), which could be available to meet the unanticipated demands such as those related to the Village 2 SPA Amendment Project.

The County Water Authority Act, Section 5 subdivision 11, states that the Water Authority “as far as practicable, shall provide each of its member agencies with adequate supplies of water to meet their expanding and increasing needs.”

As part of preparation of a written water supply assessment report, an agency’s shortage contingency analysis should be considered in determining sufficiency of supply. Section 11 of the Water Authority’s 2010 UWMP contains a detailed shortage contingency analysis that addresses a regional catastrophic shortage situation and drought management. The analysis demonstrates that the Water Authority and its member agencies, through the Emergency Response Plan, Emergency Storage Project, and Drought Management Plan (DMP) are taking actions to prepare for and appropriately handle an interruption of water supplies. The DMP, adopted in May 2006, provides the Water Authority and its member agencies with a series of potential actions to take when faced with a shortage of imported water supplies from MWD due to prolonged drought or other supply shortfall conditions. The actions will help the region avoid or minimize the impacts of shortages and ensure an equitable allocation of supplies.

Otay Water District Water Supply Development Program

In evaluating the availability of sufficient water supply, the Village 2 SPA Amendment project proponents are required to participate in the development of alternative water supply project(s). This can be achieved through payment of the Water Supply Fee adopted by the Otay WD Board in May 2010. These water supply projects, detailed in the Otay WD’s 2010 UWMP, are in addition to those identified as sustainable supplies in the current Water Authority and MWD UWMP, IRP, Master Plans, and other planning documents. These new water supply projects are in response to the regional water supply issues and are not currently developed but are in various stages of the planning process. A few examples of these alternative water supply projects include the Middle Sweetwater River Basin Groundwater Well project, the North District Recycled Water Supply Concept, the Rosarito Ocean Desalination Facility project, and the Rancho del Rey Groundwater Well project. The Water Authority and MWD next forecast and supply planning documents would capture any increase in water supplies resulting from any new water resources developed by Otay WD.

Findings

The WSA&V Report identifies and describes the processes by which water demand projections for the proposed Village 2 SPA Amendment project will be fully included in the water demand and supply forecasts of the UWMPs and other water resources planning documents of the Water Authority and MWD. Water supplies necessary to serve the demands of the proposed project, along with existing and other projected future users, as well as the

actions necessary and status to develop these supplies, have been identified in the Village 2 SPA Amendment project WSA&V Report and will be included in the future water supply planning documents of the Water Authority and MWD.

This WSA&V Report includes, among other information, an identification of existing water supply entitlements, water rights, water service contracts, water supply projects, or agreements relevant to the identified water supply needs for the proposed Village 2 SPA Amendment project. The WSA&V Report demonstrates and documents that sufficient water supplies are planned for and are intended to be available over a 20-year planning horizon, under normal conditions and in single-dry and multiple-dry years to meet the projected demand of the proposed Village 2 SPA Amendment project and the existing and other planned development projects to be served by the Otay WD.

Accordingly, after approval of a WSA&V Report for the Village 2 SPA Amendment project by the Otay WD Board of Directors (Board), the WSA&V Report may be used to comply with the requirements of the legislation enacted by Senate Bills 610 and 221 as follows:

1. Senate Bill 610 Water Supply Assessment: The Otay WD Board approved WSA&V Report may be incorporated into the California Environmental Quality Act (CEQA) Environmental Impact Report (EIR) compliance process for the Village 2 SPA Amendment project as a water supply assessment report consistent with the requirements of the legislation enacted by SB 610. The City, as lead agency under CEQA for the Village 2 SPA Amendment project EIR, may cite the approved WSA&V Report as evidence that a sufficient water supply is planned for and is intended to be made available to serve the Village 2 SPA Amendment project.
2. Senate Bill 221 Water Supply Verification: The Otay WD Board approved WSA&V Report may be incorporated into the City's Tentative Map approval process for the Village 2 SPA Amendment project as a water supply verification report, consistent with the requirements of the legislation enacted by SB 221. The City, within their process of approving the Village 2 SPA Amendment project's Tentative Map, may cite the approved WSA&V Report as verification of intended sufficient water supply to serve the Village 2 SPA Amendment project.

Section 1 - Purpose

The Village 2 SPA Amendment project is located in the southern Otay Ranch area. Village 2 is split into several different ownerships. Baldwin and Sons is the majority owner and submitted an SPA Amendment package to the City of Chula Vista for the development of the Otay Ranch Village 2 project. The City requested that Otay WD prepare a Water Supply Assessment and Verification Report for the Village 2 SPA Amendment project. The current

Village 2 SPA Amendment project description is provided in Section 3 of this WSA&V Report.

This WSA&V Report for the Village 2 SPA Amendment project has been prepared by the Otay WD in consultation with Dexter Wilson Engineering, Inc., the San Diego County Water Authority, and the City of Chula Vista pursuant to Public Resources Code Section 21151.9 and California Water Code Sections 10631, 10656, 10910, 10911, 10912, and 10915 referred to as Senate Bill (SB) 610 and Business and Professions Code Section 11010 and Government Code Sections 65867.5, 66455.3, and 66473.7 referred to as SB 221. SB 610 and SB 221 amended state law, effective January 1, 2002, intending to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 requires that the water purveyor of the public water system prepare a water supply assessment to be included in the California Environmental Quality Act (CEQA) environmental documentation and approval process of certain proposed projects. SB 221 requires affirmative written verification from the water purveyor of the public water system that sufficient water supplies are to be available for certain residential subdivisions of property prior to approval of a tentative map. The requirements of SB 610 and SB 221 are being addressed by this WSA&V Report.

The City also requested, since the requirements of SB 610 and SB 221 are substantially similar, that Otay WD prepare both the water supply assessment and verification concurrently.

This WSA&V Report evaluates water supplies that are planned to be available during normal, single-dry years, and multiple-dry water years during a 20-year planning horizon to meet existing demands, expected demands of the Village 2 SPA Amendment project, and reasonably foreseeable planned future water demands served by Otay WD. The Otay WD Board of Directors approved WSA&V Report is planned to be used by the City in its evaluation of the Village 2 SPA Amendment project under the CEQA and Tentative Map approval processes.

Section 2 - Findings

The Otay WD prepared this WSA&V Report at the request of the City for the Otay Ranch Village 2 SPA Amendment project. Baldwin and Sons submitted an entitlement application to the City for the Village 2 SPA Amendment project.

The Village 2 SPA Amendment Project is located within the jurisdictions of the Otay WD, the Water Authority, and the MWD. To obtain permanent imported water supply service, land areas are required to be within the jurisdictions of the Otay WD, Water Authority, and MWD to utilize imported water supply.

The revised expected potable water demand as a result of the Village 2 SPA Amendment Project is 1.46 million gallons per day (MGD) or about 1,634 acre-feet per year (AFY). The current development plan is expected to increase the water demand for this project above what was projected in the District's 2009 Water Resources Master Plan, revised in November 2010, which estimated 1,105 AFY for the same parcels. The revised projected recycled water demand as a result of the Village 2 SPA Amendment Project is 500,056 gpd or 560 AFY, representing about 25% of the total Village 2 SPA Amendment Project water demand.

The 529 AFY increase in demand is accounted for through the Accelerated Forecast Growth demand increment of the Water Authority's 2010 UWMP. As documented in this Plan, the Water Authority is planning to meet future and existing demands which include the demand increment associated with the accelerated forecasted growth. The Water Authority will assist its member agencies in tracking the environmental documents provided by the agencies that include water supply assessments and verification reports that utilize the accelerated forecasted growth demand increment to demonstrate supplies for the development. In addition, the next update of the demand forecast for the Water Authority's 2015 UWMP will be based on SANDAG's most recently updated forecast, which will include the Project. Therefore, based on the findings from the Otay WD's 2010 UWMP and the Water Authority's 2010 UWMP, this project will result in no unanticipated demands.

The Village 2 SPA Amendment Project development proponents are required to use recycled water for irrigation and other appropriate uses. The primary benefit of using recycled water is that it will offset the potable water demands by an estimated 560 AFY. The 2010 WRMP Revision and the 2010 UWMP anticipated that the land area to be utilized for the Village 2 SPA Amendment Project would use both potable and recycled water.

The Water Authority's 2010 UWMP provides for a comprehensive planning analysis at a regional level and includes water use associated with accelerated forecasted development as part of its municipal and industrial sector demand projections. These housing and commercial units were identified by SANDAG in the course of its regional housing needs assessment, but are not yet included in existing general land use plans of local jurisdictions. The demand associated with accelerated forecasted residential development is intended to account for SANDAG's land-use development currently projected to occur between 2035 and 2050, but has the likely potential to occur on an accelerated schedule. SANDAG estimates that this accelerated forecasted residential and commercial development forecasted could occur within the planning horizon (2015 to 2035) of the 2010 UWMP. This land-use is not included in the local jurisdictions' general plan, so their projected demands are incorporated at a regional level. When necessary, this additional demand increment, termed Accelerated Forecasted Growth, can be used by member agencies to meet the demands of development projects not identified in the general land use plans.

The Water Authority and MWD have an established process that ensures supplies are being planned to meet future growth. Any annexations and revisions to established land use plans are captured in the SANDAG updated forecasts for land use planning, demographics, and

economic projections. SANDAG serves as the regional, intergovernmental planning agency that develops and provides forecast information. The Water Authority and MWD update their demand forecasts and supply needs based on the most recent SANDAG forecast approximately every five years to coincide with preparation of their urban water management plans. Prior to the next forecast update, local jurisdictions may require water supply assessment and/or verification reports for proposed land developments that are not within Otay WD, Water Authority, nor MWD jurisdictions (i.e., pending or proposed annexations) or that have revised land use plans than reflected in the existing growth forecasts. Proposed land areas with pending or proposed annexations or revised land use plans typically result in creating higher demand and supply requirements than anticipated. The Otay WD, the Water Authority, and MWD next demand forecast and supply requirements and associated planning documents would then capture any increase or decrease in demands and required supplies as a result of annexations or revised land use planning decisions.

This process is utilized by the Water Authority and MWD to document the water supplies necessary to serve the demands of the proposed Village 2 SPA Amendment project, along with existing and other projected future users, as well as the actions necessary to develop these supplies. Through this process the necessary demand and supply information is thus assured to be identified and incorporated within the water supply planning documents of the Water Authority and MWD.

The Otay WD 2010 UWMP included a water conservation component to comply with Senate Bill 7 of the Seventh Extraordinary Session (SBX 7-7), which became effective February 3, 2010. This new law was the water conservation component to the Delta legislation package, and seeks to achieve a 20 percent statewide reduction in urban per capita water use in California by December 31, 2020. Specifically, SBX 7-7 from this Extraordinary Session requires each urban retail water supplier to develop urban water use targets to help meet the 20 percent reduction goal by 2020 (20x2020), and an interim water reduction target by 2015.

Otay WD has adopted Method 1 to set its 2015 interim and 2020 water use targets. Method 1 requires setting the 2020 water use target to 80 percent of baseline per capita water use target as provided in the State's Draft 20x2020 Water Conservation Plan. The Otay WD 2015 target is 171 gpcd and the 2020 gpcd target at 80 percent of baseline is 152 gpcd.

The Otay WD's recent per capita water use has been declining to the point where current water use already meets the 2020 target for Method 1. This recent decline in per capita water use is largely due to drought water use restrictions, increased water costs, and economic conditions. However, Otay WD's effective water use awareness campaign and enhanced conservation mentality of its customers will likely result in some long-term carryover of these reduced consumption rates.

In evaluating the availability of sufficient water supply, the Village 2 SPA Amendment project proponents are required to participate in the development of alternative water supply project(s). This can be achieved through payment of the Water Supply Fee adopted by the

Otay Water District Board in May 2010. These water supply projects are in addition to those identified as sustainable supplies in the current Water Authority and MWD UWMP, IRP, Master Plans, and other planning documents. These new water supply projects are in response to the regional water supply issues related to the Sacramento-San Joaquin Delta and the current ongoing western states drought conditions. These new additional water supply projects are not currently developed and are in various stages of the planning process. A few examples of these alternative water supply projects include the Middle Sweetwater River Basin Groundwater Well project, the North District Recycled Water Supply Concept, the Rosarito Ocean Desalination Facility project, and the Rancho del Rey Groundwater Well project. The Water Authority and MWD next forecast and supply planning documents would capture any increase in water supplies resulting from any new water resources developed by the Otay WD.

Water supplies necessary to serve the demands of the proposed Village 2 SPA Amendment project, along with existing and other reasonably foreseeable projected future users, as well as the actions necessary and status to develop these supplies, will be identified and included within the water supply planning documents of the Water Authority and MWD. This WSA&V Report demonstrates and verifies that with development of the resources currently identified and those that may be additional acquired, that there is sufficient water supplies being planned for and is intended to be developed over the next 20-year planning horizon to meet the projected demand of the proposed Village 2 SPA Amendment project and the existing and other reasonably foreseeable planned development projects within the Otay WD.

This WSA&V Report includes, among other information, an identification of existing water supply entitlements, water rights, water service contracts, proposed water supply projects, or agreements relevant to the identified water supply needs for the proposed Village 2 SPA Amendment project. This WSA&V Report incorporates by reference the current Urban Water Management Plans and other water resources planning documents of the Otay WD, the Water Authority, and MWD. The Otay WD prepared this WSA&V to verify and document that sufficient water supplies are being planned for and are intended to be acquired to meet projected water demands of the Village 2 SPA Amendment project and the existing and other reasonably foreseeable planned development projects within the Otay WD for a 20-year planning horizon, in normal supply years, and in single-dry and multiple-dry years.

Based on a normal water supply year, the five-year increments for a 20-year projection indicate projected potable and recycled water supply is being planned for and is intended to be acquired to meet the estimated water demand targets of the Otay WD (44,883 acre-feet (ac-ft) in 2015 to 56,614 ac-ft in 2035 per the Otay WD 2010 UWMP). Based on dry year forecasts, the estimated water supply is also being planned for and is intended to be acquired to meet the projected water demand, during single-dry and multiple-dry year scenarios. On average, the dry year demands are about 6.4 percent higher than the normal year demands. The Otay WD recycled water supply is assumed to be drought-proof and not subject to reduction during dry periods.

Together, these findings demonstrate and verify that sufficient water supplies are being planned for and are intended to be acquired, as well as the actions necessary and status to develop these supplies are and will be further documented, to serve the proposed Village 2 SPA Amendment project and the existing and other reasonably foreseeable planned projects within the Otay WD in both normal and single-dry and multiple-dry year forecasts for a 20-year planning horizon.

Section 3 - Project Description

The Otay Ranch Village 2 SPA Amendment project is located within the City of Chula Vista, California. Refer to Appendix A for a regional location map of the proposed project.

The Village 2 project is included within a land use planning document known as the Otay Ranch General Development Plan/Sub-regional Plan (Otay Ranch GDP). The County of San Diego and City of Chula Vista jointly prepared and adopted the Otay Ranch GDP. The Village 2 SPA Amendment project is located within what is defined as the Otay River Parcel of the Otay Ranch GDP. The project is a part of the designated 14 villages and five planning areas within the Otay Ranch GDP area. The Otay Ranch Village 2 SPA Amendment Project current development plan approval is dependent on the City's eventual adoption of their entitlement application.

The Chula Vista City Council and the San Diego County Board of Supervisors adopted the Otay Ranch GDP on October 28, 1993, which was accompanied by a Program Environmental Impact Report EIR-90-01 (SCH #89010154).

The approximately 23,000 acre Otay Ranch is a master-planned community that includes a broad range of residential, commercial, retail, and industrial development interwoven with civic and community uses, such as libraries, parks, and schools, together with an open space preserve system consisting of approximately 11,375 acres.

The Baldwin and Sons proposed development concept for the Village 2 SPA Amendment project is planned as changes to a variety of land uses as shown in Table 1.

Table 1
Otay Ranch Village 2 SPA Proposed Land Uses

Location	Land Use Description	Existing Approved	Proposed with SPA Amendment
Village 2	Single Family Residential	414 units	604 units
Village 2	Multi-Family Residential	2,567 units	3,941 units
Village 2	Mixed Use/Commercial	23.9 ac	23.9 ac
Village 2	Industrial	60.7 ac	92.9 ac
Village 2	Park	55.8 ac	63.6 ac
Village 2	CPF	6.5 ac	13.6 ac
Village 2	School	10.3 ac	19.8 ac
Village 2	Open Space/Circulation	200.2 ac	200.2 ac
TOTAL		2,981 units	4,545 units

The comprehensive SPA Amendment for Village 2 proposes to add 1,564 residential units, an elementary school, park, and CPF sites to the currently approved land plan. The project is located along the south side of Olympic Parkway, west of La Media Road. Refer to Appendix B for the proposed development plan of the Village 2 SPA Amendment project.

The City has identified discretionary actions and/or permit approval requirements for the Village 2 SPA Amendment project. The projected potable and recycled water demands and resulting water supply requirements associated with the Village 2 SPA Amendment project have considered the discretionary actions and/or permit approvals and are incorporated into and used in this WSA&V Report. The water demands for the proposed Village 2 SPA Amendment project are provided in Section 5 – Historical and Projected Water Demands.

Section 4 – Otay Water District

The Otay WD is a municipal water district formed in 1956 pursuant to the Municipal Water District Act of 1911 (Water Code §§ 71000 et seq.). The Otay WD joined the Water Authority as a member agency in 1956 to acquire the right to purchase and distribute imported water throughout its service area. The Water Authority is an agency responsible for the wholesale supply of water to its 24 public agency members in San Diego County.

The Otay WD currently relies on the Water Authority for 100 percent of its treated potable water supply. The Water Authority is the agency responsible for the supply of imported water into San Diego County through its membership in MWD. The Water Authority currently

obtains the vast majority of its imported supply from MWD, but is in the process of diversifying its available supplies.

The Otay WD provides water service to residential, commercial, industrial, and agricultural customers, and for environmental and fire protection uses. In addition to providing water throughout its service area, Otay WD also provides sewage collection and treatment services to a portion of its service area known as the Jamacha Basin. The Otay WD also owns and operates the Ralph W. Chapman Water Reclamation Facility (RWCWRF) which has an effective treatment capacity of 1.2 million gallons per day (MGD) or about 1,300 acre-feet per year (ac-ft/yr) to produce recycled water. On May 18, 2007 an additional source of recycled water supply, at least 6 MGD or about 6,720 ac-ft/yr, became available to Otay WD from the City of San Diego's South Bay Water Reclamation Plant (SBWRP).

The Otay WD jurisdictional area is generally located within the south central portion of San Diego County and includes approximately 125 square miles. The Otay WD serves portions of the unincorporated communities of southern El Cajon, La Mesa, Rancho San Diego, Jamul, Spring Valley, Bonita, and Otay Mesa, the eastern portion of the City of Chula Vista and a portion of the City of San Diego on Otay Mesa. The Otay WD jurisdiction boundaries are roughly bounded on the north by the Padre Dam Municipal Water District, on the northwest by the Helix Water District, and on the west by the South Bay Irrigation District (Sweetwater Authority) and the City of San Diego. The southern boundary of Otay WD is the international border with Mexico.

The planning area addressed in the Otay WD 2010 Water Resources Master Plan Update and the Otay WD 2010 Urban Water Management Plan (2010 UWMP) includes the land within the jurisdictional boundary of the Otay WD and those areas outside of the present Otay WD boundaries considered to be in the Area of Influence of the Otay WD. Figure 2-1 contained within the Otay WD 2010 WRMP shows the jurisdictional boundary of the Otay WD and the Area of Influence. The planning area is approximately 143 square miles, of which approximately 125 square miles are within the Otay WD current boundaries and approximately 18 square miles are in the Area of Influence. The area east of Otay WD is rural and currently not within any water purveyor jurisdiction and potentially could be served by the Otay WD in the future if the need for imported water becomes necessary, as is the case for the Area of Influence.

The City of Chula Vista, the City of San Diego, and the County of San Diego are the three land use planning agencies within the Otay WD jurisdiction. Data on forecasts for land use planning, demographics, economic projections, population, and the future rate of growth within Otay WD were obtained from the San Diego Association of Governments (SANDAG). SANDAG serves as the regional, intergovernmental planning agency that develops and provides forecast information through the year 2050. Population growth within the Otay WD service area is expected to increase from the 2010 figure of approximately 198,616 to an estimated 284,997 by 2035. Land use information used to develop water demand projections are based upon Specific or Sectional Planning Areas, the Otay Ranch General Development

Plan/Sub-regional Plan, East Otay Mesa Specific Plan Area, San Diego County Community Plans, and City of San Diego Otay Mesa Community Plan, City of Chula Vista, and County of San Diego General Plans.

The Otay WD long-term historic growth rate has been approximately 4 percent. The growth rate has significantly slowed due to the current economic conditions and it is expected to slow as the inventory of developable land is diminished.

Climatic conditions within the Otay WD service area are characteristically Mediterranean near the coast, with mild temperatures year round. Inland areas are both hotter in summer and cooler in winter, with summer temperatures often exceeding 90 degrees and winter temperatures occasionally dipping to below freezing. Most of the region's rainfall occurs during the months of December through March. Average annual rainfall is approximately 12.17 inches per year.

Historic climate data were obtained from the Western Regional Climate Center for Station 042706 (El Cajon). This station was selected because its annual temperature variation is representative of most of the Otay WD service area. While there is a station in the City of Chula Vista, the temperature variation at the City of Chula Vista station is more typical of a coastal environment than the conditions in most of the Otay WD service area.

4.1 Urban Water Management Plan

In accordance with the California Urban Water Management Planning Act and recent legislation, the Otay Water District Board of Directors adopted an UWMP in June 2011 and subsequently submitted the plan to the California Department of Water Resources (DWR). As required by law, the Otay Water District 2010 UWMP includes projected water supplies required to meet future demands through 2035. In accordance with Water Code Section 10910 (c)(2) and Government Code Section 66473.7 (c)(3), information from the Otay Water District 2010 UWMP along with supplemental information from the Otay Water District WRMP Update have been utilized to prepare this WSA Report and are incorporated herein by reference.

The state Legislature passed Senate Bill 7 as part of the Seventh Extraordinary Session (SBX 7-7) on November 10, 2009, which became effective February 3, 2010. This new law was the water conservation component to the Delta legislation package and seeks to achieve a 20 percent statewide reduction in urban per capita water use in California by December 31, 2020. Specifically, SBX 7-7 from this Extraordinary Session requires each urban retail water supplier to develop urban water use targets to help meet the 20 percent reduction goal by 2020 (20x2020), and an interim water reduction target by 2015.

The SBX 7-7 target setting process includes the following: (1) baseline daily per capita water use; (2) urban water use target; (3) interim water use target; (4) compliance daily per capita water use, including technical bases and supporting data for those determinations. In order

for an agency to meet its 2020 water use target, each agency can increase its use of recycled water to offset potable water use and also step up its water conservation measures. The required water use targets for 2020 and an interim target for 2015 are determined using one of four target methods – each method has numerous methodologies. The 2020 urban water use target may be updated in a supplier’s 2015 UWMP.

In 2015, urban retail water suppliers will be required to report interim compliance followed by actual compliance in 2020. Interim compliance is halfway between the baseline water use and 2020 target. Baseline, target, and compliance-year water use estimates are required to be reported in gallons per capita per day (gpcd).

Failure to meet adopted targets will result in the ineligibility of a water supplier to receive grants or loans administered by the State unless one (1) of two (2) exceptions is met. Exception one (1) states a water supplier may be eligible if they have submitted a schedule, financing plan, and budget to DWR for approval to achieve the per capita water use reductions. Exception two (2) states a water supplier may be eligible if an entire water service area qualifies as a disadvantaged community.

Otay WD has adopted Method 1 to set its 2015 interim and 2020 water use targets. Method 1 requires setting the 2020 water use target to 80 percent of baseline per capita water use target as provided in the State’s Draft 20x2020 Water Conservation Plan. The Otay WD 2015 target is 171 gpcd and the 2020 gpcd target at 80 percent of baseline is 152 gpcd.

The Otay WD’s recent per capita water use has been declining to the point where current water use already meets the 2020 target for Method 1. This recent decline in per capita water use is largely due to drought water use restrictions, increased water costs, and poor economic conditions. However, Otay WD’s effective water use awareness campaign and enhanced conservation mentality of its customers will likely result in some long-term carryover of these reduced consumption rates beyond the current drought period.

Section 5 – Historical and Projected Water Demands

The projected demands for Otay WD are based on Specific or Sectional Planning Areas, the Otay Ranch General Development Plan/Sub-regional Plan, the East Otay Mesa Specific Plan Area, San Diego County Community Plans, and City of San Diego Otay Mesa Community Plan, City of Chula Vista and County of San Diego General Plans. This land use information is also used by SANDAG as the basis for its most recent forecast data. This land use information is utilized in the preparation of the Otay WD 2010 WRMP (updated November, 2010), and the Otay WD 2010 UWMP to develop the forecasted demands and supply requirements.

In 1994, the Water Authority selected the Institute for Water Resources-Municipal and Industrial Needs (MAIN) computer model to forecast municipal and industrial water use for the San Diego region. The MAIN model uses demographic and economic data to project sector-level water demands (i.e., residential and non-residential demands). This econometric model has over a quarter of a century of practical application and is used by many cities and water agencies throughout the United States. The Water Authority's version of the MAIN model was modified to reflect the San Diego region's unique parameters and is known as CWA-MAIN.

The foundation of the water demand forecast is the underlying demographic and economic projections. This was a primary reason, why, in 1992 the Water Authority and SANDAG entered into a Memorandum of Agreement (MOA), in which the Water Authority agreed to use the SANDAG current regional growth forecast for water supply planning purposes. In addition, the MOA recognizes that water supply reliability must be a component of San Diego County's regional growth management strategy required by Proposition C, as passed by the San Diego County voters in 1988. The MOA ensures a strong linkage between local general plan land use forecasts and water demand projections and resulting supply needs for the San Diego region.

Consistent with the previous CWA-MAIN modeling efforts, on February 26, 2010, the SANDAG Board of Directors accepted the Series 12: 2050 Regional Growth Forecast. The 2050 Regional Growth Forecast will be used by SANDAG as the foundation for the next Regional Comprehensive Plan update. SANDAG forecasts also are used by local governments for planning, including the San Diego County Water Authority 2010 Urban Water Management Plan update.

The municipal and industrial forecast also included an updated accounting of projected conservation savings based on projected regional implementation of the California Urban Water Conservation Council (CUWCC) Best Management Practices and SANDAG demographic information for the period 2010 through 2035. These savings estimates were then factored into the baseline municipal and industrial demand forecast.

A separate agricultural model, also used in prior modeling efforts, was used to forecast agricultural water demands within the Water Authority service area. This model estimates agricultural demand to be met by the Water Authority's member agencies based on agricultural acreage projections provided by SANDAG, crop distribution data derived from the Department of Water Resources and the California Avocado Commission, and average crop-type watering requirements based on California Irrigation Management Information System data.

The Water Authority and MWD update their water demand and supply projections within their jurisdictions utilizing the SANDAG most recent growth forecast to project future water demands. This provides for the important strong link between demand and supply projections to the land use plans of the cities and the county. This provides for consistency between the

retail and wholesale agencies water demand projections, thereby ensuring that adequate supplies are and will be planned for the Otay WD existing and future water users. Existing land use plans, any revisions to land use plans, and annexations are captured in the SANDAG updated forecasts. The Water Authority and MWD will update their demand forecasts based on the SANDAG most recent forecast approximately every five years to coincide with preparation of their urban water management plans. Prior to the next forecast update, local jurisdictions may require water supply assessment and/or verification reports consistent with Senate Bills 610 and 221 for proposed land use developments that either have pending or proposed annexations into the Otay WD, Water Authority, and MWD or that have revised land use plans than originally anticipated. The Water Authority and MWD next forecast and supply planning documents would then capture any increase or decrease in demands caused by annexations or revised land use plans.

In evaluating the availability of sufficient water supply, the Village 2 SPA Amendment project proponents are required to participate in the development of alternative water supply project(s). This can be achieved through payment of the New Water Supply Fee adopted by the Otay WD Board in May 2010. These water supply projects are in addition to those identified as sustainable supplies in the current Water Authority and MWD UWMP, IRP, Master Plans, and other planning documents. These new water supply projects are in response to the regional water supply issues related to climatological, environmental, legal, and other challenges that impact water source supply conditions, such as the court rulings regarding the Sacramento-San Joaquin Delta and the current ongoing western states drought conditions. These new additional water supply projects are not currently developed and are in various stages of the planning process. A few examples of these alternative water supply projects include the Middle Sweetwater River Basin Groundwater Well project, the North District Recycled Water Supply Concept, the Rosarito Ocean Desalination Facility project, and the Rancho del Rey Groundwater Well project. The Water Authority and MWD next forecast and supply planning documents would capture any increase in water supplies resulting from any new water resources developed by the Otay WD.

In addition, MWD's 2010 RUWMP identified potential reserve supplies in the supply capability analysis (Tables 2-9, 2-10, and 2-11), which could be available to meet any unanticipated demands. The Water Authority and MWD's next forecast and supply planning documents would capture any increase in necessary supply resources resulting from any new water supply resources.

The Otay WD water demand projection methodology utilizes a component land use approach. This is done by applying representative values of water use to the acreage of each land use type and then aggregating these individual land use demand projections into an overall total demand for Otay WD. This is called the water duty method, and the water duty is the amount of water used in acre-feet per acre per year. This approach is used for all the land use types except residential development where a demand per dwelling unit was applied. In addition, commercial and industrial water use categories are further subdivided by type including separate categories for golf courses, schools, jails, prisons, hospitals, etc. where specific water demands are established.

To determine water duties for the various types of land use, the entire water meter database of the Otay WD is utilized and sorted by the appropriate land use types. The metered consumption records are then examined for each of the land uses, and water duties are determined for the various types of residential, commercial, industrial, and institutional land uses. For example the water duty factors for commercial and industrial land uses are estimated using 1,785 and 893 gallons per day per acre, respectively. Residential water demand is established based on the same data but computed on a per-dwelling unit basis. The focus is to ensure that for each of the residential land use categories (very low, low, medium, and high densities), the demand criteria used is adequately represented based upon actual data. This method is used because residential land uses constitute a substantial percentage of the total developable planning area of the Otay WD.

The WRMP Update calculates potable water demand by taking the gross acreage of a site and applying a potable water reduction factor (PWRF), which is intended to represent the percentage of acreage to be served by potable water and that not served by recycled water for irrigation. For industrial land use, as an example, the PWRF is 0.95 (i.e., 95% of the site is assumed to be served by potable water, 5% of the site is assumed to be irrigated with recycled water). The potable net acreage is then multiplied by the unit demand factor corresponding to its respective land use. This approach is used in the WRMP Update for all the land use types except residential development where a demand per dwelling unit is applied. In addition, commercial and industrial water use categories are further subdivided by type including separate categories for golf courses, schools, jails, prisons, hospitals, etc. where specific water demands are allocated.

By applying the established water duties to the proposed land uses, the projected water demand for the entire Otay WD planning area at ultimate development is determined. Projected water demands for the intervening years were determined using growth rate projections consistent with data obtained from SANDAG and the experience of the Otay WD.

The historical and projected potable water demands for Otay WD are shown in Table 2.

Table 2
Historical and Projected Potable Water Fiscal Year Demands (acre-feet)

Water Use Sectors	2005	2010	2015	2020	2025	2030	2035
Single Family	21,233	17,165	23,633	28,312	33,600	37,211	40,635
Multi-Family	3,095	3,605	3,444	4,126	4,897	5,423	5,922
Commercial &	1,657	2,243	1,844	2,209	2,622	2,904	3,171
Institutional &	2,262	1,867	2,518	3,017	3,580	3,965	4,330
Landscape	6,458	3,732	10,134	12,141	14,408	15,957	17,425
Other	2,426	584	2,700	3,235	3,839	4,252	4,643
Unaccounted for	547	23	608	729	865	958	1,046
Totals	37,678	29,219	44,881	53,769	63,811	70,670	77,172

Source: Otay Water District 2010 UWMP.

The historical and projected recycled water demands for Otay WD are shown in Table 3.

Table 3
Historical and Projected Recycled Water Fiscal Year Demands (acre-feet)

Water Use Sector	2005	2010	2015	2020	2025	2030	2035
Landscape	4,090	4,000	4,400	5,000	5,800	6,800	8,000
Totals	4,090	4,000	4,400	5,000	5,800	6,800	8,000

Source: Otay Water District 2010 UWMP, Table 10.

Using the land use demand projection criteria as established in the Otay WD 2010 revision of the 2009 WRMP, the current projected potable water demand for the proposed Village 2 SPA Amendment project is shown in Table 4, totals approximately 1.46 MGD or about 1,634 ac-ft/yr. This is 529 ac-ft/yr greater than what was estimated in the November 2010 WRMP revision. An April 2013 update of the 2010 WRMP revision, that includes this additional demand, has been prepared for the Otay WD.

Table 4
Village 2 SPA Amendment Projected Potable
Water Annual Average Demands

Location (Land Use)	Quantity	Potable Water Factor	Unit Rate	Average Demand, gpd
SF Residential	604 units	100%	500 gpd/unit	302,000
MF/MU Residential	3,941 units	85%	255 gpd/unit	1,004,955
MU/C Commercial	23.9 ac	90%	1,607gpd/ac	38,396
Industrial	92.9 ac	95%	848 gpd/ac	74,840
School	19.8 ac	80%	1,428gpd/ac	28,274
CPF	13.6 ac	90%	714 gpd/ac	8,739
Total				1,457,180

The projected recycled water demand resulting from the proposed Village 2 SPA Amendment project is provided in Table 5, which totals approximately 0.50 MGD or about 560 ac-ft/yr, representing about 25% of total Village 2 SPA Amendment project demand.

Table 5
Village 2 SPA Amendment Projected Recycled
Water Average Demands

Location (Land Use)	Quantity	Recycled Water Factor	Net Recycled Acreage	Unit Rate	Average Demand, gpd
Open Space	75 ac	100%	75	2,155 gpd/ac	161,625
Parks	63.6 ac	100%	63.6	2,155 gpd/ac	137,058
Office/Commercial	23.9 ac	10%	2.39	2,155 gpd/ac	5,150
Industrial	92.9 ac	5%	4.7	2,155 gpd/ac	10,129
MF/MU Residential	3,941 units	15%		45 gpd/unit	177,345
School	19.8 ac	20%	3.96	2,155 gpd/ac	8,534
Total					499,841

5.1 Demand Management (Water Conservation)

Demand management, or water conservation is a critical part of the Otay WD 2010 UWMP and its long term strategy for meeting water supply needs of the Otay WD customers. Water conservation, is frequently the lowest cost resource available to any water agency. The goals of the Otay WD water conservation programs are to:

- Reduce the demand for more expensive, imported water.
- Demonstrate continued commitment to the Best Management Practices (BMP).
- Ensure a reliable water supply.

The Otay WD is signatory to the Memorandum of Understanding (MOU) Regarding Urban Water Conservation in California, which created the California Urban Water Conservation Council (CUWCC) in 1991 in an effort to reduce California's long-term water demands. Water conservation programs are developed and implemented on the premise that water conservation increases the water supply by reducing the demand on available supply, which is vital to the optimal utilization of a region's water supply resources. The Otay WD participates in many water conservation programs designed and typically operated on a shared cost participation program basis among the Water Authority, MWD, and their member agencies. The demands shown in Tables 2 and 3 take into account implementation of water conservation measures within Otay WD.

As one of the first signatories to the MOU Regarding Urban Water Conservation in California, Otay WD has made BMP implementation for water conservation the cornerstone of its conservation programs and a key element in its water resource management strategy. As a member of the Water Authority, Otay WD also benefits from regional programs performed on behalf of its member agencies. The BMP programs implemented by Otay WD and regional BMP programs implemented by the Water Authority that benefit all their member agencies are addressed in the Otay WD 2010 UWMP. In partnership with the Water Authority, the County of San Diego, City of San Diego, City of Chula Vista, and developers, the Otay WD water conservation efforts are expected to grow and expand. The resulting savings directly relate to additional available water in the San Diego County region for beneficial use within the Water Authority service area, including the Otay WD.

Additional conservation or water use efficiency measures or programs practiced by the Otay WD include the following:

- Supervisory Control and Data Acquisition System

The Otay WD implemented and has operated for many years a Supervisor Control and Data Acquisition (SCADA) system to control, monitor, and collect data regarding the operation of the water system. The major facilities that have SCADA capabilities are the water flow control supply sources, transmission network, pumping stations, and water storage reservoirs. The SCADA system allows for many and varied useful functions.

Some of these functions provide for operating personnel to monitor the water supply source flow rates, reservoir levels, turn on or off pumping units, etc. The SCADA system aids in the prevention of water reservoir overflow events and increases energy efficiency.

- Water Conservation Ordinance

California Water Code Sections 375 et seq. permit public entities which supply water at retail to adopt and enforce a water conservation program to reduce the quantity of water used by the people therein for the purpose of conserving water supplies of such public entity. The Otay WD Board of Directors established a comprehensive water conservation program pursuant to California Water Code Sections 375 et seq., based upon the need to conserve water supplies and to avoid or minimize the effects of any future shortage. A water shortage could exist based upon the occurrence of one or more of the following conditions:

1. A general water supply shortage due to increased demand or limited supplies.
2. Distribution or storage facilities of the Water Authority or other agencies become inadequate.
3. A major failure of the supply, storage, and distribution facilities of MWD, Water Authority, and/or Otay WD.

The Otay WD water conservation ordinance finds and determines that the conditions prevailing in the San Diego County area require that the available water resources be put to maximum beneficial use to the extent to which they are capable, and that the waste or unreasonable use, or unreasonable method of use, of water be prevented and that the conservation of such water be encouraged with a view to the maximum reasonable and beneficial use thereof in the interests of the people of the Otay WD and for the public welfare.

Otay WD is currently engaged in a number of conservation and water use efficiency activities. Listed below are the current programs that are either on-going or were recently concluded:

- Residential Water Surveys: 1,349 completed since 1994
- Large Landscape Surveys: 194 completed since 1990
- Cash for Water Smart Plants Landscape Retrofit Program: over 217,600 square feet of turf grass replaced with water wise plants since 2003
- Rotating Nozzles Rebated: 3,170
- Residential Weather-Based Irrigation Controller (WBIC) Incentive Program: 231 distributed or rebated since 2004
- Residential High Efficiency Clothes Washers: 7,187 rebates since 1994
- Residential ULFT/HET Rebate Program: 22,376 rebates provided between 1991-2010
- Outreach Efforts to Otay WD Customers - the Otay WD promotes its conservation programs through staffing outreach events, bill inserts, articles in the Otay WD's

quarterly customer Pipeline newsletter, direct mailings to Otay WD customers, the Otay WD's webpage and through the Water Authority's marketing efforts.

- School Education Programs- the Otay WD funds school tours of the Water Conservation Garden, co-funds Splash Labs, provides classroom water themed kits, maintains a library of school age appropriate water themed books, DVDs, and videos, and runs both a school poster contest and a water themed photo contest.
- Water efficiency in new construction through Cal Green and the Model Water Efficient Landscape Ordinance

Focus on Commercial/Institutional/Industrial through Promoting MWD's Save a Buck (Commercial) Program in conjunction with the Otay WD's own Commercial Process Improvement Program

As a signatory to the MOU Regarding Urban Water Conservation in California, the Otay WD is required to submit biannual reports that detail the implementation of current water conservation practices. The Otay WD voluntarily agreed to implement the fourteen water conservation Best Management Practices beginning in 1992. The Otay WD submits its report to the CUWCC every two years. The Otay WD BMP Reports for 2005 to 2010, as well as the BMP Coverage Report for 1999-2010, are included in the Otay WD 2010 UWMP.

The Village 2 SPA Amendment project will implement the CUWCC Best Management Practices for water conservation such as installation of ultra low flow toilets, development of a water conservation plan, and potential beneficial use of recycled water, all of which are typical requirements of development projects within the City of Chula Vista.

Section 6 - Existing and Projected Supplies

The Otay WD currently does not have an independent raw or potable water supply source. The Otay WD is a member public agency of the Water Authority. The Water Authority is a member public agency of MWD. The statutory relationships between the Water Authority and its member agencies, and MWD and its member agencies, respectively, establish the scope of the Otay WD entitlement to water from these two agencies.

The Water Authority through two delivery pipelines, referred to as Pipeline No. 4 and the La Mesa Sweetwater Extension Pipeline, currently supply the Otay WD with 100 percent of its potable water. The Water Authority in turn, currently purchases the majority of its water from MWD. Due to the Otay WD reliance on these two agencies, this WSA&V Report includes referenced documents that contain information on the existing and projected supplies, supply programs, and related projects of the Water Authority and MWD. The Otay WD, Water Authority, and MWD are actively pursuing programs and projects to diversify their water supply resources.

The description of local recycled water supplies available to the Otay WD is also discussed below.

6.1 MWD Water District of Southern California 2010 Regional Urban Water Management Plan

In November 2010, MWD adopted its 2010 Regional Urban Water Management Plan (RUWMP). The 2010 RUWMP provides MWD's member agencies, retail water utilities, cities, and counties within its service area with, among other things, a detailed evaluation of the supplies necessary to meet future demands, and an evaluation of reasonable and practical efficient water uses, recycling, and conservation activities. During the preparation of the 2010 RUWMP, MWD also utilized the current SANDAG regional growth forecast in calculating regional water demands for the Water Authority service area.

6.1.1 Availability of Sufficient Supplies and Plans for Acquiring Additional Supplies

MWD is a wholesale supplier of water to its member public agencies and obtains its supplies from two primary sources: the Colorado River, via the Colorado River Aqueduct (CRA), which it owns and operates, and Northern California, via the State Water Project (SWP). The 2010 RUWMP documents the availability of these existing supplies and additional supplies necessary to meet future demands.

6.1.1.1 MWD Supplies

MWD's Integrated Resources Plan (IRP) identifies a mix of resources (imported and local) that, when implemented, will provide 100 percent reliability for full-service demands through the attainment of regional targets set for conservation, local supplies, State Water Project supplies, Colorado River supplies, groundwater banking, and water transfers. The 2010 update to the IRP (2010 IRP Update) includes a planning buffer supply intended to mitigate against the risks associated with implementation of local and imported supply programs. The planning buffer identifies an additional increment of water that could potentially be developed if other supplies are not implemented as planned. As part of implementation of the planning buffer, MWD periodically evaluates supply development to ensure that the region is not under or over-developing supplies. Managed properly, the planning buffer will help ensure that the southern California region, including San Diego County, will have adequate supplies to meet future demands.

In November 2010, MWD adopted its 2010 RUWMP in accordance with state law. The resource targets included in the preceding 2010 IRP Update serve as the foundation for the planning assumptions used in the 2010 RUWMP. MWD's 2010 RUWMP contains a water supply reliability assessment that includes a detailed evaluation of the supplies necessary to meet demands over a 25-year period in average, single-dry year, and multiple-dry year

periods. As part of this process, MWD also uses the current SANDAG regional growth forecast in calculating regional water demands for the Water Authority's service area.

As stated in MWD's 2010 RUWMP, that plan may be used as a source document for meeting the requirements of SB 610 and SB 221 until the next scheduled update is completed in 2015. The 2005 RUWMP includes a "Justifications for Supply Projections" in Appendix A.3, that provides detailed documentation of the planning, legal, financial, and regulatory basis for including each source of supply in the plan. A copy of MWD's 2010 RUWMP can be found on the World Wide Web at the following site address:

http://www.mwdh2o.com/mwdh2o/pages/yourwater/RUWMP/RUWMP_2010.pdf

Water supply agencies throughout California continue to face climatological, environmental, legal, and other challenges that impact water source supply conditions, such as the court rulings regarding the Sacramento-San Joaquin Delta and the current western states drought conditions. Challenges such as these essentially always will be present. The regional water supply agencies, the Water Authority and MWD, along with Otay WD nevertheless fully intend to have sufficient, reliable supplies to serve demands.

6.1.2 MWD Capital Investment Plan

As part of MWD's annual budget approval process, a Capital Investment Plan is prepared. The cost, purpose, justification, status, progress, etc. of MWD's infrastructure projects to deliver existing and future supplies are documented in the Capital Investment Plan. The financing of these projects is addressed as part of the annual budget approval process.

MWD's Capital Investment Plan includes a series of projects identified from MWD studies of projected water needs, which, when considered along with operational demands on aging facilities and new water quality regulations, identify the capital projects needed to maintain infrastructure reliability and water quality standards, improve efficiency, and provide future cost savings. All projects within the Capital Investment Plan are evaluated against an objective set of criteria to ensure they are aligned with the MWD's goals of supply reliability and quality.

6.2 San Diego County Water Authority Regional Water Supplies

The Water Authority has adopted plans and is taking specific actions to develop adequate water supplies to help meet existing and future water demands within the San Diego region. This section contains details on the supplies being developed by the Water Authority. A summary of recent actions pertaining to development of these supplies includes:

- In accordance with the Urban Water Management Planning Act, the Water Authority adopted their 2010 UWMP in June 2011. The updated Water Authority 2010 UWMP identifies a diverse mix of local and imported water supplies to meet future demands. A copy of the updated Water Authority 2010 UWMP can be found on the internet at <http://www.sdewa.org/2010-urban-water-management-plan>
- Deliveries of conserved agricultural water from the Imperial Irrigation District (IID) to San Diego County have increased annually since 2003, with 70,000 ac-ft of deliveries in Fiscal Year (FY) 2010. These quantities will increase annually to 200,000 ac-ft/yr by 2021, and then remain fixed for the duration of the transfer agreement.
- As part of the October 2003 Quantification Settlement Agreement (QSA), the Water Authority was assigned MWD's rights to 77,700 ac-ft/yr of conserved water from the All-American Canal (AAC) and Coachella Canal (CC) lining projects. Deliveries of this conserved water from the CC reached the region in 2007 and deliveries from the AAC reached the region in 2010. Expected supplies from the canal lining projects are considered verifiable Water Authority supplies.

Through implementation of the Water Authority and member agency planned supply projects, along with reliable imported water supplies from MWD, the region anticipates having adequate supplies to meet existing and future water demands.

To ensure sufficient supplies to meet projected growth in the San Diego region, the Water Authority uses the SANDAG most recent regional growth forecast in calculating regional water demands. The SANDAG regional growth forecast is based on the plans and policies of the land-use jurisdictions with San Diego County. The existing and future demands of the member agencies are included in the Water Authority's projections.

6.2.1 Availability of Sufficient Supplies and Plans for Acquiring Additional Supplies

The Water Authority currently obtains imported supplies from MWD, conserved water from the AAC and CC lining projects, and an increasing amount of conserved agricultural water from IID. Of the twenty-seven member agencies that purchase water supplies from MWD, the Water Authority is MWD's largest customer.

Section 135 of MWD's Act defines the preferential right to water for each of its member agencies. As calculated by MWD, the Water Authority's preferential right as of December 11, 2012 is 17.22 percent of MWD's supply, while the Water Authority accounted for approximately 25 percent of MWD's total revenue. Under preferential rights, MWD could allocate water without regard to historic water purchases or dependence on MWD. The Water Authority and its member agencies are taking measures to reduce dependence on MWD through development of additional supplies and a water supply portfolio that would not be

jeopardized by a preferential rights allocation. MWD has stated, consistent with Section 4202 of its Administrative Code that it is prepared to provide the Water Authority's service area with adequate supplies of water to meet expanding and increasing needs in the years ahead. When and as additional water resources are required to meet increasing needs, MWD stated it will be prepared to deliver such supplies. In Section ES-5 of their 2010 RUWMP, MWD states that MWD has supply capacities that would be sufficient to meet expected demands from 2015 through 2035. MWD has plans for supply implementation and continued development of a diversified resource mix including programs in the Colorado River Aqueduct, State Water Project, Central Valley Transfers, local resource projects, and in-region storage that enables the region to meet its water supply needs.

The Water Authority has made large investments in MWD's facilities and will continue to include imported supplies from MWD in the future resource mix. As discussed in the Water Authority's 2010 UWMP, the Water Authority and its member agencies are planning to diversify the San Diego regions supply portfolio and reduce purchases from MWD.

As part of the Water Authority's diversification efforts, the Water Authority is now taking delivery of conserved agricultural water from IID and water saved from the AAC and CC lining projects. The CC lining project is complete and the Water Authority has essentially completed construction of the AAC lining project. Table 6 summarizes the Water Authority's supply sources with detailed information included in the sections to follow. Deliveries from MWD are also included in Table 6, which is further discussed in Section 6.1 above. The Water Authority's member agencies provided the verifiable local supply targets for groundwater, groundwater recovery, recycled water, and surface water, which are discussed in more detail in Section 5 of the Water Authority's 2010 UWMP.

Table 6
Projected Verifiable Water Supplies – Water Authority Service Area
 Normal Year (acre-feet)

Water Supply Sources	2015	2020	2025	2030	2035
Water Authority Supplies					
MWD Supplies	358,189	230,601	259,694	293,239	323,838
Water Authority/IID Transfer	100,000	190,000	200,000	200,000	200,000
AAC and CC Lining Projects	80,200	80,200	80,200	80,200	80,200
Proposed Regional Seawater Desalination (1)	0	56,000	56,000	56,000	56,000
Member Agency Supplies					
Surface Water	48,206	47,940	47,878	47,542	47,289
Water Recycling	38,660	43,728	46,603	48,278	49,998
Groundwater	11,710	11,100	12,100	12,840	12,840
Groundwater Recovery	10,320	15,520	15,520	15,520	15,520
Total Projected Supplies	647,285	675,089	717,995	753,619	785,685

Source: Water Authority 2010 Urban Water Management Plan – Table 9-1.

Note 1: On November 29, 2012, the Water Authority approved a water purchase agreement with Poseidon for 48,000 AFY with the right to purchase up to 56,000 AFY

Note 2: The Water Authority’s 2010 UWMP includes water associated with accelerated forecasted development including Village 2 and the 529 AFY additional demand.

Section 5 of the Water Authority’s 2010 UWMP also includes a discussion on the local supply target for seawater desalination. Seawater desalination supplies represent a significant future local resource in the Water Authority’s service area.

The Carlsbad Desalination Project (Project) is a fully-permitted seawater desalination plant and conveyance pipeline designed to provide a highly reliable local supply of up to 56,000 acre-feet (AF) per year for the region. In 2020, the Project would account for approximately 8% of the total projected regional supply and 30% of all locally generated water in San Diego County. If the project becomes operational in 2016, it will more than double the amount of local supplies developed in the region since 1991. The desalination plant itself will be fully financed, built, and operated by Poseidon. The Water Authority will purchase water from the plant under a water purchase agreement. The new pipeline connecting the desalination plant with the Water Authority’s Second Aqueduct will be owned and operated by the Water Authority, but responsibility for design and construction will reside with Poseidon through a separate Design-Build Agreement. The Water Authority will be responsible for aqueduct improvements, including the relining and rehabilitation of Pipeline 3 to accept desalinated water under higher operating pressures, modifications to the San Marcos Vent that allows the flow of water between Pipelines 3 and 4, and improvements at the Twin Oaks Valley Water Treatment Plant necessary to integrate desalinated water into the Water Authority’s system for optimal distribution to member agencies.

On July 22, 2010, the Board approved a Term Sheet between the Water Authority and Poseidon Resources that outlined the key terms and conditions that would be detailed and incorporated in a comprehensive Water Purchase Agreement (WPA). Beginning in October 2011 and under the direction of the Board's Carlsbad Desalination Project Advisory Group, staff began developing and negotiating with Poseidon a WPA consistent with the July 22, 2010 Board approved Term Sheet. The July 2010 Term Sheet also identified specific conditions precedent to Board consideration of the WPA. On November 29, 2012, the Water Authority Board adopted a resolution approving the Water Purchase Agreement (WPA).

The Water Authority's existing and planned supplies from the IID transfer and canal lining projects are considered "drought-proof" supplies and should be available at the yields shown in Table 6 in normal water year supply and demand assessment. Single-dry year and multiple-dry year scenarios are discussed in more detail in Section 9 of the Water Authority's 2010 UWMP.

As part of preparation of a written water supply assessment and/or verification report, an agency's shortage contingency analysis should be considered in determining sufficiency of supply. Section 11 of the Water Authority's 2010 UWMP contains a detailed shortage contingency analysis that addresses a regional catastrophic shortage situation and drought management. The analysis demonstrates that the Water Authority and its member agencies, through the Emergency Response Plan, Emergency Storage Project, and Drought Management Plan (DMP) are taking actions to prepare for and appropriately handle an interruption of water supplies. The DMP, adopted in May 2006, provides the Water Authority and its member agencies with a series of potential actions to take when faced with a shortage of imported water supplies from MWD due to prolonged drought or other supply shortfall conditions. The actions will help the region avoid or minimize the impacts of shortages and ensure an equitable allocation of supplies throughout the San Diego region.

6.2.1.1 Water Authority-Imperial Irrigation District Water Conservation and Transfer Agreement

The QSA was signed in October 2003, and resolves long-standing disputes regarding priority and use of Colorado River water and creates a baseline for implementing water transfers. With approval of the QSA, the Water Authority and IID were able to implement their Water Conservation and Transfer Agreement. This agreement not only provides reliability for the San Diego region, but also assists California in reducing its use of Colorado River water to its legal allocation.

On April 29, 1998, the Water Authority signed a historic agreement with IID for the long-term transfer of conserved Colorado River water to San Diego County. The Water Authority-IID Water Conservation and Transfer Agreement (Transfer Agreement) is the largest agriculture-to-urban water transfer in United States history. Colorado River water will be conserved by Imperial Valley farmers who voluntarily participate in the program and then transferred to the Water Authority for use in San Diego County.

Implementation Status

On October 10, 2003, the Water Authority and IID executed an amendment to the original 1998 Transfer Agreement. This amendment modified certain aspects of the 1998 Agreement to be consistent with the terms and conditions of the QSA and related agreements. It also modified other aspects of the agreement to lessen the environmental impacts of the transfer of conserved water. The amendment was expressly contingent on the approval and implementation of the QSA, which was also executed on October 10, 2003.

On November 5, 2003, IID filed a complaint in Imperial County Superior Court seeking validation of 13 contracts associated with the Transfer Agreement and the QSA. Imperial County and various private parties filed additional suits in Superior Court, alleging violations of the California Environmental Quality Act (CEQA), the California Water Code, and other laws related to the approval of the QSA, the water transfer, and related agreements. The lawsuits were coordinated for trial. The IID, Coachella Valley Water District, MWD, the Water Authority, and state are defending these suits and coordinating to seek validation of the contracts. In January 2010, a California Superior Court judge ruled that the QSA and 11 related agreements were invalid, because one of the agreements created an open-ended financial obligation for the state, in violation of California's constitution. The QSA parties appealed this decision and are continuing to seek validation of the contracts. The appeal is currently pending in the Third District Court of Appeal. A stay of the trial court judgment has been issued during the appeal. Implementation of the transfer provisions is proceeding during litigation.

Expected Supply

Deliveries into San Diego County from the transfer began in 2003 with an initial transfer of 10,000 acre-feet per year. The Water Authority received increasing amounts of transfer water each year, according to a water delivery schedule contained in the transfer agreement. In 2012, the Water Authority will receive 90,000 acre-feet per year. The quantities will increase annually to 200,000 acre-feet per year by 2021 then remain fixed for the duration of the transfer agreement. The initial term of the Transfer Agreement is 45 years, with a provision that either agency may extend the agreement for an additional 30-year term.

During dry years, when water availability is low, the conserved water will be transferred under the IID Colorado River rights, which are among the most senior in the Lower Colorado River Basin. Without the protection of these rights, the Water Authority could suffer delivery cutbacks. In recognition for the value of such reliability, the 1998 contract required the Water Authority to pay a premium on transfer water under defined regional shortage circumstances. The shortage premium period duration is the period of consecutive days during which any of the following exist: 1) a Water Authority shortage; 2) a shortage condition for the Lower Colorado River as declared by the Secretary; and 3) a Critical Year. Under terms of the October 2003 amendment, the shortage premium will not be included in the cost formula until Agreement Year 16.

Transportation

The Water Authority entered into a water exchange agreement with MWD on October 10, 2003, to transport the Water Authority-IID transfer water from the Colorado River to San Diego County. Under the exchange agreement, MWD will take delivery of the transfer water through its Colorado River Aqueduct. In exchange, MWD will deliver to the Water Authority a like quantity and quality of water. The Water Authority will pay MWD's applicable wheeling rate for each acre-foot of exchange water delivered. According to the water exchange agreement, MWD will make delivery of the transfer water for 35 years, unless the Water Authority elects to extend the agreement another 10 years for a total of 45 years.

Cost/Financing

The costs associated with the transfer are financed through the Water Authority's rates and charges. In the agreement between the Water Authority and IID, the price for the transfer water started at \$258 per acre-foot and increased by a set amount for the first seven years. In December 2009, the Water Authority and IID executed a fifth amendment to the water transfer agreement that sets the price per acre-foot for transfer water for calendar years 2010 through 2015, beginning at \$405 per acre-foot in 2010 and increasing to \$624 per acre-foot in 2015. For calendar years 2016 through 2034, the unit price will be adjusted using an agreed-upon index. The amendment also required the Water Authority to pay IID \$6 million at the end of calendar year 2009 and another \$50 million on or before October 1, 2010, provided that a transfer stoppage is not in effect as a result of a court order in the QSA coordinated cases. Beginning in 2035, either the Water Authority or IID can, if certain criteria are met, elect a market rate price through a formula described in the water transfer agreement.

The October 2003 exchange agreement between MWD and the Water Authority set the initial cost to transport the conserved water at \$253 per acre-foot. Thereafter, the price is set to be equal to the charge or charges set by MWD's Board of Directors pursuant to applicable laws and regulation, and generally applicable to the conveyance of water by MWD on behalf of its member agencies. The transportation charge in 2010 was \$314 per acre-foot.

The Water Authority is providing \$10 million to help offset potential socioeconomic impacts associated with temporary land fallowing. IID will credit the Water Authority for these funds during years 16 through 45. In 2007, the Water Authority prepaid IID an additional \$10 million for future deliveries of water. IID will credit the Water Authority for this up-front payment during years 16 through 30.

As part of implementation of the QSA and water transfer, the Water Authority also entered into an environmental cost sharing agreement. Under this agreement the Water Authority is contributing a total of \$64 million to fund environmental mitigation projects and the Salton Sea Restoration Fund.

Written Contracts or Other Proof

The supply and costs associated with the transfer are based primarily on the following documents:

Agreement for Transfer of Conserved Water by and between IID and the Water Authority (April 29, 1998). This Agreement provides for a market-based transaction in which the Water Authority would pay IID a unit price for agricultural water conserved by IID and transferred to the Water Authority.

Revised Fourth Amendment to Agreement between IID and the Water Authority for Transfer of Conserved Water (October 10, 2003). Consistent with the executed Quantification Settlement Agreement (QSA) and related agreements, the amendments restructure the agreement and modify it to minimize the environmental impacts of the transfer of conserved water to the Water Authority.

Amended and Restated Agreement between MWD and Water Authority for the Exchange of Water (October 10, 2003). This agreement was executed pursuant to the QSA and provides for delivery of the transfer water to the Water Authority.

Environmental Cost Sharing, Funding, and Habitat Conservation Plan Development Agreement among IID, Coachella Valley Water District (CVWD), and Water Authority (October 10, 2003). This Agreement provides for the specified allocation of QSA-related environmental review, mitigation, and litigation costs for the term of the QSA, and for development of a Habitat Conservation Plan.

Quantification Settlement Agreement Joint Powers Authority Creation and Funding Agreement (October 10, 2003). The purpose of this agreement is to create and fund the QSA Joint Powers Authority and to establish the limits of the funding obligation of CVWD, IID, and Water Authority for environmental mitigation and Salton Sea restoration pursuant to SB 654 (Machado).

Fifth Amendment to Agreement between Imperial Irrigation District and San Diego County Water Authority for Transfer of Conserved Water (December 21, 2009). This agreement implements a settlement between the Water Authority and IID regarding the base contract price of transferred water.

Federal, State, and Local Permits/Approvals

Federal Endangered Species Act Permit. The U.S. Fish and Wildlife Service (USFWS) issued a Biological Opinion on January 12, 2001, that provides incidental take authorization and certain measures required to offset species impacts on the Colorado River regarding such actions.

State Water Resources Control Board (SWRCB) Petition. SWRCB adopted Water Rights Order 2002-0016 concerning IID and Water Authority's amended joint petition for approval of a long-term transfer of conserved water from IID to the Water Authority and to change the point of diversion, place of use, and purpose of use under Permit 7643.

Environmental Impact Report (EIR) for Conservation and Transfer Agreement. As lead agency, IID certified the Final EIR for the Conservation and Transfer Agreement on June 28, 2002.

U. S. Fish and Wildlife Service Draft Biological Opinion and Incidental Take Statement on the Bureau of Reclamation's Voluntary Fish and Wildlife Conservation Measures and Associated Conservation Agreements with the California Water Agencies (12/18/02). The U. S. Fish and Wildlife Service issued the biological opinion/incidental take statement for water transfer activities involving the Bureau of Reclamation and associated with IID/other California water agencies' actions on listed species in the Imperial Valley and Salton Sea (per the June 28, 2002 EIR).

Addendum to EIR for Conservation and Transfer Agreement. IID as lead agency and Water Authority as responsible agency approved addendum to EIR in October 2003.

Environmental Impact Statement (EIS) for Conservation and Transfer Agreement. Bureau of Reclamation issued a Record of Decision on the EIS in October 2003.

CA Department of Fish and Game California Endangered Species Act Incidental Take Permit #2081-2003-024-006). The California Department of Fish and Game issued this permit (10/22/04) for potential take effects on state-listed/fully protected species associated with IID/other California water agencies' actions on listed species in the Imperial Valley and Salton Sea (per the June 28, 2002 EIR).

California Endangered Species Act (CESA) Permit. A CESA permit was issued by California Department of Fish and Game (CDFG) on April 4, 2005, providing incidental take authorization for potential species impacts on the Colorado River.

6.2.1.2 All-American Canal and Coachella Canal Lining Projects

As part of the QSA and related contracts, the Water Authority was assigned MWD's rights to 77,700 ac-ft/yr of conserved water from projects that will line the All-American Canal (AAC) and Coachella Canal (CC). The projects will reduce the loss of water that currently occurs through seepage, and the conserved water will be delivered to the Water Authority. This conserved water will provide the San Diego region with an additional 8.5 million acre-feet over the 110-year life of the agreement.

Implementation Status

The CC lining project began in November 2004 and was completed in 2006. Deliveries of conserved water to the Water Authority began in 2007. The project constructed a 37-mile parallel canal adjacent to the CC. The AAC lining project was begun in 2005 and was completed in 2010. The lining project constructed a concrete-lined canal parallel to 24 miles of the existing AAC from Pilot Knob to Drop 3.

In July 2005, a lawsuit (*CDEM v United States*, Case No. CV-S-05-0870-KJD-PAL) was filed in the U. S. District Court for the District of Nevada on behalf of U.S. and Mexican groups challenging the lining of the AAC. The lawsuit, which names the Secretary of the Interior as a defendant, claims that seepage water from the canal belongs to water users in Mexico. California water agencies note that the seepage water is actually part of California's Colorado River allocation and not part of Mexico's allocation. The plaintiffs also allege a failure by the United States to comply with environmental laws. Federal officials have stated that they intend to vigorously defend the case.

Expected Supply

The AAC lining project makes 67,700 acre-feet of Colorado River water per year available for allocation to the Water Authority and San Luis Rey Indian water rights settlement parties. The CC lining project makes 26,000 acre-feet of Colorado River water each year available for allocation. The 2003 Allocation Agreement provides for 16,000 acre-feet per year of conserved canal lining water to be allocated to the San Luis Rey Indian Water Rights Settlement Parties. The remaining amount, 77,700 acre-feet per year, is to be available to the Water Authority, with up to an additional 4,850 acre-feet per year available to the Water Authority depending on environmental requirements from the CC lining project. For planning purposes, the Water Authority assumes that 2,500 acre-feet of the 4,850 acre-feet will be available each year for delivery, for a total of 80,200 acre-feet per year of that supply. According to the Allocation Agreement, IID has call rights to a portion (5,000 acre-feet per year) of the conserved water upon termination of the QSA for the remainder of the 110 years of the Allocation Agreement and upon satisfying certain conditions. The term of the QSA is for up to 75 years.

Transportation

The October 10, 2003, Exchange Agreement between the Water Authority and MWD also provides for the delivery of the conserved water from the canal lining projects. The Water Authority will pay MWD's applicable wheeling rate for each acre-foot of exchange water delivered. In the Agreement, MWD will deliver the canal lining water for the term of the Allocation Agreement (110 years).

Cost/Financing

Under California Water Code Section 12560 et seq., the Water Authority received \$200 million in state funds for construction of the canal lining projects. In addition, \$20 million was made available from Proposition 50 and \$36 million from Proposition 84. The Water Authority was responsible for additional expenses above the funds provided by the state.

The rate to be paid to transport the canal lining water will be equal to the charge or charges set by MWD's Board of Directors pursuant to applicable law and regulation and generally applicable to the conveyance of water by MWD on behalf of its member agencies.

In accordance with the Allocation Agreement, the Water Authority will also be responsible for a portion of the net additional Operation, Maintenance, and Repair (OM&R) costs for the lined canals. Any costs associated with the lining projects as proposed, are to be financed through the Water Authority's rates and charges.

Written Contracts or Other Proof

The expected supply and costs associated with the lining projects are based primarily on the following documents:

U.S. Public Law 100-675 (1988). Authorized the Department of the Interior to reduce seepage from the existing earthen AAC and CC. The law provides that conserved water will be made available to specified California contracting water agencies according to established priorities.

California Department of Water Resources - MWD Funding Agreement (2001). Reimburse MWD for project work necessary to construct the lining of the CC in an amount not to exceed \$74 million. Modified by First Amendment (2004) to replace MWD with the Authority. Modified by Second Amendment (2004) to increase funding amount to \$83.65 million, with addition of funds from Proposition 50.

California Department of Water Resources - IID Funding Agreement (2001). Reimburse IID for project work necessary to construct a lined AAC in an amount not to exceed \$126 million.

MWD - CVWD Assignment and Delegation of Design Obligations Agreement (2002). Assigns design of the CC lining project to CVWD.

MWD - CVWD Financial Arrangements Agreement for Design Obligations (2002). Obligates MWD to advance funds to CVWD to cover costs for CC lining project design and CVWD to invoice MWD to permit the Department of Water Resources to be billed for work completed.

Allocation Agreement among the United States of America, The MWD Water District of Southern California, Coachella Valley Water District, Imperial Irrigation District, San Diego County Water Authority, the La Jolla, Pala, Pauma, Rincon, and San Pasqual Bands of Mission

Indians, the San Luis Rey River Indian Water Authority, the City of Escondido, and Vista Irrigation District (October 10, 2003). This agreement includes assignment of MWD's rights and interest in delivery of 77,700 acre-feet of Colorado River water previously intended to be delivered to MWD to the Water Authority. Allocates water from the AAC and CC lining projects for at least 110 years to the Water Authority, the San Luis Rey Indian Water Rights Settlement Parties, and IID, if it exercises its call rights.

Amended and Restated Agreement between MWD and Water Authority for the Exchange of Water (October 10, 2003). This agreement was executed pursuant to the QSA and provides for delivery of the conserved canal lining water to the Water Authority.

Agreement between MWD and Water Authority regarding Assignment of Agreements related to the AAC and CC Lining Projects. This agreement was executed in April 2004 and assigns MWD's rights to the Water Authority for agreements that had been executed to facilitate funding and construction of the AAC and CC lining projects.

Assignment and Delegation of Construction Obligations for the Coachella Canal Lining Project under the Department of Water Resources Funding Agreement No. 4600001474 from the San Diego County Water Authority to the Coachella Valley Water District, dated September 8, 2004.

Agreement Regarding the Financial Arrangements between the San Diego County Water Authority and Coachella Valley Water District for the Construction Obligations for the Coachella Canal Lining Project, dated September 8, 2004.

Agreement No. 04-XX-30-W0429 among the United States Bureau of Reclamation, the Coachella Valley Water District, and the San Diego County Water Authority for the Construction of the Coachella Canal Lining Project Pursuant to Title II of Public Law 100-675, dated October 19, 2004.

California Water Code Section 12560 et seq. This Water Code Section provides for \$200 million to be appropriated to the Department of Water Resources to help fund the canal lining projects in furtherance of implementing California's Colorado River Water Use Plan.

California Water Code Section 79567. This Water Code Section identifies \$20 million as available for appropriation by the California Legislature from the Water Security, Clean Drinking Water, Coastal, and Beach Protection Fund of 2002 (Proposition 50) to DWR for grants for canal lining and related projects necessary to reduce Colorado River water use. According to the Allocation Agreement, it is the intention of the agencies that those funds will be available for use by the Water Authority, IID, or CVWD for the AAC and CC lining projects.

California Public Resources Code Section 75050(b)(1). This section identifies up to \$36 million as available for water conservation projects that implement the Allocation Agreement as defined in the Quantification Settlement Agreement.

Federal, State, and Local Permits/Approvals

AAC Lining Project Final EIS/EIR (March 1994). A final EIR/EIS analyzing the potential impacts of lining the AAC was completed by the Bureau of Reclamation (Reclamation) in March 1994. A Record of Decision was signed by Reclamation in July 1994, implementing the preferred alternative for lining the AAC. A re-examination and analysis of these environmental compliance documents by Reclamation in November 1999 determined that these documents continued to meet the requirements of the NEPA and the CEQA and would be valid in the future.

CC Lining Project Final EIS/EIR (April 2001). The final EIR/EIS for the CC lining project was completed in 2001. Reclamation signed the Record of Decision in April 2002. An amended Record of Decision has also been signed to take into account revisions to the project description.

Mitigation, Monitoring, and Reporting Program for Coachella Canal Lining Project, SCH #1990020408; prepared by Coachella Valley Water District, May 16, 2001.

Environmental Commitment Plan for the Coachella Canal Lining Project, approved by the US Bureau of Reclamation (Boulder City, NV) on March 4, 2003.

Environmental Commitment Plan and Addendum to the All-American Canal Lining Project EIS/EIR California State Clearinghouse Number SCH 90010472 (June 2004, prepared by IID).

Addendum to Final EIS/EIR and Amendment to Environmental Commitment Plan for the All-American Canal Lining Project (approved June 27, 2006, by IID Board of Directors).

6.2.1.3 Carlsbad Seawater Desalination Project

Development of seawater desalination in San Diego County will assist the region in diversifying its water resources, reduce dependence on imported supplies, and provide a new drought-proof, locally treated water supply. The Carlsbad Desalination Project is a fully-permitted seawater desalination plant and conveyance pipeline currently being developed by Poseidon, a private investor-owned company that develops water and wastewater infrastructure. The project, located at the Encina Power Station in Carlsbad, has been in development since 1998 and was incorporated into the Water Authority's 2003 Water Facilities Master Plan and the 2010 UWMP. The Carlsbad Desalination Project has obtained all required permits and environmental clearances and, when completed, will provide a highly reliable local supply of 48,000 to 56,000 acre-feet per year for the region.

Implementation Status

The Project has obtained all required permits and environmental clearances, including the following:

- National Pollutant Discharge Elimination System (NPDES) Discharge Permit (Regional Water Quality Control Board)
- Conditional Drinking Water Permit (California Department of Health Services)
- State Lands Commission Lease (State Lands Commission)
- Coastal Development Permit (California Coastal Commission)

IDE Technologies, a worldwide leader in the design, construction, and operation of desalination plants, was selected by Poseidon to be the desalination process contractor for the Project.

On July 22, 2010, the Board approved a Term Sheet between the Water Authority and Poseidon Resources that outlined the key terms and conditions that would be detailed and incorporated in a comprehensive Water Purchase Agreement (WPA). Beginning in October 2011 and under the direction of the Board's Carlsbad Desalination Project Advisory Group, staff began developing and negotiating with Poseidon a WPA consistent with the July 22, 2010 Board approved Term Sheet. The July 2010 Term Sheet also identified specific conditions precedent to Board consideration of the WPA.

On November 29, 2012, the Water Authority Board adopted a resolution approving the Design-Build Agreement between the Water Authority and Poseidon. The Design-Build Agreement establishes the commercial and technical terms for implementation of the desalination product pipeline improvements. These improvements consist of an approximate 10-mile long, 54-inch diameter conveyance pipeline connecting the Desalination Plant to the Water Authority's Second Aqueduct. The pipeline will generally be constructed within improved streets in commercial and industrial areas in the cities of Carlsbad, Vista, and San Marcos. The Water Authority will own the Project Water Pipeline Improvements upon execution of the Design-Build Agreement, and upon completion and acceptance of construction, the Water Authority will assume operational control of all pipeline improvements.

Expected Supply

When completed, the Project will provide a highly reliable local supply of 48,000 to 56,000 acre-feet per year of supply for the region, available in both normal and dry hydrologic conditions. In 2020, the Project would account for approximately 8% of the total projected regional supply and 30% of all locally generated water in San Diego County. When the project becomes operational in 2016, it will more than double the amount of local supplies developed in the region since 1991.

Transportation

On November 29, 2012, the Water Authority Board adopted a resolution approving the Design-Build Agreement between the Water Authority and Poseidon. The Design-Build Agreement establishes the commercial and technical terms for implementation of the

desalination product pipeline improvements. These improvements consist of an approximate 10-mile long, 54-inch diameter conveyance pipeline connecting the Desalination Plant to the Water Authority's Second Aqueduct. The pipeline will generally be constructed within improved streets in commercial and industrial areas in the cities of Carlsbad, Vista, and San Marcos. The Water Authority will own the Project Water Pipeline Improvements upon execution of the Design-Build Agreement, and upon completion and acceptance of construction, the Water Authority will assume operational control of all pipeline improvements.

The Water Authority will be responsible for aqueduct improvements, including the relining and rehabilitation of Pipeline 3 to accept desalinated water under higher operating pressures, modifications to the San Marcos Vent that allows the flow of water between Pipelines 3 and 4, and improvements at the Twin Oaks Valley Water Treatment Plant necessary to integrate desalinated water into the Water Authority's system for optimal distribution to member agencies.

Cost/Financing

The plant and the offsite pipeline will be financed through tax exempt government bonds issued for the Water Authority by the California Pollution Control Financing Authority (CPCFA). On November 29, 2012, the Water Authority Board adopted a resolution approving agreements to accomplish tax exempt project financing through the CPCFA.

A preliminary September 2012 unit cost estimate was \$2,300/AF. The Water Authority's water purchase costs would be financed through Water Authority rates and charges. Poseidon is financing the capital cost of the Project with a combination of private equity and tax-exempt Private Activity Bonds.

Written Contracts or Other Proof

The expected supply and costs associated with the Carlsbad Desalination Project are based primarily on the following documents:

Development Agreement between City of Carlsbad and Poseidon (October 2009). A Development Agreement between Carlsbad and Poseidon was executed on October 5, 2009

Agreement of Term Sheet between the Water Authority and Poseidon Resources (July 2010). The Water Authority approved the Term Sheet at its July 2010 Board Meeting. The Term Sheet outlines the terms and conditions of a future Water Purchase Agreement with Poseidon and allocates the resources to prepare the draft Water Purchase Agreement.

Federal, State, and Local Permits/Approvals

Carlsbad Desalination Project Final EIR

The City of Carlsbad, acting as lead agency for Carlsbad Seawater Desalination Plant and appurtenant facilities proposed by Poseidon (the “Project”) prepared an Environmental Impact Report for the Project in compliance with the California Environmental Quality Act (“CEQA”), which the City of Carlsbad certified on June 13, 2006.

<http://www.sdcwa.org/rwfmp-peir>

The City of Carlsbad prepared an Addendum to the Carlsbad EIR (“Addendum”) which was adopted on September 15, 2009, and reflects minor and immaterial design modifications to the Project site plan, appurtenant facilities, and water delivery pipeline network.

The environmental documents and permits are found at the following link:

<http://www.carlsbad-desal.com/EIR.asp>

The Water Authority, as a Responsible Agency under CEQA, adopted a resolution on November 29, 2012 approving a Second Addendum to the Carlsbad Precise Development Plan and Desalination Plant Final EIR and First Addendum that evaluates the environmental impacts of several proposed facility modifications that are necessary to allow for operational flexibility and efficiency in receiving and delivering desalination product water. These modifications include: a realignment of a portion of the approved desalination pipeline, the addition of chemical injection at the approved San Marcos Aqueduct Connection site, the relining of a portion of Pipeline 3, the addition of a pipeline and expanded flow control facility at Twin Oaks Valley Water Treatment Plant and a replacement of the San Marcos Vent on Pipeline 4. Impacts associated with the proposed modifications would not result in a new significant impact or substantial increase in the severity of impacts previously evaluated in the Carlsbad FEIR or the First Addendum. There are no substantial changes to the circumstances under which the project will be undertaken, and no new information of substantial importance that was not known and could not have been known when the FEIR was certified and the First Addendum was approved, and that have since been identified. Therefore, the Second Addendum satisfies the CEQA requirements for the proposed project modifications.

Regional Water Facilities Master Plan EIR

On November 20, 2003, the Water Authority Board of Directors adopted Resolution No. 2003-34 certifying the Final Program Environmental Impact Report (State Clearinghouse No. 2003021052) for the Water Authority’s Regional Water Facilities Master Plan Project (the “Master Plan EIR”), which evaluated, among other things, potential growth inducing impacts associated with new water supplies to the region including, but not limited to, up to 150 million gallons per day (“MGD”) of new supplies from seawater desalination. This certification included a 50 MGD plant located in the City of Carlsbad.

The environmental documents and permits are found at the following link:

<http://www.sdcwa.org/rwfmp-peir>

Sub regional Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP)

On December 8, 2010, the Board adopted Resolution No. 2010-18 certifying a Final environmental Impact Report/Environmental Impact Statement for the San Diego County Water Authority Subregional Natural Community Conservation Plan/Habitat Conservation Plan (State Clearinghouse No. 2003121012) (the “Habitat Conservation Plan EIR/EIS”), which Plan was implemented on December 28, 201.

The environmental documents and permits are found at the following link:

<http://www.sdcwa.org/nccp-hcp>

Twin Oaks Valley Water Treatment Plant EIR

On September 8, 2005, the Board adopted Resolution No. 2005-31 certifying a Final Environmental Impact Report for the Twin Oaks Valley Water Treatment Plant Project (State Clearinghouse No. 20040071034) (the “Twin Oaks EIR”), which project was constructed as a 100 MGD submerged membrane water treatment facility, including treated water holding tanks and distribution pipelines and other facilities, consistent with the conditions and mitigation measures included in the Twin Oaks EIR.

<http://www.sdcwa.org/twin-oaks-valley-treatment-plant-final-eir>

2010 Urban Water Management Plan

<http://www.sdcwa.org/2010-urban-water-management-plan>

Drinking Water Permit (October 2006). The California Department of Health Services approved the Conditional Drinking Water Permit on October 19, 2006.

Coastal Development Permit

The Project is fully permitted, with the California Coastal Commission issuing the following permits: Coastal Development Permit No. E-06-013, Energy Minimization and Greenhouse Gas Reduction Plan (December 2008), Marine Life Mitigation Plan (December 2008), Erosion Control Plan (November 2009), Landscaping Plan (September 2009), Lighting Plan (August 2009), Construction Plan (September 2009), and Water Pollution Control Plan (September 2009); the California Department of Public Health issuing Conceptual Approval Letter dated October 19, 2006; the California Regional Water Quality Control Board issuing NPDES Permit No. CA0109223 and Notice of Intent to Discharge for Storm Water Associated with Construction Activities (WDID #9 37C361181); the City of Carlsbad issuing Redevelopment Permit RP 05-12(A), Specific Plan 144 with Amendment 144(J) SP 144(J), Habitat Management Plan Permit Amendment HMP 05-08(A), Precise Development Plan PDP 00-02(B), Mitigation Monitoring and Reporting Program for EIR 03-05(A), Development Agreement DA 05-01(A), Standard Urban Storm Water Mitigation Program (September 2009), and Coastal Development Permit 04-41; the State of California State Lands Commission issuing an Amendment of Lease PRC 8727.1 (August 2008).

The environmental documents and permits are found at the following link:

<http://www.sdcwa.org/carlsbad-desalination-project-approved-permits-and-plans>

State Lands Commission Lease Application (Amendment of Lease PRC 8727.1 August 2008). Amends lease of land by Cabrillo Power I LLC (Cabrillo) from the State Lands Commission for the lands where the project will be constructed. Cabrillo and Poseidon entered into agreement on July 1, 2003, authorizing Poseidon to use those lands to construct the project.

6.2.2 Water Authority Capital Improvement Program and Financial Information

The Water Authority's Capital Improvement Program (CIP) can trace its beginnings to a report approved by the Board in 1989 entitled, The Water Distribution Plan, and a Capital Improvement Program through the Year 2010. The Water Distribution Plan included ten projects designed to increase the capacity of the aqueduct system, increase the yield from existing water treatment plants, obtain additional supplies from MWD, and increase the reliability and flexibility of the aqueduct system. Since that time the Water Authority has made numerous additions to the list of projects included in its CIP as the region's infrastructure needs and water supply outlook have changed.

The current list of projects included in the CIP is based on the results of planning studies, including the 2005 UWMP and the 2002 Regional Water Facilities Master Plan. These CIP projects, which are most recently described in the Water Authority's Adopted Multi-Year Budget, include projects valued at \$3.50 billion. These CIP projects are designed to meet projected water supply and delivery needs of the member agencies through 2035. The projects include a mix of new facilities that will add capacity to existing conveyance, storage, and treatment facilities, as well as repair and replace aging infrastructure:

- Asset Management – The primary components of the asset management projects include relining and replacing existing pipelines and updating and replacing metering facilities.
- New Facilities – These projects will expand the capacity of the aqueduct system, complete the projects required under the Quantification Settlement Agreement (QSA), and evaluate new supply opportunities.
- Emergency Storage Project – Projects remaining to be completed under the ongoing ESP include the San Vicente Dam Raise, the Lake Hodges projects, and a new pump station to extend ESP supplies to the northern reaches of the Water Authority service area.
- Other Projects – This category includes out-of-region groundwater storage, increased local water treatment plant capacity, and projects that mitigate environmental impacts of the CIP.

The Water Authority Board of Directors is provided a semi-annual and annual report on the status of development of the CIP projects. As described in the Water Authority's biennial budget, a combination of long and short term debt and cash (pay-as-you-go) will provide

funding for capital improvements. Additional information is included in the Water Authority's biennial budget, which also contains selected financial information and summarizes the Water Authority's investment policy.

6.3 Otay Water District

The Otay WD 2010 Water Resources Master Plan Update and the 2010 Urban Water Management Plan contain comparisons of projected supply and demands through the year 2035. Projected potable water resources to meet planned demands as documented were planned to be supplied entirely with imported water received from the Water Authority. Recycled water resources to meet projected demands are planned to be supplied from local wastewater treatment plants. The Otay WD currently has no local supply of raw water, potable water, or groundwater resources.

The development and/or acquisition of potential groundwater, recycled water market expansion, and seawater desalination supplies by the Otay WD have evolved and are planned to occur in response to the regional water supply issues. These water supply projects are in addition to those identified as sustainable supplies in the current Water Authority and MWD UWMP, IRP, Master Plans, and other planning documents. These new additional water supply projects are not currently developed and are in various stages of the planning process. These local and regional water supply projects will allow for less reliance upon imported water and are considered a new water supply resource for the Otay WD.

The Otay WD expansion of the market areas for the use of recycled water within the watersheds upstream of the Sweetwater Reservoir, Otay Mesa, and the Lower Otay Reservoir will increase recycled water use and thus require less dependence on imported water for irrigation purposes.

The supply forecasts contained within this WSA&V Report do consider development and/or acquisition of potential groundwater, recycled water market expansion, and seawater desalination supplies by the Otay WD.

6.3.1 Availability of Sufficient Supplies and Plans for Acquiring Additional Supplies

The availability of sufficient potable water supplies and plans for acquiring additional potable water supplies to serve existing and future demands of the Otay WD is founded upon the preceding discussions regarding MWD's and the Water Authority's water supply resources and water supplies to be acquired by the Otay WD. Historic imported water deliveries from the Water Authority to Otay WD and recycled water deliveries from the Otay WD Ralph W. Chapman Water Reclamation Facility (RWCWRF) are shown in Table 7. Since the year 2000 through mid May 2007, recycled water demand has exceeded the recycled water supply capability typically in the summer months. The RWCWRF is limited to a maximum production of about 1,300 ac-ft/yr. The recycled water supply shortfall had been met by

supplementing with potable water into the recycled water storage system as needed by adding potable water supplied by the Water Authority. On May 18, 2007 an additional source of recycled water supply from the City of San Diego’s South Bay Water Reclamation Plant (SBWRP) became available. The supply of recycled water from the SBWRP is a result of essentially completing construction and commencement of operations of the transmission, storage, and pump station systems necessary to link the SBWRP recycled water supply source to the existing Otay WD recycled water system.

Table 7
Historic Imported and Local Water Supplies
Otay Water District

Calendar Year	Imported Water (acre-feet)	Recycled Water (acre-feet)	Total (acre-feet)
1980	12,558	0	12,558
1985	14,529	0	14,529
1990	23,200	0	23,200
1995	20,922	614	21,536
2000	29,901	948	30,849
2005	37,678	1,227	38,905
2010	29,219	4,090	33,270
2011	30,777	3,776	34,553
2012	31,268	4,155	35,423

Source: Otay Water District operational records.

6.3.1.1 Imported and Regional Supplies

The availability of sufficient imported and regional potable water supplies to serve existing and planned uses within Otay WD is demonstrated in the above discussion on MWD and the Water Authority’s water supply reliability. The County Water Authority Act, Section 5 subdivision 11, states that the Water Authority “as far as practicable, shall provide each of its member agencies with adequate supplies of water to meet their expanding and increasing needs.” The Water Authority provides between 75 to 95 percent of the total supplies used by its 24 member agencies, depending on local weather and supply conditions. In calendar year 2010 the supply to Otay WD was 29,270 ac-ft of supply from the Water Authority. An additional 4,090 ac-ft of recycled water comes from the City of San Diego and from the District’s Ralph W. Chapman Water Reclamation Facility. The demand for potable water within the Otay WD is expected to increase to about 77,177 ac-ft by 2035 as per the Otay WD 2010 UWMP.

Potable Water System Facilities

The Otay WD continues to pursue diversification of its water supply resources to increase reliability and flexibility. The Otay WD also continues to plan, design, and construct potable water system facilities to obtain these supplies and to distribute potable water to meet customer demands. The Otay WD has successfully negotiated two water supply diversification agreements that enhance reliability and flexibility, which are briefly described as follows.

- The Otay WD entered into an agreement with the City of San Diego, known as the Otay Water Treatment Plant (WTP) Agreement. The Otay WTP Agreement provides for raw water purchase from the Water Authority and treatment by the City of San Diego at their Otay WTP for delivery to Otay WD. The supply system link to implement the Otay WTP Agreement to access the regions raw water supply system and the local water treatment plant became fully operational in August 2005. This supply link consists of the typical storage, transmission, pumping, flow measurement, and appurtenances to receive and transport the treated water to the Otay WD system. The City of San Diego obligation to supply 10 MGD of treated water under the Otay WTP Agreement is contingent upon there being available 10 MGD of surplus treatment capacity in the Otay WTP until such time as Otay WD pays the City of San Diego to expand the Otay WTP to meet the Otay WD future needs. In the event that the City of San Diego's surplus is projected to be less than 10 MGD the City of San Diego will consider and not unreasonably refuse the expansion of the Otay WTP to meet the Otay WD future needs. The Otay WTP existing rated capacity is 40 MGD with an actual effective capacity of approximately 34 MGD. The City of San Diego's typical demand for treated water from the Otay WTP is approximately 20 MGD. It is at the City of San Diego's discretion to utilize either imported raw water delivered by the Water Authority Pipeline No. 3 or local water stored in Lower Otay Reservoir for treatment to supply the Otay WD demand.
- The Otay WD entered into an agreement with the Water Authority, known as the East County Regional Treated Water Improvement Program (ECRTWIP Agreement). The ECRTWIP Agreement provides for transmission of raw water to the Helix WD R. M. Levy WTP for treatment and delivery to Otay WD. The supply system link to implement the ECRTWIP Agreement is complete allowing access to the regions raw water supply system and the local water treatment plant. This supply link consists of the typical transmission, pumping, storage, flow control, and appurtenances to receive and transport the potable water from the R. M. Levy WTP to Otay WD. The Otay WD is required to take a minimum of 10,000 ac-ft/yr of treated water from the R.M. Levy WTP supplied from the regions raw water system.

Cost and Financing

The capital improvement costs associated with water supply and delivery are financed through the Otay WD water meter capacity fee, New Water Supply Fee, and user rate

structures. The Otay WD potable water sales revenue are used to pay for the wholesale cost of the treated water supply and the operating and maintenance expenses of the potable water system facilities.

Written Agreements, Contracts, or Other Proof

The supply and cost associated with deliveries of treated water from the Otay WTP and the R.M. Levy WTP is based on the following documents.

Agreement for the Purchase of Treated Water from the Otay Water Treatment Plant between the City of San Diego and the Otay Water District. The Otay WD entered into an agreement dated January 11, 1999 with the City of San Diego that provides for 10 MGD of surplus treated water to the Otay WD from the existing Otay WTP capacity. The agreement allows for the purchase of treated water on an as available basis from the Otay WTP. The Otay WD pays the Water Authority at the prevailing raw water rate for raw water and pays the City of San Diego at a rate equal to the actual cost of treatment to potable water standards.

Agreement between the San Diego County Water Authority and Otay Water District Regarding Implementation of the East County Regional Treated Water Improvement Program. The ECRTWIP Agreement requires the purchase of at least 10,000 ac-ft per year of potable water from the Helix WD R.M. Levy WTP at the prevailing Water Authority treated water rate. The ECRTWIP Agreement is dated April 27, 2006.

Agreement between the San Diego County Water Authority and Otay Water District for Design, Construction, Operation, and Maintenance of the Otay 14 Flow Control Facility Modification. The Otay WD entered into the Otay 14 Flow Control Facility Modification Agreement dated January 24, 2007 with the Water Authority to increase the physical capacity of the Otay 14 Flow Control Facility. The Water Authority and Otay WD to 50% share the capital cost to expand its capacity from 8 MGD to 16 MGD.

Federal, State, and Local Permits/Approvals

The Otay WD acquired all the permits for the construction of the pipeline and pump station associated with the Otay WTP supply source and for the 640-1 and 640-2 water storage reservoirs project associated with the ECRTWIP Agreement through the typical planning, environmental approval, design, and construction processes.

The transmission main project constructed about 26,000 feet of a 36-inch diameter steel pipeline from the Otay 14 Flow Control Facility to the 640-1 and 640-2 Reservoirs project. The Otay 14 Flow Control Facility modification increased the capacity of the existing systems from 8 MGD to 16 MGD. CEQA documentation is complete for both projects. Construction of both of these projects was completed October 2010.

The City of San Diego and the Helix Water District are required to meet all applicable federal, state, and local health and water quality requirements for the potable water produced at the Otay WTP and the R.M. Levy WTP respectively.

6.3.1.2 Recycled Water Supplies

Wastewater collection, treatment, and disposal services provided by the Otay WD is limited to a relatively small area within what is known as the Jamacha Basin, located within the Middle Sweetwater River Basin watershed upstream of the Sweetwater Reservoir and downstream of Loveland Reservoir. Water recycling is defined as the treatment and disinfection of municipal wastewater to provide a water supply suitable for non-potable reuse. The Otay WD owns and operates the Ralph W. Chapman Water Reclamation Facility, which produces recycled water treated to a tertiary level for landscape irrigation purposes. The recycled water market area of the Otay WD is located primarily within the eastern area of the City of Chula Vista and on the Otay Mesa. The Otay WD distributes recycled water to a substantial market area that includes but is not limited to the U.S. Olympic Training Center, the Eastlake Golf Course, and other development projects.

The Otay WD projects that annual average demands for recycled water will increase to 8,000 acre-feet per year by 2035. About 1,300 acre-feet per year of supply is generated by the RWCWRF, with the remainder planned to be supplied to Otay WD by the City of San Diego's SBWRP.

North District Recycled Water Concept

The Otay WD is a recognized leader in the use of recycled water for irrigation and other commercial uses. The Otay WD continues the quest to investigate all viable opportunities to expand the successful recycled water program into areas that are not currently served. One of these areas is in the portion of the service area designated as the North District, located within the Middle Sweetwater River Basin watershed upstream of the Sweetwater River. The close proximity of the recycled water markets in the North District to the Otay WD's source of recycled water, the RWCWRF, means that the distribution system to serve this area could be constructed relatively cost effectively. This makes the North District a logical location for the expansion of the Otay WD's recycled water system and market area.

The purpose of the North District Recycled Water System Development Project, Phase I Concept Study, is to identify the feasibility of using recycled water in the North District and to investigate and assess any limitations or constraints to its use. The Phase I study components of the North District Recycled Water Concept encompassed the preparation of six technical memorandums including the project definition, a discussion of the regulatory process, a discussion of the protection of the watershed that would be affected by recycled water use in the North District, identification of stakeholders, public outreach, and an implementation plan.

Several opportunities that could be realized with the implementation of the use of recycled water in the North District were identified. These include a reduction of demand on the potable water system and maximizing recycled water resources which in turn minimizes treated wastewater discharges to the local ocean outfall. Other opportunities are a possible partnership with Sweetwater Authority to monitor any benefits and impacts of increased recycled water use in the watershed and stakeholder outreach to resolve any water quality concerns and to retain consumer confidence. Also identified were two major constraints associated with the North District Recycled Water System Development Project. One constraint is the water quality objectives for the Middle Sweetwater Basin that will affect the effluent limitations for the recycled water produced at the RWCWRF. At this time, the effluent limit that is of concern is total nitrogen. An examination as to how the treatment process might be modified to enhance nitrogen removal and an action plan is being developed. The other major constraint is the cost of the infrastructure needed to convey and store recycled water in the North District. These costs are estimated to be in the range of \$14 to \$15 million dollars.

There are two additional phases proposed for the North District Recycled Water System Development Project. Phase II would include further investigation of the issues identified in Phase I as requiring further study. These include stakeholder outreach, regulatory issues, and facility planning. The third phase of the effort would include the facility planning, permitting, environmental compliance, design, and construction of the improvements necessary for delivery of recycled water to the North District markets.

The estimated amount of imported water saved at full implementation of the North District Recycled Water System Development Project is 1,200 ac-ft/yr. This saved imported water could then be used to offset new potable water demands.

Recycled Water System Facilities

The Otay WD has and continues to construct recycled water storage, pumping, transmission, and distribution facilities to meet projected recycled water market demands. For nearly 20 years, millions of dollars of capital improvements have been constructed. The supply link consisting of a transmission main, storage reservoir, and a pump station to receive and transport the recycled water from the City of San Diego's SBWRP are complete and recycled water deliveries began on May 18, 2007.

Cost and Financing

The capital improvement costs associated with the recycled water supply and distribution systems are financed through the Otay WD water meter capacity fee and user rate structures. The Otay WD recycled water sales revenue, along with MWD and the Water Authority's recycled water sales incentive programs are used to help offset the costs for the wholesale purchase and production of the recycled water supply, the operating and maintenance expenses, and the capital costs of the recycled water system facilities.

Written Agreements, Contracts, or Other Proof

The supply and cost associated with deliveries of recycled water from the SBWRP is based on the following document.

Agreement between the Otay Water District and the City of San Diego for Purchase of Reclaimed Water from the South Bay Water Reclamation Plant. The agreement provides for the purchase of at least 6,721 ac-ft per year of recycled water from the SBWRP at an initial price of \$350 per acre-foot. The Otay WD Board of Directors approved the final agreement on June 4, 2003 and the San Diego City Council approved the final agreement on October 20, 2003.

Federal, State, and Local Permits/Approvals

The Otay WD has in place an agreement with MWD for their recycled water sales incentive program for supplies from the RWCWRF and the SBWRP. Also, the Otay WD has in place an agreement with the Water Authority for their recycled water sales incentive program for supplies from the RWCWRF and the SBWRP. The Water Authority sales incentive agreement was approved by Water Authority on July 26, 2007 and by Otay WD on August 1, 2007. All permits for the construction of the recycled water facilities to receive, store, and pump the SBWRP supply have been acquired through the typical planning, environmental approval, design, and construction processes.

The California Regional Water Quality Control Board San Diego Region (RWQCB) “Master Reclamation Permit for Otay Water District Ralph W. Chapman Reclamation Facility” was adopted on May 9, 2007 (Order No. R9-2007-0038). This order establishes master reclamation requirements for the production, distribution, and use of recycled water in the Otay WD service area. The order includes the use of tertiary treated water produced and received from the City of San Diego’s SBWRP. Recycled water received from and produced by the SBWRP is regulated by Regional Board Order No. 2000-203 and addenda. The City of San Diego is required to meet all applicable federal, state, and local health and water quality requirements for the recycled water produced at the SBWRP and delivered to Otay WD in conformance with Order No. 2000-203.

6.3.1.3 Potential Groundwater Supplies

The Otay WD 2010 UWMP, the 2009 WRMP Update, and the Otay WD March 2007 Integrated Water Resources Plan (2007 IRP) both contain a description of the development of potential groundwater supplies. Over the past several years, Otay WD has studied numerous potential groundwater supply options that have shown, through groundwater monitoring well activities, poor quality water and/or insufficient yield from the basins at a cost effective level. The Otay WD has a few capital improvement program projects to continue the quest to develop potential groundwater resources. Local Otay WD groundwater supply development is currently considered as a viable water supply resource to meet projected demands.

The development and/or acquisition of potential groundwater supply projects by the Otay WD have evolved and have been resurrected in response to the regional water supply issues related to water source supply conditions. Local ground water supply projects will allow for less reliance upon imported water, achieve a level of independence of the regional wholesale water agencies, and diversify the Otay WD's water supply portfolio consistent the Otay WD 2007 IRP.

In recognition of the need to develop sufficient alternative water supplies, the Otay WD has taken the appropriate next steps towards development of production groundwater well projects.

There are three groundwater well projects that the Otay WD is pursuing to develop as new local water supplies. They are known as the Middle Sweetwater River Basin Groundwater Well, the Otay Mesa Lot 7 Groundwater Well, and the Rancho del Rey Groundwater Well.

Middle Sweetwater River Basin Groundwater Well

The Middle Sweetwater River Basin Groundwater Well is an additional water supply project that was thoroughly studied and documented in the 1990s. The Middle Sweetwater River Basin is located within the Sweetwater River watershed and that reach of the river extends from Sweetwater Reservoir to the upstream Loveland Reservoir. The next step in development of the Middle Sweetwater River Basin Groundwater Well is the implementation of a pilot well project. The ultimate objective of the Otay WD is to develop a groundwater well production system within the Middle Sweetwater River Basin capable of producing a sustainable yield of potable water as a local supply.

The purpose of the Middle Sweetwater River Basin Groundwater Well Pilot project is to identify the feasibility of developing a groundwater resource production system and then determine and assess any limitations or constraints that may arise. The Middle Sweetwater River Basin Groundwater Well Pilot Project will accomplish six primary goals:

- Update project setting
- Update applicable project alternatives analysis
- Prepare groundwater well pilot project implementation plan
- Construct and test pilot monitoring and extraction wells
- Provide recommendations regarding costs and feasibility to develop a groundwater well production system within the Middle Sweetwater River Basin capable of producing a sustainable yield of potable water
- Prepare groundwater well production project implementation plan and scope of work

The groundwater conjunctive use concept is described as the extraction of the quantity of water from the groundwater basin that was placed there by customers of the Otay Water District, Helix Water District, and Padre Dam Municipal Water District by means of their use of imported treated water that contributed to the overall volume of groundwater within the

basin. An estimated quantity was developed to be approximately 12.5 percent of the total consumption of the Otay WD customers within that basin, as measured by water meters. In the 1994-1995 period, the quantity of water that was returned to the groundwater basin by Otay WD customers was estimated to be 810 acre-feet per year. Currently, that 12.5 percent quantity could be on the order of 1,000 acre-feet per year. A future scope of work will need to address this concept while considering further development of the groundwater basin as an additional supply resource. If it is deemed that a Middle Sweetwater River Basin Groundwater Well Production Project is viable then the consultant will develop and provide a groundwater well production project implementation plan, cost estimate, and related scope of work.

Further development of the groundwater basin to enhance the total groundwater production could be accomplished by the Otay WD by means of additional extraction of water from the basin that is placed there by means of either injection and/or spreading basins using imported untreated water as the resource supply. The existing La Mesa Sweetwater Extension Pipeline, owned by the Water Authority, once converted to an untreated water delivery system, could be the conveyance system to transport untreated water for groundwater recharge in support of this conjunctive use concept. These two distinct water resource supply conjunctive use concepts will be addressed so they may coexist and to allow for their development as separate phases.

The scope of work to complete Middle Sweetwater River Basin Groundwater Well Pilot Project consists of many major tasks and is to address the groundwater supply concepts outlined above. It is anticipated that the cost for the entire scope of work, will be on the order of \$2,000,000, which includes a contingency and may take up to one and a half years to complete.

The primary desired outcome of the Middle Sweetwater River Basin Groundwater Well Pilot Project is for the engineering consultant to determine and make recommendations if it is financially prudent and physically feasible to develop a Phase I groundwater well production system within the Middle Sweetwater River Basin capable of producing a sustainable yield of up to 1,500 ac-ft/yr of potable water for the Otay WD. If it is deemed that a Middle Sweetwater River Basin Groundwater Well Production Project is viable then the consultant will develop and provide a groundwater well production project implementation plan and related scope of work.

Otay Mesa Lot 7 Groundwater Well

In early 2001 the Otay WD was approached by a landowner representative about possible interest in purchasing an existing well or alternatively, acquiring groundwater supplied from the well located on Otay Mesa. The landowner, National Enterprises, Inc., reportedly stated that the well could produce 3,200 acre-feet per year with little or no treatment required prior to introducing the water into the Otay WD potable water system or alternatively, the recycled water system. In March 2001 authorization to proceed with testing of the Otay Mesa Lot 7

Groundwater Well was obtained and the Otay WD proceeded with the investigation of this potential groundwater supply opportunity.

The May 2001 Geoscience Support Services, Inc. completed for the Otay WD the preparation of a report entitled, "Otay Mesa Lot 7 Well Investigation," to assess the Otay Mesa Lot 7 Well. The scope of work included a geohydrologic evaluation of the well, analyses of the water quality samples, management and review of the well video log, and documentation of well pump testing. The primary findings, as documented in the report, formed the basis of the following recommendations:

- For the existing well to be use as a potable water supply resource, a sanitary seal must be installed in accordance with the CDPH guidelines.
- Drawdown in the well must be limited to avoid the possibility of collapsing the casing.
- Recover from drawdown from pumping is slow and extraction would need to be terminated for up to 2 days to allow for groundwater level recovery.
- The well water would need to be treated and/or blended with potable water prior to introduction into the potable water distribution system.

The existing Otay Mesa Lot 7 Well, based upon the above findings, was determined not to be a reliable municipal supply of potable water and that better water quality and quantity perhaps could be discovered deeper or at an alternative location within the San Diego Formation.

The Otay WD may still continue to pursue the Otay Mesa groundwater well opportunity with due consideration of the recommendations of the existing report. Based on the recommendations of the investigation report, a groundwater well production facility at Otay Mesa Lot 7 could realistically extract approximately 300 acre-feet per year.

Rancho del Rey Groundwater Well

In 1991, the McMillin Development Company drilled the Rancho del Rey Groundwater Well to augment grading water supplies for their Rancho del Rey development projects. Although the well was considered a "good producer," little was known regarding its water quality and sustainable yield because the water was used solely for earthwork (i.e., dust control and soil compaction). The well was drilled to 865 feet, with a finished depth of 830 feet and produced approximately 400 acre-feet per year of low quality water for four years until its use was discontinued in April 1995 when the well was no longer needed. McMillin notified the Otay WD of its intent to sell off the groundwater well asset.

In 1997, the Otay WD purchased an existing 7-inch well and the surrounding property on Rancho del Rey Parkway from the McMillin Company with the intent to develop it as a source of potable water. Treatment was required to remove salts and boron, among other constituents, using reverse osmosis membranes and ion exchange.

In 2000, having received proposals for the design and construction of a reverse osmosis treatment facility that far exceeded the allocated budget, the Board of Directors instructed staff to suspend the project until such time as it became economically viable.

In January 2010, citing the rising cost of imported water and the Otay WD's interest in securing its own water source for long-term supply reliability, the Board authorized Phase 1 for drilling and development of the Rancho del Rey Well.

On March 3, 2010, the Board adopted the Mitigated Negative Declaration for this project and a Notice of Determination was filed with the County of San Diego on March 5, 2010. In September 2010, a new 12-inch production well was drilled to a depth of 900 feet through the groundwater formation and into fractured bedrock. Testing showed the long-term yield of the new well to be 450 gpm, higher than previous studies had estimated. Separation Processes, Inc. (SPI), a highly qualified membrane treatment firm, was hired to conduct a detailed economic feasibility study to confirm that the annualized unit cost of the new water source was economically competitive with other sources. The economic study estimated the unit cost of water to be \$1,500 to \$2,000 per acre-foot for an alternative that utilizes a seawater membrane for treating both salts and boron. When compared with the current imported treated water rate from the Water Authority, and with the knowledge that this rate will continually increase as MWD and the Water Authority raise their rates, the Rancho del Rey Well project appears to be economically viable.

The Otay WD is continuing to pursue the Rancho del Rey groundwater well opportunity with due consideration of the recommendations of the existing reports and plans to develop a groundwater well production facility to extract approximately 500 acre-feet per year. For water planning purposes, production of groundwater from the Rancho del Rey well is considered “additional planned” for local supplies. During preparation of this 2010 UWMP, the Otay WD has contracted for design services for the wellhead treatment facilities.

6.3.1.4 Otay Water District Desalination Project

The Otay WD is currently investigating the feasibility of purchasing desalinated water from a seawater reverse osmosis plant that is planned to be located in Rosarito, Mexico, known as the Otay Mesa Desalinated Water Conveyance System (Desalination) project. The treatment facility is intended to be designed, constructed, and operated in Mexico by a third party. The Otay WD’s draft Desalination Feasibility Study, prepared in 2008, discusses the likely issues to be considered in terms of water treatment and monitoring, potential conveyance options within the United States from the international border to potential delivery points, and environmental, institutional, and permitting considerations for the Otay WD to import the Desalination project product water as a new local water supply resource.

While the treatment facility for the Desalination project will likely not be designed or operated by the Otay WD as the lead agency, it is important that the Otay WD maintain involvement with the planning, design, and construction of the facility to ensure that the

implemented processes provide a product water of acceptable quality for distribution and use within the Otay WD's system as well as in other regional agencies' systems that may use the product water, i.e., City of San Diego, the Water Authority, etc. A seawater reverse osmosis treatment plant removes constituents of concern from the seawater, producing a water quality that far exceeds established United States and California drinking water regulations for most parameters, however, a two-pass treatment system may be required to meet acceptable concentrations of boron and chlorides, similar to the levels seen within the existing Otay WD supply sources. The Desalination Feasibility Study addresses product water quality that is considered acceptable for public health and distribution.

The Otay WD, or any other potential participating agencies, will be required to get approval from the CDPH in order to use the desalinated seawater as a water source. Several alternative approaches are identified for getting this approval. These alternatives vary in their cost and their likelihood of meeting CDPH approval.

The Rosarito Desalination Facility Conveyance and Disinfection System Project report addresses two supply targets for the desalinated water (i.e., local and regional). The local alternative assumes that only Otay WD would participate and receive desalinated water, while the regional alternative assumes that other regional and/or local agencies would also participated in the Rosarito project.

On November 3, 2010, the Otay WD authorized the General Manager to enter into an agreement with AECOM for the engineering design, environmental documentation, and the permitting for the construction of the conveyance pipeline, pump station, and disinfection facility to be constructed within the Otay WD. The supply target is assumed to be 50 MGD while the ultimate capacity of the plant will be 100 MGD.

The Otay WD is proceeding with negotiations among the parties to establish water supply resource acquisition terms through development of a Principles of Understanding document.

6.3.2 Otay WD Capital Improvement Program

The Otay WD plans, designs, constructs, and operates water system facilities to acquire sufficient supplies and to meet projected ultimate demands placed upon the potable and recycled water systems. In addition, the Otay WD forecasts needs and plans for water supply requirements to meet projected demands at ultimate build out. The necessary water facilities and water supply projects are implemented and constructed when development activities proceed and require service to achieve timely and adequate cost effective water service.

New water facilities that are required to accommodate the forecasted growth within the entire Otay WD service area are defined and described within the Otay WD 2010 WRMP Update. These facilities are incorporated into the annual Otay WD Six Year Capital Improvement Program (CIP) for implementation when required to support development activities. As major development plans are formulated and precede through the land use jurisdictional agency

approval processes, Otay WD prepares water system requirements specifically for the proposed development project consistent with the Otay WD 2010 WRMP Update. These requirements document, define, and describe all the potable water and recycled water system facilities to be constructed to provide an acceptable and adequate level of service to the proposed land uses, as well as the financial responsibility of the facilities required for service. The Otay WD funds the facilities identified as CIP projects. Established water meter capacity fees and user rates are collected to fund the CIP project facilities. The developer funds all other required water system facilities to provide water service to their project.

Section 7 – Conclusion: Availability of Sufficient Supplies

The Village 2 SPA Amendment project is currently located within the jurisdictions of the Otay WD, Water Authority, and MWD. To obtain permanent imported water supply service, land areas are required to be within the jurisdictions of the Otay WD, Water Authority, and MWD to utilize imported water supply.

The Water Authority and MWD have an established process that ensures supplies are being planned to meet future growth. Any annexations and revisions to established land use plans are captured in the SANDAG updated forecasts for land use planning, demographics, and economic projections. SANDAG serves as the regional, intergovernmental planning agency that develops and provides forecast information. The Water Authority and MWD update their demand forecasts and supply needs based on the most recent SANDAG forecast approximately every five years to coincide with preparation of their urban water management plans. Prior to the next forecast update, local jurisdictions with land use authority may require water supply assessment and/or verification reports for proposed land developments that are not within the Otay WD, Water Authority, or MWD jurisdictions (i.e., pending or proposed annexations) or that have revised land use plans with either lower or higher development intensities than reflected in the existing growth forecasts. Proposed land areas with pending or proposed annexations, or revised land use plans, typically result in creating higher demand and supply requirements than previously anticipated. The Otay WD, Water Authority, and MWD next demand forecast and supply requirements and associated planning documents would then capture any increase or decrease in demands and required supplies as a result of annexations or revised land use planning decisions.

MWD's Integrated Resources Plan (IRP) identifies a mix of resources (imported and local) that, when implemented, will provide 100 percent reliability for full-service demands through the attainment of regional targets set for conservation, local supplies, State Water Project supplies, Colorado River supplies, groundwater banking, and water transfers. The 2010 update to the IRP includes a planning buffer supply intended to mitigate against the risks associated with implementation of local and imported supply programs and for the risk that future demands could be higher than projected. The planning buffer identifies an additional increment of water that could potentially be developed when needed and if other supplies are not fully implemented as planned. As part of implementation of the planning buffer, MWD

periodically evaluates supply development, supply conditions, and projected demands to ensure that the region is not under or over developing supplies. Managed properly, the planning buffer will help ensure that the southern California region, including San Diego County, will have adequate water supplies to meet long-term future demands.

In Section ES-5 of their 2010 RUWMP, MWD states that MWD has supply capacities that would be sufficient to meet expected demands from 2015 through 2035. MWD has plans for supply implementation and continued development of a diversified resource mix including programs in the Colorado River Aqueduct, State Water Project, Central Valley Transfers, local resource projects, and in-region storage that enables the region to meet its water supply needs. MWD's 2010 RUWMP identifies potential reserve supplies in the supply capability analysis (Tables 2-9, 2-10, and 2-11), which could be available to meet the unanticipated demands.

The County Water Authority Act, Section 5 subdivision 11, states that the Water Authority "as far as practicable, shall provide each of its member agencies with adequate supplies of water to meet their expanding and increasing needs."

As part of preparation of a written water supply assessment report, an agency's shortage contingency analysis should be considered in determining sufficiency of supply. Section 11 of the Water Authority's 2010 Updated UWMP contains a detailed shortage contingency analysis that addresses a regional catastrophic shortage situation and drought management. The analysis demonstrates that the Water Authority and its member agencies, through the Emergency Response Plan, Emergency Storage Project, Carlsbad Desalination Project, and Drought Management Plan (DMP) are taking actions to prepare for and appropriately handle an interruption of water supplies. The DMP, adopted in May 2006, provides the Water Authority and its member agencies with a series of potential actions to take when faced with a shortage of imported water supplies from MWD due to prolonged drought or other supply shortfall conditions. The actions will help the region avoid or minimize the impacts of shortages and ensure an equitable allocation of supplies.

The WSA&V Report identifies and describes the processes by which water demand projections for the proposed Village 2 SPA Amendment Project will be fully included in the water demand and supply forecasts of the Urban Water Management Plans and other water resources planning documents of the Water Authority and MWD. Water supplies necessary to serve the demands of the proposed Village 2 SPA Amendment Project, along with existing and other projected future users, as well as the actions necessary and status to develop these supplies, have been identified in the Village 2 SPA Amendment WSA&V Report and will be included in the future water supply planning documents of the Water Authority and MWD.

This WSA&V Report includes, among other information, an identification of existing water supply entitlements, water rights, water service contracts, water supply projects, or agreements relevant to the identified water supply needs for the proposed Project. This WSA&V Report assesses, demonstrates, and documents that sufficient water supplies are

planned for and are intended to be available over a 20-year planning horizon, under normal conditions and in single-dry and multiple-dry years to meet the projected demand of the proposed Village 2 SPA Amendment Project and the existing and other planned development projects to be served by the Otay WD.

Table 8 presents the forecasted balance of water demands and required supplies for the Otay WD service area under average or normal year conditions. The total actual demand for FY 2012 was 35,423 acre-feet. The demand for FY 2012 is 3,482 acre-feet lower than the demand in FY 2005 of 38,905 acre-feet. The drop in demand is a result of the unit price of water, the conservation efforts of users as a result of the prolonged drought, and the economy.

Table 9 presents the forecasted balance of water demands and supplies for the Otay WD service area under single-dry year conditions. Table 9 presents the forecasted balance of water demands and supplies for the Otay WD service area under multiple-dry year conditions for the three year period ending in 2015. The multiple-dry year conditions for periods ending in 2023, 2028, and 2033 are provided in the Otay Water District 2010 UWMP. The projected potable demand and supply requirements shown the Tables 8 and 9 are from the Otay WD 2010 UWMP. Hot, dry weather may generate urban water demands that are about 6.4 percent greater than normal. This percentage was utilized to generate the dry year demands shown in Table 9. The recycled water supplies are assumed to experience no reduction in a dry year.

Table 8
Projected Balance of Water Demands and Supplies Normal Year Conditions (acre-feet)

Description	FY 2015	FY 2020	FY 2025	FY 2030	FY 2035
Demands					
Otay WD Demands	44,883	53,768	63,811	70,669	77,171
Freeway Commercial Demands	127	127	127	127	127
Village 2 Demands	529	529	529	529	529
University Villages Demands	41	41	41	41	41
Additional Conservation Target	0	(7,447)	(13,996)	(17,895)	(20,557)
Total Demand	45,580	47,018	50,512	53,472	57,311
Supplies					
Water Authority Supply	40,483	41,321	44,015	45,974	48,614
Water Authority Accelerated Forecast Growth Increment	697	697	697	697	697
Recycled Water Supply	4,400	5,000	5,800	6,800	8,000
Total Supply	45,580	47,018	50,512	53,472	57,311
Supply Surplus/(Deficit)	0	0	0	0	0
The 697 (127+529+41) AFY increase in demand is accounted for through the Accelerated Forecasted Growth demand increment of the Water Authority's 2010 UWMP.					

Table 9 presents the forecasted balance of water demands and supplies for the Otay WD service area under single-dry year and multiple-dry year conditions as from the Otay WD 2010 UWMP.

**Table 9
 Projected Balance of Water Demands and Supplies
 Single-Dry and Multiple-Dry Year Conditions (acre-feet)**

	Normal Year	Single-Dry Year	Multiple-Dry Years		
	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Demands					
Otay WD Demands	37,176	41,566	43,614	46,385	50,291
Total Demand	37,176	41,566	43,614	46,385	50,291
Supplies					
Water Authority Supply	33,268	37,535	39,460	42,108	45,891
Recycled Water Supply	3,908	4,031	4,154	4,277	4,400
Total Supply	37,176	41,566	43,614	46,385	50,291
Supply Surplus/(Deficit)	0	0	0	0	0
District Demand totals with SBX7-7 conservation target achievement plus single-dry year increase as shown. The Water Authority could implement its DMP. In this instances, the Water Authority may have to allocate supply shortages based on it equitable allocation methodology in its DMP.					

Dry year demands assumed to generate a 6.4% increase in demand over normal conditions for each year in addition to new demand growth.

Table 9 also presents the forecasted balance of water demands and supplies for the Otay WD service area under multiple-dry year conditions for the three year period ending in 2015.

In evaluating the availability of sufficient water supply, the Village 2 SPA Amendment Project development proponents will be required to participate in the development of alternative water supply project(s). This can be achieved through payment of the New Water Supply Fee adopted by the Otay WD Board in May 2010. These water supply projects are in addition to those identified as sustainable supplies in the current Water Authority and MWD UWMP, IRP, Master Plans, and other planning documents. These new water supply projects are in response to the regional water supply issues related to climatological, environmental, legal, and other challenges that impact water source supply conditions, such as the court rulings regarding the Sacramento-San Joaquin Delta and the current ongoing western states drought conditions. These new additional water supply projects are not currently developed and are in various stages of the planning process. The Otay WD water supply development program includes but is not limited to projects such as the Middle Sweetwater River Basin Groundwater Well project, the North District Recycled Water Supply Concept, the Otay WD Desalination project, and the Rancho del Rey Groundwater Well project. The Water Authority and MWD’s next forecasts and supply planning documents would capture any increase in water supplies resulting from any new water resources developed by the Otay WD.

The Otay WD acknowledges the ever-present challenge of balancing water supply with demand and the inherent need to possess a flexible and adaptable water supply implementation strategy that can be relied upon during normal and dry weather conditions. The responsible regional water supply agencies have and will continue to adapt their resource plans and strategies to meet climate, environmental, and legal challenges so that they may continue to provide water supplies to their service areas. The regional water suppliers along with Otay WD fully intend to maintain sufficient reliable supplies through the 20-year planning horizon under normal, single-dry, and multiple-dry year conditions to meet projected demand of the Village 2 SPA Amendment Project, along with existing and other planned development projects within the Otay WD service area.

This WSA&V Report assesses, demonstrates, and documents that sufficient water supplies are planned for and are intended to be acquired, as well as the actions necessary and status to develop these supplies, to meet projected water demands of the Village 2 SPA Amendment Project as well as existing and other reasonably foreseeable planned development projects within the Otay WD for a 20-year planning horizon, in normal and in single-dry and multiple-dry years.

Source Documents

City of Chula Vista, Otay Ranch Village 2 SPA Amendment SB 610 and SB 221 Compliance request letter received October 2, 2013.

City of Chula Vista, "Otay Ranch General Development Plan/Sub-regional Plan, The Otay Ranch Joint Planning Project," October 1993 amended June 1996.

County of San Diego, "East Otay Mesa Specific Plan Area," adopted July 27, 1994.

Otay Water District, "2010 Water Resources Master Plan Update," Dated November, 2010, Amended April 2013.

Atkins and Otay Water District, "Otay Water District 2010 Urban Water Management Plan," June 2011.

Camp Dresser & McKee, Inc., "Otay Water District Integrated Water Resources Plan," March 2007

San Diego County Water Authority, "Urban Water Management Plan 2005 Update," November 2005 amended May 2007.

MWD Water District of Southern California, "Regional Urban Water Management Plan," November 2005.

Dexter Wilson Engineering, Inc., "Village 2 Comprehensive SPA Amendment Water System Evaluation" Memorandum, May 28, 2013.

Camp Dresser & McKee, Inc., "Rosarito Desalination Facility Conveyance and Disinfection System Project," June 21, 2010.

PBS&J, "Draft Otay Water District North District Recycled Water System Development Project, Phase I Concept Study," December 2008.

NBS Lowry, "Middle Sweetwater River System Study Water Resources Audit," June 1991.

Michael R. Welch, "Middle Sweetwater River System Study Alternatives Evaluation," May 1993.

Michael R. Welch, "Middle Sweetwater River Basin Conjunctive Use Alternatives," September 1994.

Geoscience Support Services, Inc., "Otay Mesa Lot 7 Well Investigation," May 2001.

Boyle Engineering Corporation, "Groundwater Treatment Feasibility Study Ranch del Rey Well Site," September 1996.

Agreement for the Purchase of Treated Water from the Otay Water Treatment Plant between the City of San Diego and the Otay Water District.

Agreement between the San Diego County Water Authority and Otay Water District regarding Implementation of the East County Regional Treated Water Improvement Program.

Agreement between the San Diego County Water Authority and Otay Water District for Design, Construction, Operation, and Maintenance of the Otay 14 Flow Control Facility Modification.

Agreement between the Otay Water District and the City of San Diego for Purchase of Reclaimed Water from the South Bay Water Reclamation Plant.

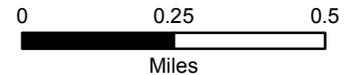
Appendix A

Village 2 SPA Amendment Regional Location Map

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OTAY WATER DISTRICT
OTAY RANCH UNIVERSITY VILLAGES PROJECT
VILLAGE 2 LOCATION MAP



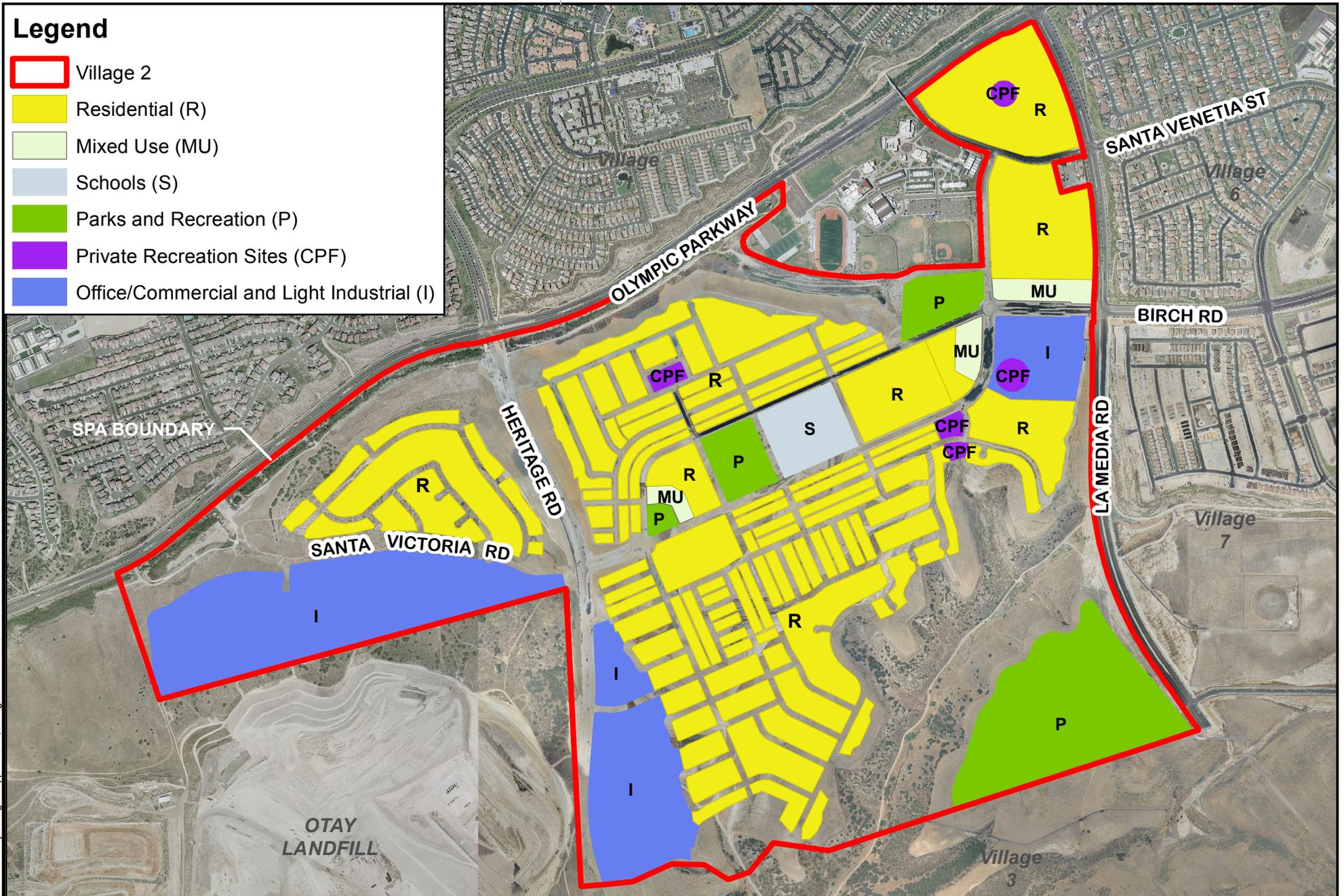
SPA D0740-090161

Appendix B

Otay Ranch Village 2 SPA Amendment Proposed Development Plan

Legend

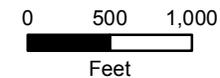
- Village 2
- Residential (R)
- Mixed Use (MU)
- Schools (S)
- Parks and Recreation (P)
- Private Recreation Sites (CPF)
- Office/Commercial and Light Industrial (I)



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OTAY WATER DISTRICT OTAY RANCH UNIVERSITY VILLAGES PROJECT VILLAGE 2 LAND USE MAP



SPA D0740-090161



Otay Water District Board of Directors Meeting November 6, 2013

Water Supply Assessment & Verification Report for Otay Ranch University Villages Project & Village 2 SPA Amendment SB 610 & SB 221 Compliance

Village 2



University Villages



BACKGROUND

Senate Bills 610 and 221 became effective on January 1, 2002, with the primary intent to improve the link between water supply availability and land use decisions.

SB 610 Water Supply Assessment (WSA):

- **Requires water purveyor to prepare a Water Supply Assessment Report for inclusion in agency CEQA documentation.**

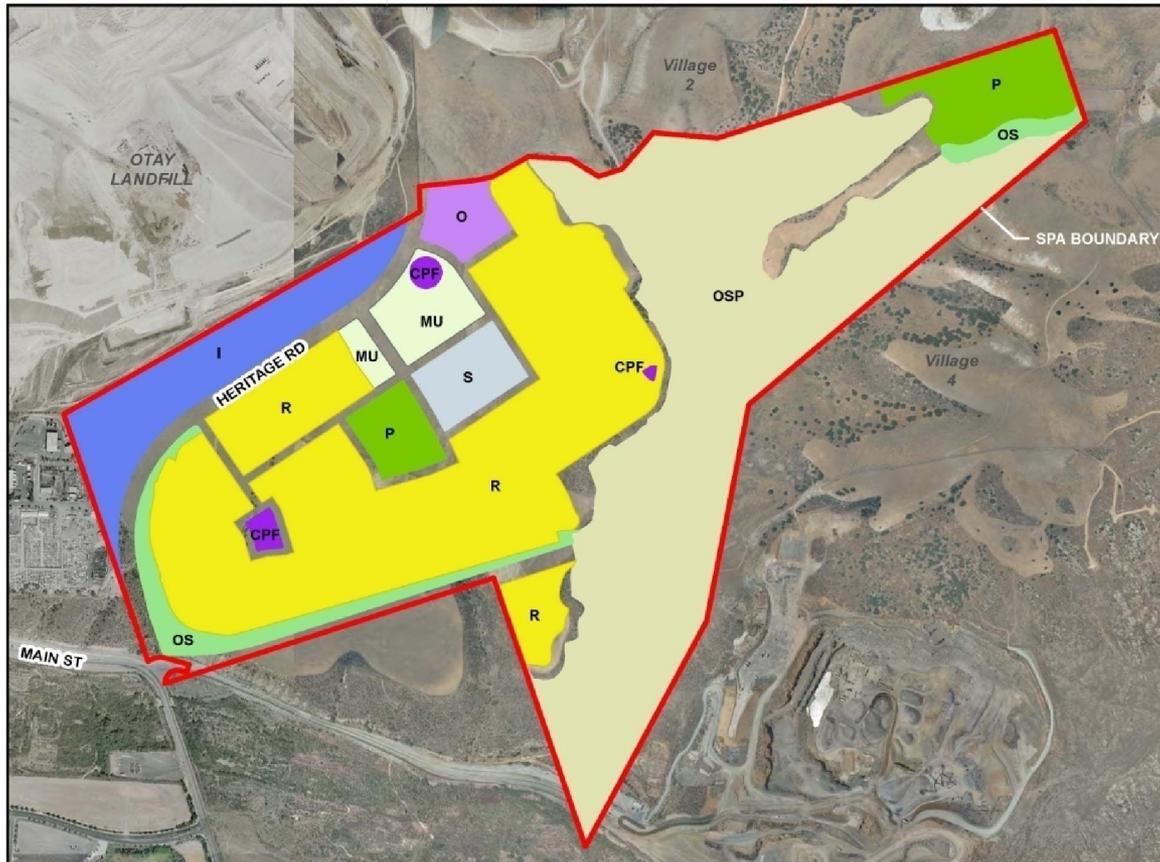
SB 221 Water Supply Assessment & Verification (WSA&V):

- **Requires water purveyor to prepare a Water Supply Assessment & Verification Report for inclusion in agency CEQA documentation.**
- **Board approval required for submittal of the WSA&V Report to City of Chula Vista.**

Otay Ranch University Villages Project

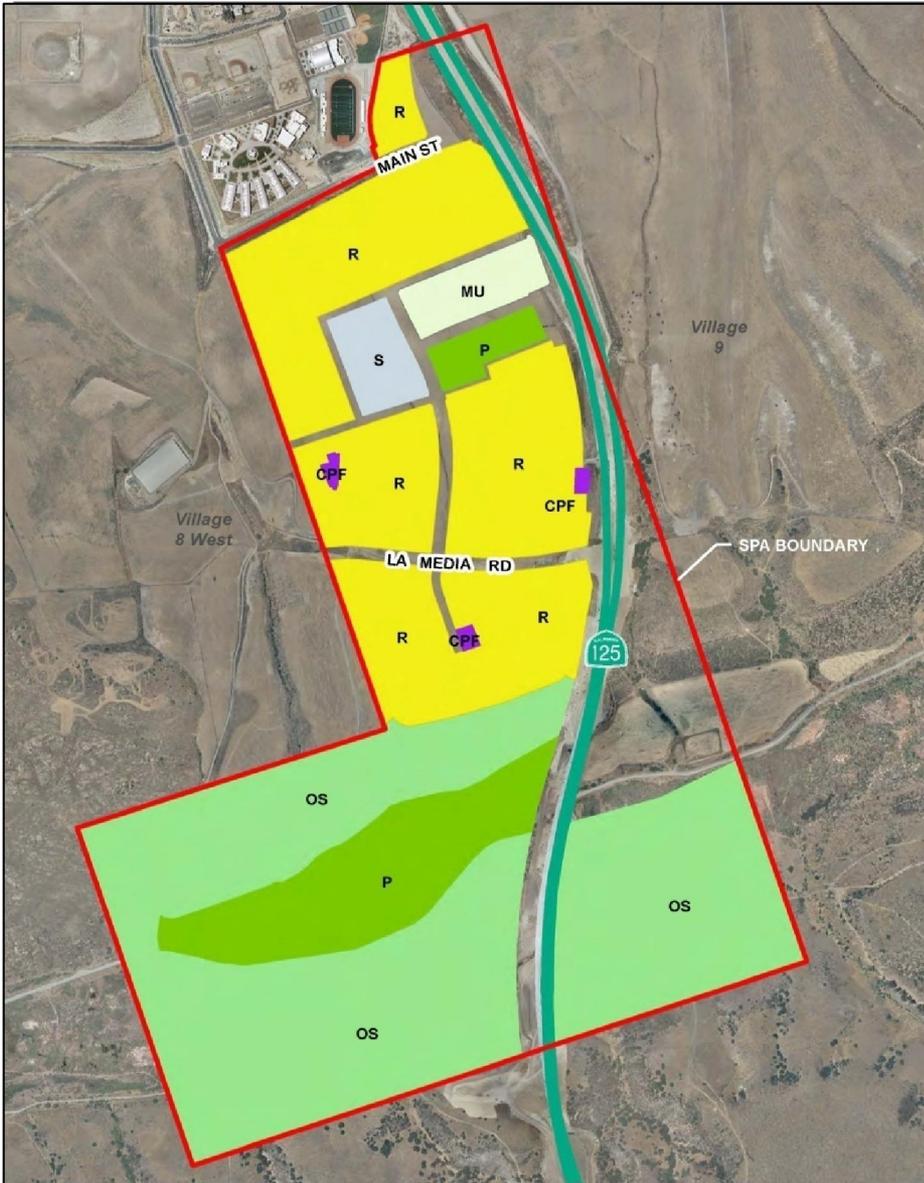
Total Water Demand

Potable – 2,393 AFY / Recycled - 616 AFY , 41 AFY Increase



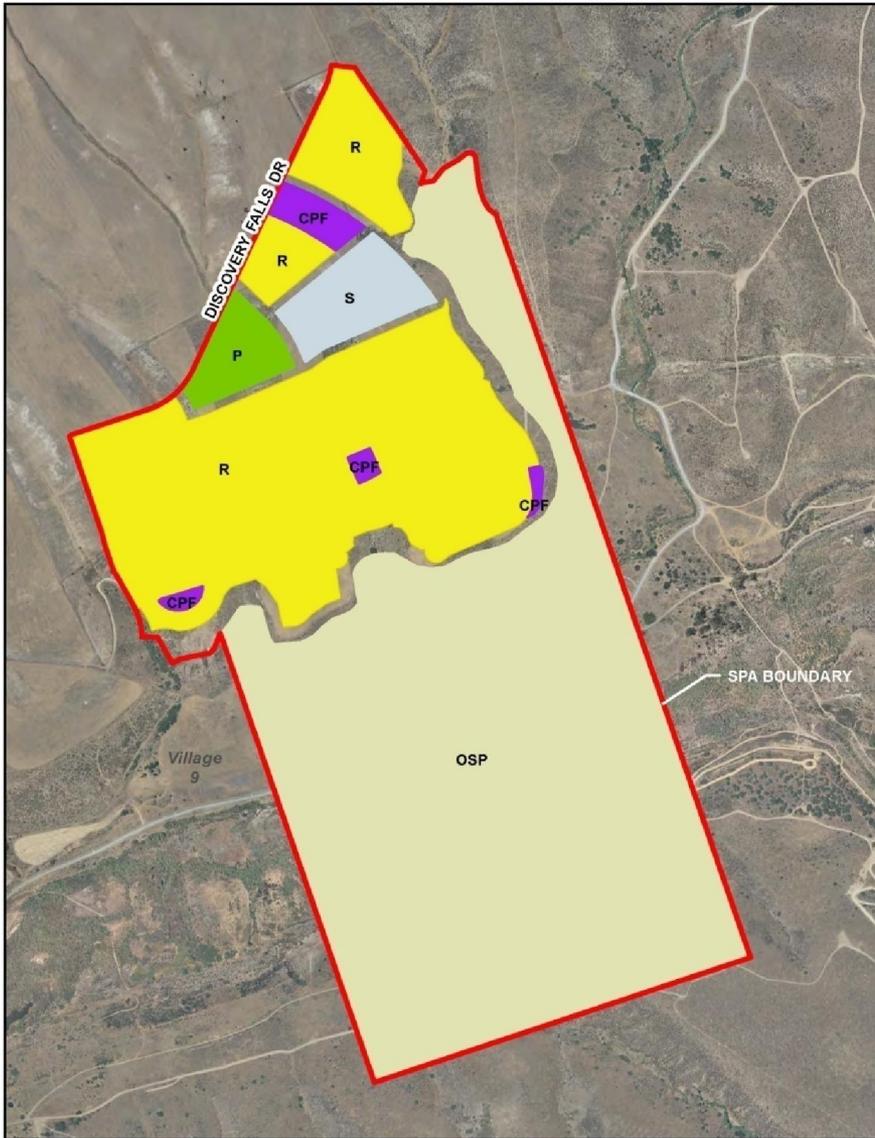
Village 3 & a portion of Village 4

- Pedestrian & transit oriented village
- 1,597 homes around a mixed use core (1002 SF homes / 585 MF units)
- 20,000 sq. ft. retail commercial
- Elementary School
- Park site
- Non-residential areas include open space & open space preserve, office space & light industrial



Village 8 East

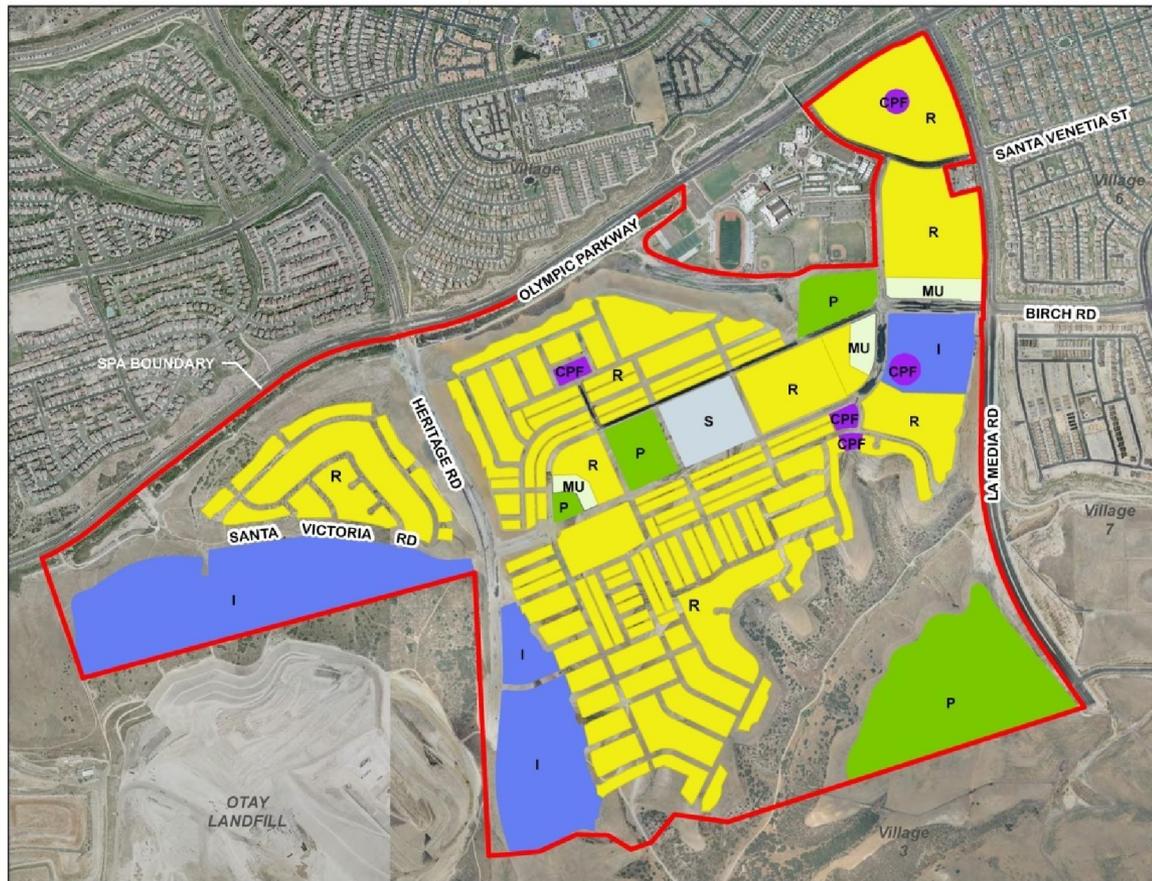
- Pedestrian oriented urban village
- 3,560 mixed-density residential (963 SF / 2,497 MF units)
- 20,000 sq. ft. commercial retail
- Elementary school
- Neighborhood park
- Open space – 11 acres



Village 10

- Pedestrian oriented urban village
- 1,740 mixed-density residential (692 SF / 1,048 MF units)
- Elementary school
- Neighborhood park
- Small private recreation sites (Community Park Facilities (CPF))
- 16.5 acres of open space preserve

Otay Ranch Village 2 SPA Amendment



- Split into many ownerships, Baldwin & Sons is majority owner
- Amendment of Sectional Planning Area Plan requires updated WSA&V
- Addition of 1,564 residential units, elementary school, park, & CPF sites

Water Supply Assessment & Verification Report

- **The regional and local water supply agencies acknowledge the challenges and fully intend to develop sufficient, reliable supplies to meet demands.**
- **Water suppliers recognize additional water supplies are necessary and portfolios need to be reassessed and redistributed with intent to serve existing and future needs.**

Water Supply Assessment & Verification Report

- **The Report documents the planned water supply projects and the actions necessary to develop the supplies.**
- **Water supply for the Projects and for existing and future developments within the District for a 20-year planning horizon, under normal and in single-dry and multiple-dry years, are planned for and are intended to be made available.**

Otay Water District

Planned Local Water Supply Projects	Supply (AF)
Rancho del Rey Groundwater Well	500
Rosarito Ocean Desalination Project	20,000-50,000
Otay Mesa Lot 7 Groundwater Well	300
Otay Mesa Recycled Water Supply Link Project	800

Water Authority Supplies

WATER AUTHORITY SUPPLIES (AFY)	2015	2020	2025	2030 / 2035
IID Water Transfer	100,000	190,000	200,000	200,000
ACC and CC Lining	80,200	80,200	80,200	80,200
Carlsbad Desalination	0	56,000	56,000	56,000
Sub-Total:	180,200	326,200	336,200	336,200

Source: Table 9-1 Water Authority 2010 UWMP

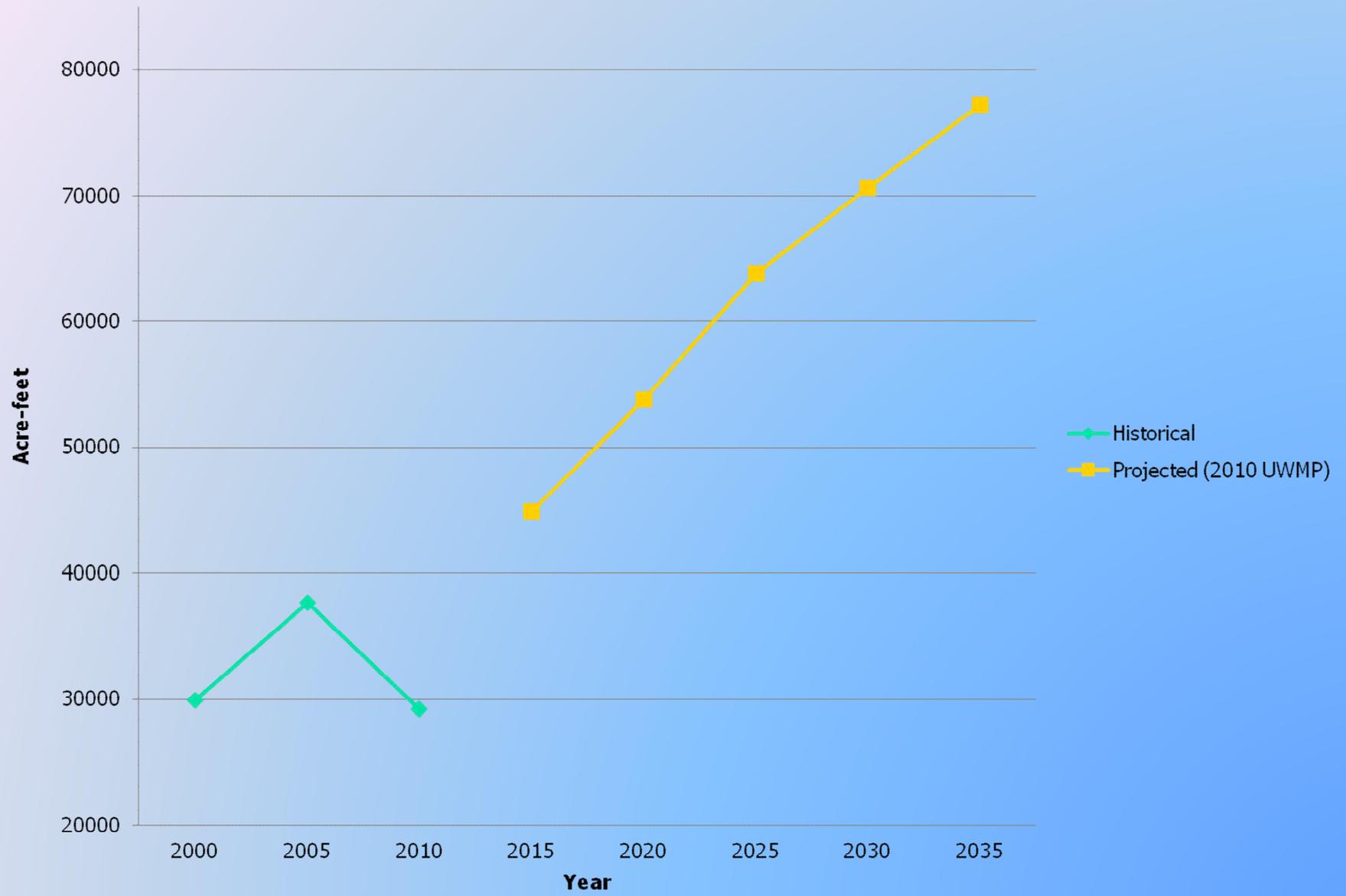
Otay Water District

Projected Balance of Supply and Demand

Description	FY 2015	FY 2020	FY 2025	FY 2030	FY 2035
Demands					
Otay WD Demands	44,883	53,768	63,811	70,669	77,171
Univ. Villages Demands	41	41	41	41	41
Village 2 Demands	529	529	529	529	529
Freeway Commercial Demands	127	127	127	127	127
Additional Conservation Target	0	(7,447)	(13,996)	(17,895)	(20,557)
Total Demand	45,580	47,018	50,512	53,472	57,311
Supplies					
Water Authority Supply	40,483	41,321	44,015	45,974	48,614
Water Authority Accel. Forecast Growth Increment	697	697	697	697	697
Recycled Water Supply	4,400	5,000	5,800	6,800	8,000
Total Supply	45,580	47,018	50,512	53,472	57,311
Supply Surplus/(Deficit)	0	0	0	0	0

The 697 (41+529+127) AFY increase in demand is accounted for through the Accelerated Forecasted Growth demand increment of the Water Authority's 2010 UWMP.

Projected & Historical Potable Water Fiscal Year Demands



CONCLUSION

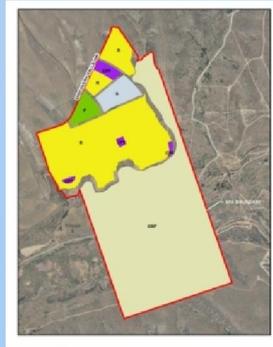
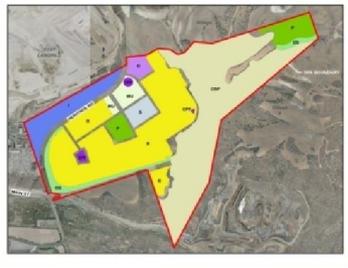
- **Water demand and supply forecasts are included in the planning documents of MWD, Water Authority, and the Otay Water District.**
- **Actions necessary to develop the identified water supplies are documented.**
- **The Otay Ranch University Villages Project & the Otay Ranch Village 2 SPA Amendment SB 610 & SB 221 WSA&V Reports demonstrate and document that sufficient water supplies are planned for and are intended to be available over the next 20 years.**

CONCLUSION (continued)

- **It is believed that the Board has met the intent of SB 610 & SB 221 statute in that:**
 - 1) Land use agencies and water suppliers have demonstrated strong linkage.**
 - 2) The Otay Ranch University Villages Project and the Otay Ranch Village 2 SPA Amendment Water Supply Assessment & Verification Reports clearly document the current water supply situation.**

STAFF RECOMMENDATION

That the Board of Directors approve Senate Bills 610 & 221 Water Supply Assessment & Verification Report dated August 2013 for the Otay Ranch University Villages Project and the Otay Ranch Village 2 SPA Amendment.





QUESTIONS?





AGENDA ITEM 8

STAFF REPORT

TYPE MEETING:	Regular Board	MEETING DATE:	November 6, 2013
SUBMITTED BY:	Lisa Coburn-Boyd Environmental Specialist Bob Kennedy Engineering Manager	CIP./G.F. NO:	D0871- DIV. NO. 1,2 090123
APPROVED BY:	<input checked="" type="checkbox"/> Rod Posada, Chief, Engineering <input checked="" type="checkbox"/> German Alvarez, Assistant General Manager <input checked="" type="checkbox"/> Mark Watton, General Manager		
SUBJECT:	Approval of Water Supply Assessment and Verification Report (September 2013) for the Otay Ranch University Villages Project		

GENERAL MANAGER'S RECOMMENDATION:

That the Otay Water District (District) Board of Directors (Board) approve the Water Supply Assessment and Verification Report (WSA&V Report) dated September 2013 for the Otay Ranch University Villages Project, as required by Senate Bills 610 and 221 (see Exhibit A for Project location).

COMMITTEE ACTION:

Please see Attachment A.

PURPOSE:

To obtain Board approval of the September 2013 WSA&V Report for the Otay Ranch University Villages Project, as required by Senate Bill 610 and Senate Bill 221 (SB 610 and SB 221).

ANALYSIS:

The City of Chula Vista submitted a request for a WSA&V report to the District pursuant to SB 610 and SB 221. SB 610 and SB 221 require that, upon the request of the City or County, a water purveyor, such as the District, prepare a water supply assessment and verification report to be included in the California Environmental Quality Act (CEQA) environmental

documentation. This request was received by the District on August 20, 2013.

SB 610 requires a city or county to evaluate whether water supplies will be sufficient to meet the projected water demand for certain "projects" that are otherwise subject to the requirement of the CEQA. SB 610 provides its own definition of "project" in Water Code Section 10912.

SB 221 requires affirmative written verification from the water purveyor of the public water system that sufficient water supplies are planned to be available for certain residential subdivisions of property. The requirements of SB 610 and SB 221 are addressed by the September 2013 WSA&V Report for this project. The WSA&V Report was prepared by the District in consultation with Dexter Wilson Engineering, the San Diego County Water Authority (Water Authority), and the City of Chula Vista (City).

Prior to transmittal to the City, the WSA&V Report must be approved by the Board of Directors. An additional explanation of the intent of SB 610 and SB 221 is provided in Exhibit B, the Otay Ranch University Villages Project WSA&V Report is provided as Exhibit C.

For the Otay Ranch University Villages Project, the City is the responsible land use agency that requested the SB 610 and SB 221 water supply assessment and verification report from the District. The request for the WSA&V Reports, in compliance with SB 610 and SB 221 requirements, was made by the City because the Project meets or exceeds one or both of the following SB 610 and SB 221 criteria:

- A proposed residential development of more than 500 dwelling units.
- A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square-feet of floor space.
- A mixed-use project that includes one or more of the land uses specified in SB 610.
- 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.

The Otay Ranch University Villages Project is located within the 23,000 acre Otay Ranch master planned community within the City of Chula Vista. The development concepts for the villages in this project are as follows:

- Village 3 North and a portion of Village 4 is a pedestrian and transit oriented village containing 1,597 homes arranged around a mixed-use core with up to 20,000 square feet of commercial retail, an elementary school, and park sites.
- Village 8 East is planned as a pedestrian oriented urban village with 3,560 mixed density residential units, up to 20,000 square feet of commercial retail, an elementary school, a neighborhood park and Community Park Facilities (CPF) sites.
- Village 10 is planned as a pedestrian oriented urban village with 1,740 mixed density residential units, an elementary school, park and Community Park Facilities (CPF) sites.

The expected potable water demand for the Otay Ranch University Villages Project is 2.14 million gallons per day or about 2,393 acre-feet per year (AFY) which is 41 AFY higher than what was projected in the District's 2010 Water Resources Master Plan Update (WRMP Update). The projected recycled water demand for the Otay Ranch University Villages Project is 0.55 million gallons per day or 616 AFY, representing about 20% of the total Otay Ranch University Villages Project water demand.

The 41 AFY increase is accounted for through the Accelerated Forecasted Growth demand increment of the Water Authority's 2010 UWMP. As documented in the Water Authority's 2010 UWMP, the Water Authority is planning to meet future and existing demands which include the demand increment associated with the accelerated forecasted growth. The Water Authority will assist its member agencies in tracking the environmental documents provided by the agencies that include water supply assessments and verifications reports that utilize the accelerated forecasted growth demand increment to demonstrate supplies for the development. In addition, the next update of the demand forecast for the Water Authority's 2015 UWMP will be based on SANDAG's most recently updated forecast, which will include the Project. Therefore, based on the findings from the District's 2010 UWMP and the Water Authority's 2010 UWMP, this Project will result in no unanticipated demands.

The request for compliance with SB 221 requirements was made by the City because the project will exceed the SB 221 criteria of a proposed residential development subdivision of more than 500 dwelling units.

Pursuant to SB 610 and SB 221, the WSA&V Report incorporate by reference the current Urban Water Management Plans and other water resources planning documents of the District, the Water Authority, and the Metropolitan Water District of Southern California (Metropolitan). The District prepared the WSA&V Report in consultation with Dexter Wilson Engineering, the Water Authority, and the City which demonstrates and documents that sufficient water supplies are planned for and are intended to be made available over a 20-year planning horizon under normal supply conditions and in single-dry and multiple-dry years to meet the projected demand of the Otay Ranch University Villages Project, and other planned development projects within the District.

FISCAL IMPACT: Joe Beachem, Chief Financial Officer

The District has been reimbursed \$8,000 for all costs associated with the preparation of the Otay Ranch University Villages Project WSA&V Report. The reimbursement was accomplished via an \$8,000 deposit the Project proponents placed with the District on April 12, 2012.

STRATEGIC GOAL:

The preparation and approval of the WSA&V Report for the Otay Ranch University Villages Project supports the District's Mission statement, "To provide high value water and wastewater services to the customers of the Otay Water District, in a professional, effective, and efficient manner" and the District's Strategic Goal, in planning for infrastructure and supply to meet current and future potable water demands.

LEGAL IMPACT:

Approval of a WSA&V Report for the Otay Ranch University Villages Project in form and content satisfactory to the Board of Directors would allow the District to comply with the requirements of Senate Bills 610 and 221.

LCB/BK/RP:jf

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Attachments: Attachment A - Committee Action
Exhibit A - Location Map
Exhibit B - Explanation of the Intent of SB 610 &
SB 221
Exhibit C - Otay Ranch University Villages
Project WSA&V Report
Exhibit D - Presentation



ATTACHMENT A

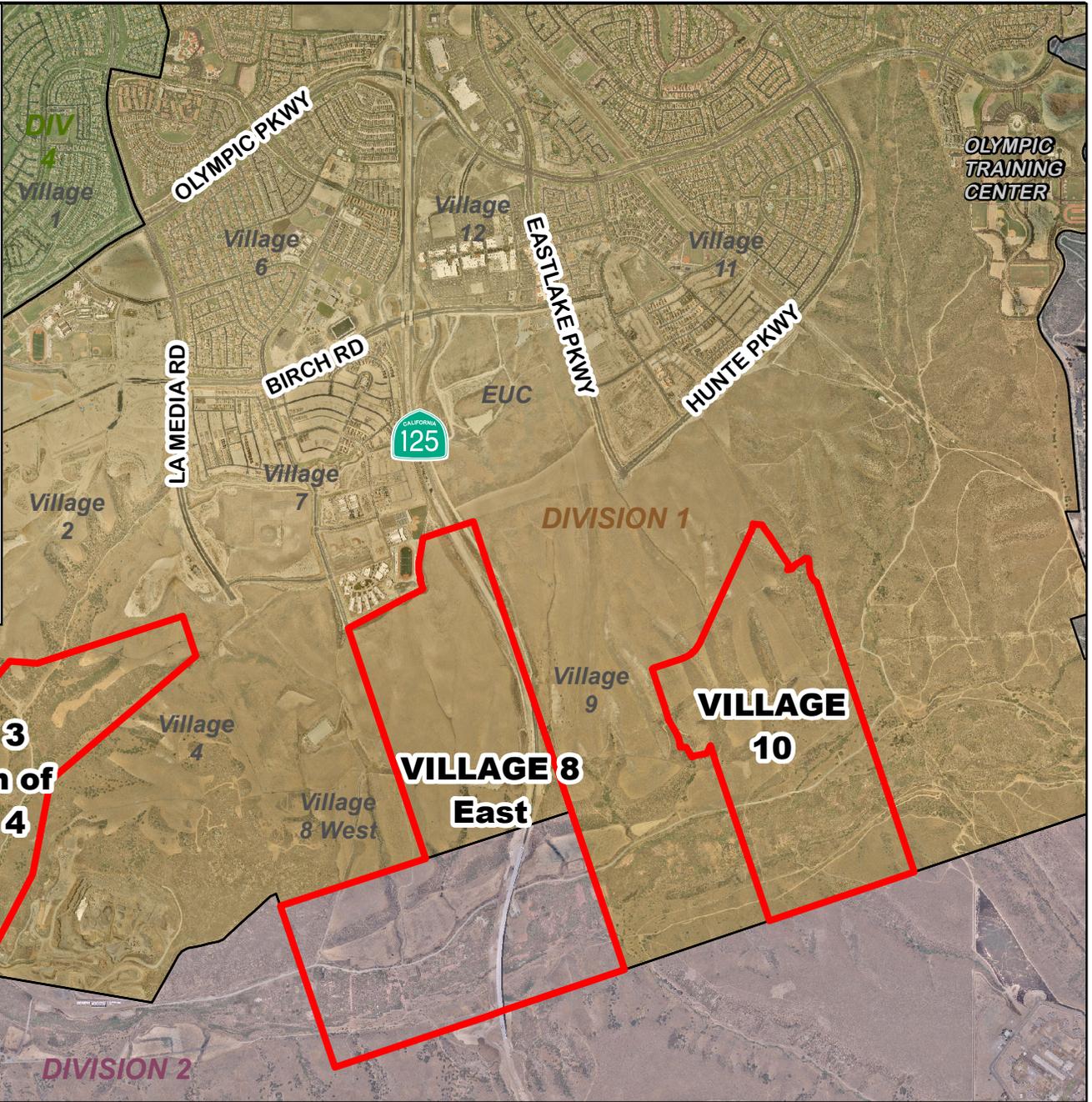
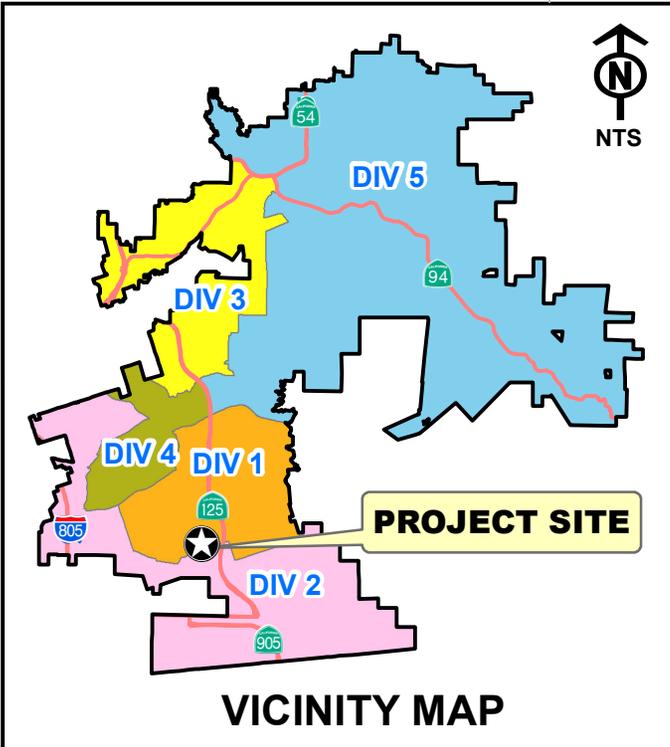
SUBJECT/PROJECT: D0871-090123	Approval of Water Supply Assessment and Verification Report (September 2013) for the Otay Ranch University Villages Project
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COMMITTEE ACTION:

The Engineering, Operations, and Water Resources Committee (Committee) reviewed this item at a meeting held on October 23, 2013. The Committee supported Staff's recommendation.

NOTE:

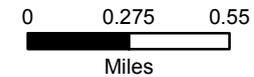
The "Committee Action" is written in anticipation of the Committee moving the item forward for Board approval. This report will be sent to the Board as a Committee approved item, or modified to reflect any discussion or changes as directed from the Committee prior to presentation to the full Board.



P:\WORKING\WO_D0871 - University Villages\Exhibit A, Location Map.mxd



OTAY WATER DISTRICT
OTAY RANCH UNIVERSITY VILLAGES PROJECT
LOCATION MAP



D0871-090123

EXHIBIT B

Background Information

The Otay Water District (District) prepared the September 2013 Water Supply Assessment and Verification (WSA&V) Report for the Otay Ranch University Villages Project at the request of the City of Chula Vista. The City's WSA&V request letter dated August 20, 2013 was received by the District on August 21, 2013 so the 90-day deadline for the District to provide the Board an approved WSA&V Report to the City ends November 18, 2013. The University Villages Project is located within the 23,000 acre Otay Ranch master planned community within the City of Chula Vista. The project proposes 6,897 homes and associated village land uses on approximately 755 acres and includes roughly 620 acres of Open Space Preserve for a total Project area of approximately 1,375 acres.

The Otay Ranch University Villages Project is located within the jurisdictions of the District, the San Diego County Water Authority (Water Authority), and the Metropolitan Water District of Southern California (MWD). See Exhibit A for Project location. To obtain permanent imported water supply service, land areas are required to be within the jurisdictions of the District, Water Authority, and MWD.

The September 2013 WSA&V Report for the Otay Ranch University Villages Project has been prepared by the District in consultation with Dexter Wilson Engineering, the Water Authority, and the City pursuant to Public Resources Code Section 21151.9 and California Water Code Sections 10631, 10656, 10910, 10911, 10912, and 10915 referred to as Senate Bill (SB) 610 and Government Code Sections 65867.5, 66455.3, and 66473.7 referred to as SB 221. SB 610 and SB 221 amended state law, effective January 1, 2002, intending to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 requires that the water purveyor of the public water system prepare a water supply assessment to be included in the California Environmental Quality Act (CEQA) environmental documentation and approval process of certain proposed projects. SB 221 requires affirmative written verification from the water purveyor of the public water system that sufficient water supplies are to be available for certain residential subdivision of property. The requirements of SB 610 and SB 221 are addressed in the September 2013 WSA&V Report for the Otay Ranch University Villages Project.

The Otay Ranch University Villages Project has the following development concepts for the villages in this project. Village 3 North and a portion of Village 4 is a pedestrian and transit oriented village containing 1,597 homes arranged around a mixed-use core with up to 20,000 square feet of commercial retail, an elementary school, and park sites. Village 8 East is planned as a pedestrian oriented urban village with 3,560 mixed density residential units, up to 20,000 square feet of commercial retail, an elementary school, a neighborhood park, and Community Park Facilities (CPF) sites. Village 10 is

planned as a pedestrian oriented urban village with 1,740 mixed density residential units, an elementary school, park, and Community Park Facilities (CPF) sites.

The expected potable water demand for the Otay Ranch University Villages Project is 2.14 million gallons per day (MGD) or about 2,393 acre feet per year (AFY) which is 41 AFY higher than what was projected in the District's 2010 Water Resources Master Plan Update (WRMP Update). The projected recycled water demand for the Otay Ranch University Villages Project is 0.55 MGD or 616 AFY, representing about 20% of the total Otay Ranch University Villages Project water demand.

The 41 AFY increase in demand is accounted for through the Accelerated Forecasted Growth demand increment of the Water Authority's 2010 UWMP. As documented in the Water Authority's 2010 UWMP, the Water Authority is planning to meet future and existing demands which include the demand increment associated with the accelerated forecasted growth. The Water Authority will assist its member agencies in tracking the environmental documents provided by the agencies that include water supply assessments and verifications reports that utilize the accelerated forecasted growth demand increment to demonstrate supplies for the development. In addition, the next update of the demand forecast for the Water Authority's 2015 UWMP will be based on SANDAG's most recently updated forecast, which will include the Project. Therefore, based on the findings from the Otay WD's 2010 UWMP and the Water Authority's 2010 UWMP, this Project will result in no unanticipated demands.

The District currently depends on the Water Authority and the MWD for all of its potable water supplies and regional water resource planning. The District's 2010 Urban Water Management Plan (UWMP) relies heavily on the UWMP's and Integrated Water Resources Plans (IRPs) of the Water Authority and MWD for documentation of supplies available to meet projected demands. These plans are developed to manage the uncertainties and variability of multiple supply sources and demands over the long-term through preferred water resources strategy adoption and resource development target approvals for implementation.

MWD in October 2010 approved the update of their Integrated Water Resources Plan (IRP). The 2010 IRP Update describes an adaptive management approach to mitigate against future water supply uncertainty. The new uncertainties that are significantly affecting California's water resources include:

- The Federal Court ruling on previous operational limits on Sacramento-San Joaquin Delta to protect the Delta species. Water agencies are still trying to determine what effect the ruling will have on State Water Project (SWP) deliveries. Actual supply curtailments for MWD are contingent upon fish distribution, behavioral patterns, weather, Delta flow conditions, and how water supply reductions are divided between state and federal projects.
- Periodic extended drought conditions.

These uncertainties have rightly caused concern among Southern California water supply agencies regarding the validity of the current water supply documentation.

MWD is currently involved in several proceedings concerning Delta operations to evaluate and address environmental concerns. In addition, at the State level, the Delta Vision and Bay-Delta Conservation Plan processes are defining long-term solutions for the Delta.

The SWP represents approximately 9% of MWD's 2025 Dry Resources Mix with the supply buffer included. A 22% cutback in SWP supply represents an overall 2% (22% of 9% is 2%) cutback in MWD supplies in 2025. Neither the Water Authority nor MWD has stated that there is insufficient water for future planning in Southern California. Each agency is in the process of reassessing and reallocating their water resources.

Under preferential rights, MWD can allocate water without regard to historic water purchases or dependence on MWD. Therefore, the Water Authority and its member agencies are taking measures to reduce dependence on MWD through development of additional supplies and a water supply portfolio that would not be jeopardized by a preferential rights allocation.

As calculated by MWD (December 11, 2012), the Water Authority's current preferential right is 17.22% of MWD's supply, while the Water Authority accounted for approximately 25% of MWD's total revenue. So MWD could theoretically cut back the Water Authority's supply and theoretically, the Water Authority should have alternative water supply sources to make up for the difference. In the Water Authority's 2010 UWMP, they had already planned to reduce reliance on MWD supplies. This reduction is planned to be achieved through diversification of their water supply portfolio.

The Water Authority's Drought Management Plan (May 2006) provides the Water Authority and its member agencies with a series of potential actions to engage when faced with a shortage of imported water supplies due to prolonged drought conditions. Such actions help avoid or minimize impacts of shortages and ensure an equitable allocation of supplies throughout the San Diego County region.

The Otay Water District Board of Directors could acknowledge the ever-present challenge of balancing water supply with demand and the inherent need to possess a flexible and adaptable water supply implementation strategy that can be relied upon during normal and dry weather conditions. The responsible regional water supply agencies have and will continue to adapt their resource plans and strategies to meet climatological, environmental, and legal challenges so that they may continue to provide water supplies to their service areas. The regional water suppliers (i.e., the Water Authority and MWD), along with the District, fully intend to maintain sufficient reliable supplies through the 20-year planning horizon under normal, single-dry, and multiple-dry year conditions to meet projected demand of the Otay Ranch University Villages Project, along with existing and other planned development projects within the District's service area.

If the regional water suppliers determine additional water supplies will be required, or in this case, that water supply portfolios need to be reassessed and redistributed with the intent to serve the existing and future water needs throughout Southern California, the agencies must indicate the status or stage of development of actions identified in the plans they provide. MWD's 2010 IRP update will then cause the Water Authority to update its IRP, which will then provide the District with the necessary water supply documentation. Identification of a potential future action in such plans does not by itself indicate that a decision to approve or to proceed with the action has been made. The District's Board approval of the Otay Ranch University Villages Project WSA&V Report does not in any way guarantee water supply to the parcels that make up the Otay Ranch University Villages Project.

Alternatively, if the WSA&V Report is written to state that water supply is or will be unavailable; the District must include, in the assessment, a plan to acquire additional water supplies. At this time, the District should not state there is insufficient water supply.

So the best the District can do right now is to state the current water supply situation clearly, indicating intent to provide supply through reassessment and reallocation by the regional, as well as, the local water suppliers. In doing so, it is believed that the Board has met the intent of the SB 610 statute, that the land use agencies and the water agencies are coordinating their efforts in planning water supplies for new development.

With District Board approval of the Otay Ranch University Villages Project WSA&V Report, the Otay Ranch University Villages Project proponents can proceed with the draft environmental documentation required for the CEQA review process. The water supply issues will be addressed in these environmental documents, consistent with the WSA&V Report.

The District, as well as others, can comment on the draft EIR with recommendations that water conservation measures and actions be employed on the Otay Ranch University Villages Project.

Some recent actions regarding water supply assessments and verification reports by Otay Water District are as follows:

- The Board approved the Judd Company Otay Crossings Commerce Park water supply assessment report on December 5, 2007.
- The Board approved the Otay Ranch L.P. Otay Ranch Preserve and Resort Project Water Supply Assessment and Verification Report on February 4, 2009.
- The Board approved water supply assessment and verification reports for the City of Chula Vista Village 8 West Sectional Plan Area and Village 9 Sectional Plan Area on January 5, 2011.

- The Board approved the water supply assessment report for the San Diego-Tijuana Cross Border Facility on February 2, 2011.
- The Board approved the water supply assessment for the County of San Diego Rabago Technology Park on April 6, 2011.
- The Board approved the water supply assessment report for the Pio Pico Energy Center Project on October 5, 2011.
- The Board approved the water supply assessment report for the Hawano Project on March 7, 2012.
- The Board approved the water supply assessment reports for the Sunroad Otay Plaza and Otay Tech Center Projects on March 6, 2013.
- The Board approved the water supply assessment reports for the Otay Ranch Planning Area 12 Freeway Commercial Project and the City of San Diego Otay Mesa Community Plan Update on July 3, 2013.

Water supplies necessary to serve the demands of the proposed Otay Ranch University Villages Project, along with existing and other projected future users, as well as the actions necessary to develop these supplies, have been identified in the water supply planning documents of the District, the Water Authority, and MWD.

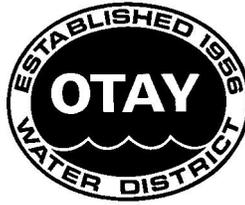
The WSA&V Report includes, among other information, an identification of existing water supply entitlements, water rights, water service contracts, or agreements relevant to the identified water supply needs for the proposed Otay Ranch University Villages Project. The WSA&V Report demonstrates and documents that sufficient water supplies are planned and are intended to be available over a 20-year planning horizon, under normal conditions and in single-dry and multiple-dry years, to meet the projected demand of the proposed Otay Ranch University Villages Project and the existing and other planned development projects within the District.

Accordingly, after approval of a WSA&V Report for the Otay Ranch University Villages Project by the District's Board of Directors, the WSA&V Report may be used to comply with the requirements of the legislation enacted by Senate Bills 610 and 221 as follows:

Senate Bill (SB) 610 Water Supply Assessment: The District's Board of Directors approved WSA&V Report may be incorporated into the California Environmental Quality Act (CEQA) compliance process for the Otay Ranch University Villages Project as a water supply assessment report consistent with the requirements of the legislation enacted by SB 610. The City of Chula Vista, as lead agency under the CEQA for the Otay Ranch University Villages Project environmental documentation, may cite the approved WSA&V Report as evidence that a sufficient water supply is

planned and intended to be available to serve the Otay Ranch University Villages Project.

Senate Bill (SB) 221 Water Supply Verification: The District's Board of Directors approved WSA&V Report may be incorporated into the City's Otay Ranch University Villages Project as a water supply verification report, consistent with the requirements of the legislation enacted by SB 221. The City, within their process of approving the Otay Ranch University Villages Project, may cite the approved WSA&V Report as verification of intended sufficient water supply to serve the Project.



OTAY WATER DISTRICT

WATER SUPPLY ASSESSMENT AND VERIFICATION REPORT

**Otay Ranch University Villages
(Villages 3 North, a Portion of 4, 8 East, and 10)
D0871-090123**

**Prepared by:
Lisa Coburn-Boyd
Environmental Compliance Specialist
and
Robert Kennedy, P.E.
Engineering Manager
Otay Water District
in consultation with
Dexter Wilson Engineering, Inc.
and
San Diego County Water Authority**

September 2013

Otay Water District Water Supply Assessment and Verification Report September 2013

Otay Ranch University Villages (Villages 3 North, a Portion of 4, 8 East, and 10)

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Otay Water District Water Supply Assessment and Verification Report September 2013

Otay Ranch University Villages (Otay Ranch Villages 3 North, a Portion of 4, 8 East, and 10)

Executive Summary

The Otay Water District (Otay WD) prepared this Water Supply Assessment and Verification Report (WSA&V Report) at the request of the City of Chula Vista (City) for the Otay Ranch Villages 3 North, a Portion of 4, 8 East, and 10 project, hereafter referred to as the University Villages project. SSBT LCRE, LLC submitted an entitlement application to the City for the development of the University Villages project.

Project Overview and Water Use

The University Villages project is included within a land use planning document known as the Otay Ranch General Development Plan/Sub-regional Plan (Otay Ranch GDP). The County of San Diego and City of Chula Vista jointly prepared and adopted the Otay Ranch GDP. The project is located within what is defined as the Otay River Parcel of the Otay Ranch GDP. The project is a part of the designated 14 villages and five planning areas within the Otay Ranch GDP area. The Chula Vista City Council and the San Diego County Board of Supervisors adopted the Otay Ranch GDP on October 28, 1993, which was accompanied by a Program Environmental Impact Report EIR-90-01 (SCH #89010154). As the Otay Ranch area has developed over time, the Otay Ranch GDP has been periodically amended to address land use and circulation element issues specific to individual Villages.

The Otay Ranch University Villages project is located along the northern edge of the Otay River Valley. The development concept for Village 3 North and a Portion of Village 4 is a pedestrian and transit oriented village containing 1,597 homes arranged around a mixed use core with up to 20,000 square feet of retail commercial, an elementary school, and park sites. Village 8 East is planned as a pedestrian oriented urban village with 3,560 mixed density residential units, up to 20,000 square feet of commercial retail, an elementary school, and a neighborhood park. Village 10 is planned as a pedestrian oriented urban village with 1,740 mixed density residential units, an elementary school, park, and Community Park Facilities (CFP) sites.

The expected potable water demands for the University Villages Project is 2.14 million gallons per day (MGD) or about 2,393 acre-feet per year (ac-ft/yr). This is 41 ac-ft/yr higher

than the demand estimate in the 2010 Otay WD Water Resources Master Plan Revision (2010 WRMP Revision) of the 2009 Otay WD Water Resources Master Plan. The projected recycled water demand for the proposed project is approximately 0.55 MGD or about 616 ac-ft/yr, representing about 20% of total project water demand.

The 41 AFY increase in demand is accounted for through the Accelerated Forecast Growth demand increment of the Water Authority's 2010 Urban Water Management Plan (UWMP). As documented in the Water Authority's 2010 UWMP, the Water Authority is planning to meet future and existing demands which include an increment associated with the accelerated forecasted growth. The Water Authority will assist its member agencies in tracking the environmental documents provided by the agencies that include water supply assessments and verification reports that utilize the accelerated forecasted growth demand increment to demonstrate supplies for the development. In addition, the next update of the demand forecast for the Water Authority's 2015 UWMP will be based on the San Diego Association of Government's (SANDAG) most recently updated forecast, which will include the Project. Therefore, based on the findings from the Otay WD's 2010 UWMP and the Water Authority's 2010 UWMP, this project will result in no unanticipated demands.

The Water Authority's 2010 UWMP provides for a comprehensive planning analysis at a regional level and includes water use associated with accelerated forecasted development as part of its municipal and industrial sector demand projections. These housing and commercial units were identified by SANDAG in the course of its regional housing needs assessment, but are not yet included in existing general land use plans of local jurisdictions. The demand associated with accelerated forecasted residential development is intended to account for SANDAG's land-use development currently projected to occur between 2035 and 2050, but has the likely potential to occur on an accelerated schedule. SANDAG estimates that this accelerated forecasted residential and commercial development could occur within the planning horizon (2015 to 2035) of the 2010 UWMP. This land-use is not included in the local jurisdictions' general plan, so their projected demands are incorporated at a regional level. When necessary, this additional demand increment, termed Accelerated Forecasted Growth, can be used by member agencies to meet the demands of development projects not identified in the general land use plans.

Planned Imported Water Supplies from the Water Authority and MWD

The Water Authority and Metropolitan Water District (MWD) have an established process that ensures supplies are being planned to meet future growth. Any annexations and revisions to established land use plans are captured in the San Diego Association of Governments (SANDAG) updated forecasts for land use planning, demographics, and economic projections. SANDAG serves as the regional, intergovernmental planning agency that develops and provides forecast information. The Water Authority and MWD update their demand forecasts and supply needs based on the most recent SANDAG forecast approximately every five years to coincide with preparation of their Urban Water Management Plans (UWMP). Prior to the next forecast update, local jurisdictions may

require water supply assessment and/or verification reports for proposed land developments that are not within the Otay WD, Water Authority, nor MWD jurisdictions (i.e., pending or proposed annexations) or that have revised land use plans than what is reflected in the existing growth forecasts. Proposed land areas with pending or proposed annexations or revised land use plans typically result in creating higher demand and supply requirements than anticipated. The Otay WD, Water Authority, and MWD next demand forecast and supply requirements and associated planning documents would then capture any increase or decrease in demands and required supplies as a result of annexations or revised land use planning decisions.

The California Urban Water Management Planning Act (Act), which is included in the California Water Code, requires all urban water suppliers within the state to prepare an UWMP and update it every five years. The purpose and importance of the UWMP has evolved since it was first required 25 years ago. State agencies and the public frequently use the document to determine if agencies are planning adequately to reliably meet future demands. As such, UWMPs serve as an important element in documenting supply availability for the purpose of compliance with state laws, Senate Bills 610 and 221, linking water supply sufficiency to large land-use development approval. Agencies must also have a UWMP prepared, pursuant to the Act, in order to be eligible for state funding and drought assistance.

MWD's Integrated Resource Plan (IRP) identifies a mix of resources (imported and local) that, when implemented, will provide 100 percent reliability for full-service demands through the attainment of regional targets set for conservation, local supplies, State Water Project supplies, Colorado River supplies, groundwater banking, and water transfers. The 2010 update to the IRP (2010 IRP Update) includes a planning buffer supply intended to mitigate against the risks associated with implementation of local and imported supply programs. The planning buffer identifies an additional increment of water that could potentially be developed if other supplies are not implemented as planned. As part of implementation of the planning buffer, MWD periodically evaluates supply development to ensure that the region is not under or over developing supplies. Managed properly, the planning buffer will help ensure that the southern California region, including San Diego County, will have adequate water supplies to meet future demands.

Water supply agencies throughout California continue to face climatological, environmental, legal, and other challenges that impact water source supply conditions, such as the court rulings regarding the Sacramento-San Joaquin Delta issues and the recent drought impacting the western states. Challenges such as these essentially always will be present. The regional water supply agencies, the Water Authority and MWD, along with Otay WD, nevertheless fully intend to have sufficient, reliable supplies to serve demands.

In Section ES-5 of MWD's 2010 Regional Urban Water Management Plan (2010 RUWMP), MWD states that MWD has supply capacities that would be sufficient to meet expected demands from 2015 through 2035. MWD has plans for supply implementation and continued development of a diversified resource mix including programs in the Colorado River

Aqueduct, State Water Project, Central Valley Transfers, local resource projects, and in-region storage that enables the region to meet its water supply needs. MWD's 2010 RUWMP identifies potential reserve supplies in the supply capability analysis (Tables 2-9, 2-10, and 2-11), which could be available to meet the unanticipated demands such as those related to the University Villages project.

The County Water Authority Act, Section 5 subdivision 11, states that the Water Authority "as far as practicable, shall provide each of its member agencies with adequate supplies of water to meet their expanding and increasing needs."

As part of preparation of a written water supply assessment report, an agency's shortage contingency analysis should be considered in determining sufficiency of supply. Section 11 of the Water Authority's 2010 UWMP contains a detailed shortage contingency analysis that addresses a regional catastrophic shortage situation and drought management. The analysis demonstrates that the Water Authority and its member agencies, through the Emergency Response Plan, Emergency Storage Project, and Drought Management Plan (DMP) are taking actions to prepare for and appropriately handle an interruption of water supplies. The DMP, adopted in May 2006, provides the Water Authority and its member agencies with a series of potential actions to take when faced with a shortage of imported water supplies from MWD due to prolonged drought or other supply shortfall conditions. The actions will help the region avoid or minimize the impacts of shortages and ensure an equitable allocation of supplies.

Otay Water District Water Supply Development Program

In evaluating the availability of sufficient water supply, the University Villages project proponents are required to participate in the development of alternative water supply project(s). This can be achieved through payment of the New Water Supply Fee adopted by the Otay WD Board in May 2010. These water supply projects, detailed in the Otay WD's 2010 UWMP, are in addition to those identified as sustainable supplies in the current Water Authority and MWD UWMP, IRP, Master Plans, and other planning documents. These new water supply projects are in response to the regional water supply issues. These new additional water supply projects are not currently developed and are in various stages of the planning process. A few examples of these alternative water supply projects include the Middle Sweetwater River Basin Groundwater Well project, the North District Recycled Water Supply Concept, the Rosarito Ocean Desalination Facility project, and the Rancho del Rey Groundwater Well project. The Water Authority and MWD next forecast and supply planning documents would capture any increase in water supplies resulting from any new water resources developed by the Otay WD.

Findings

The WSA&V Report identifies and describes the processes by which water demand projections for the proposed project will be fully included in the water demand and supply

forecasts of the Urban Water Management Plans and other water resources planning documents of the Water Authority and MWD. Water supplies necessary to serve the demands of the proposed project, along with existing and other projected future users, as well as the actions necessary and status to develop these supplies, have been identified in the University Villages project WSA&V Report and will be included in the future water supply planning documents of the Water Authority and MWD.

This WSA&V Report includes, among other information, an identification of existing water supply entitlements, water rights, water service contracts, water supply projects, or agreements relevant to the identified water supply needs for the proposed University Villages project. The WSA&V Report demonstrates and documents that sufficient water supplies are planned for and are intended to be available over a 20-year planning horizon, under normal conditions and in single-dry and multiple-dry years to meet the projected demand of the proposed project and the existing and other planned development projects to be served by the Otay WD.

Accordingly, after approval of a WSA&V Report for the University Villages project by the Otay WD Board of Directors (Board), the WSA&V Report may be used to comply with the requirements of the legislation enacted by Senate Bills 610 and 221 as follows:

1. Senate Bill 610 Water Supply Assessment: The Otay WD Board approved WSA&V Report may be incorporated into the California Environmental Quality Act (CEQA) Environmental Impact Report (EIR) compliance process for the University Villages project as a water supply assessment report consistent with the requirements of the legislation enacted by SB 610. The City as lead agency under CEQA for the University Villages project EIR may cite the approved WSA&V Report as evidence that a sufficient water supply is planned for and is intended to be made available to serve the University Villages project.
2. Senate Bill 221 Water Supply Verification: The Otay WD Board approved WSA&V Report may be incorporated into the City's Tentative Map approval process for the Otay Ranch University Villages project as a water supply verification report, consistent with the requirements of the legislation enacted by SB 221. The City, within their process of approving the Otay Ranch University Villages project's Tentative Map, may cite the approved WSA&V Report as verification of intended sufficient water supply to serve the Otay Ranch University Villages project.

Section 1 - Purpose

The University Villages project is located in the southern Otay Ranch area. SSBT LCRE, LLC submitted an entitlement application package to the City of Chula Vista (City) for the development of the University Villages project. The City requested that Otay WD prepare a

Water Supply Assessment and Verification Report (WSA&V Report) for the University Villages project. The current University Villages project description is provided in Section 3 of this WSA&V Report.

This WSA&V Report for the University Villages project has been prepared by the Otay WD in consultation with Dexter Wilson Engineering, Inc., the San Diego County Water Authority (Water Authority), and the City pursuant to Public Resources Code Section 21151.9 and California Water Code Sections 10631, 10656, 10910, 10911, 10912, and 10915 referred to as Senate Bill (SB) 610 and Business and Professions Code Section 11010 and Government Code Sections 65867.5, 66455.3, and 66473.7 referred to as SB 221. SB 610 and SB 221 amended state law, effective January 1, 2002, intending to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 requires that the water purveyor of the public water system prepare a water supply assessment to be included in the California Environmental Quality Act (CEQA) environmental documentation and approval process of certain proposed projects. SB 221 requires affirmative written verification from the water purveyor of the public water system that sufficient water supplies are to be available for certain residential subdivisions of property prior to approval of a tentative map. The requirements of SB 610 and SB 221 are being addressed by this WSA&V Report.

The City also requested, since the requirements of SB 610 and SB 221 are substantially similar, that Otay WD prepare both the water supply assessment and verification concurrently.

This WSA&V Report evaluates water supplies that are planned to be available during normal, single-dry year, and multiple-dry water years during a 20-year planning horizon to meet existing demands, expected demands of the University Villages project, and reasonably foreseeable planned future water demands served by Otay WD. The Otay WD Board of Directors approved WSA&V Report is planned to be used by the City in its evaluation of the University Villages project under the CEQA and Tentative Map approval processes.

Section 2 - Findings

The Otay WD prepared this WSA&V Report at the request of the City for the University Villages project. SSBT LCRE, LLC submitted an entitlement application to the City for the University Villages project.

The University Villages Project is located within the jurisdictions of the Otay WD, the Water Authority, and MWD. To obtain permanent imported water supply service, land areas are required to be within the jurisdictions of the Otay WD, Water Authority, and MWD to utilize imported water supply.

The expected potable water demand for the University Villages Project is 2,137,232 gallons per day (gpd) or about 2,393 acre-feet per year (AFY). The current development plan is expected to increase the water demand for this project above what was projected in the District's 2009 Water Resources Master Plan, revised in November 2010, which estimated 2,352 AFY for the same parcels. The projected recycled water demand for the University Villages project is 550,334 gpd or 616 AFY, representing about 20% of the total University Villages project water demand.

The 41 AFY increase in demand is accounted for through the Accelerated Forecast Growth demand increment of the Water Authority's 2010 UWMP. As documented in this Plan, the Water Authority is planning to meet future and existing demands which include the demand increment associated with the accelerated forecasted growth. The Water Authority will assist its member agencies in tracking the environmental documents provided by the agencies that include water supply assessments and verification reports that utilize the accelerated forecasted growth demand increment to demonstrate supplies for the development. In addition, the next update of the demand forecast for the Water Authority's 2015 UWMP will be based on SANDAG's most recently updated forecast, which will include the Project. Therefore, based on the findings from the Otay WD's 2010 UWMP and the Water Authority's 2010 UWMP, this project will result in no unanticipated demands.

The University Villages project development proponents are required to use recycled water for irrigation and other appropriate uses. The primary benefit of using recycled water is that it will offset the potable water demands by an estimated 616 AFY. The 2010 WRMP Revision and the 2010 Urban Water Management Plan (UWMP) anticipated that the land area to be utilized for the University Villages project would use both potable and recycled water.

The Water Authority and MWD have an established process that ensures supplies are being planned to meet future growth. Any annexations and revisions to established land use plans are captured in the SANDAG updated forecasts for land use planning, demographics, and economic projections. SANDAG serves as the regional, intergovernmental planning agency that develops and provides forecast information. The Water Authority and MWD update their demand forecasts and supply needs based on the most recent SANDAG forecast approximately every five years to coincide with preparation of their urban water management plans. Prior to the next forecast update, local jurisdictions may require water supply assessment and/or verification reports for proposed land developments that are not within the Otay WD, Water Authority, nor MWD jurisdictions (i.e., pending or proposed annexations) or that have revised land use plans than reflected in the existing growth forecasts. Proposed land areas with pending or proposed annexations or revised land use plans typically result in creating higher demand and supply requirements than anticipated. The Otay WD, the Water Authority, and MWD next demand forecast and supply requirements and associated planning documents would then capture any increase or decrease in demands and required supplies as a result of annexations or revised land use planning decisions.

This process is utilized by the Water Authority and MWD to document the water supplies necessary to serve the demands of the proposed University Villages project, along with existing and other projected future users, as well as the actions necessary to develop these supplies. Through this process the necessary demand and supply information is thus assured to be identified and incorporated within the water supply planning documents of the Water Authority and MWD.

The Otay Water District 2010 UWMP included a water conservation component to comply with Senate Bill 7 of the Seventh Extraordinary Session (SBX 7-7), which became effective February 3, 2010. This new law was the water conservation component to the Delta legislation package, and seeks to achieve a 20 percent statewide reduction in urban per capita water use in California by December 31, 2020. Specifically, SBX 7-7 from this Extraordinary Session requires each urban retail water supplier to develop urban water use targets to help meet the 20 percent reduction goal by 2020 (20x2020), and an interim water reduction target by 2015.

Otay WD has adopted Method 1 to set its 2015 interim and 2020 water use targets. Method 1 requires setting the 2020 water use target to 80 percent of baseline per capita water use target as provided in the State's Draft 20x2020 Water Conservation Plan. The Otay WD 2015 target is 171 gpcd and the 2020 gpcd target at 80 percent of baseline is 152 gpcd.

The Otay WD's recent per capita water use has been declining to the point where current water use already meets the 2020 target for Method 1. This recent decline in per capita water use is largely due to drought water use restrictions, increased water costs, and economic conditions. However, Otay WD's effective water use awareness campaign and enhanced conservation mentality of its customers will likely result in some long-term carryover of these reduced consumption rates.

In evaluating the availability of sufficient water supply, the University Villages project proponents are required to participate in the development of alternative water supply project(s). This can be achieved through payment of the New Water Supply Fee adopted by the Otay Water District Board in May 2010. These water supply projects are in addition to those identified as sustainable supplies in the current Water Authority and MWD UWMP, IRP, Master Plans, and other planning documents. These new water supply projects are in response to the regional water supply issues related to the Sacramento-San Joaquin Delta and the current ongoing western states drought conditions. These new additional water supply projects are not currently developed and are in various stages of the planning process. A few examples of these alternative water supply projects include the Middle Sweetwater River Basin Groundwater Well project, the North District Recycled Water Supply Concept, the Rosarito Ocean Desalination Facility project, and the Rancho del Rey Groundwater Well project. The Water Authority and MWD next forecast and supply planning documents would capture any increase in water supplies resulting from any new water resources developed by the Otay WD.

Water supplies necessary to serve the demands of the proposed University Villages project, along with existing and other reasonably foreseeable projected future users, as well as the actions necessary and status to develop these supplies, will be identified and included within the water supply planning documents of the Water Authority and MWD. This WSA&V Report demonstrates and verifies that with development of the resources currently identified and those that may be additional acquired, that there is sufficient water supplies being planned for and is intended to be developed over the next 20-year planning horizon to meet the projected demand of the proposed University Villages project and the existing and other reasonably foreseeable planned development projects within the Otay WD.

This WSA&V Report includes, among other information, an identification of existing water supply entitlements, water rights, water service contracts, proposed water supply projects, or agreements relevant to the identified water supply needs for the proposed University Villages project. This WSA&V Report incorporates by reference the current Urban Water Management Plans and other water resources planning documents of the Otay WD, the Water Authority, and MWD. The Otay WD prepared this WSA&V to verify and document that sufficient water supplies are being planned for and are intended to be acquired to meet projected water demands of the University Villages project and the existing and other reasonably foreseeable planned development projects within the Otay WD for a 20-year planning horizon, in normal supply years, and in single-dry and multiple-dry years.

Based on a normal water supply year, the five-year increments for a 20-year projection indicate projected potable and recycled water supply is being planned for and is intended to be acquired to meet the estimated water demand targets of the Otay WD (44,883 acre-feet (ac-ft) in 2015 to 56,614 ac-ft in 2035 per the Otay Water District 2010 UWMP). Based on dry year forecasts, the estimated water supply is also being planned for and is intended to be acquired to meet the projected water demand, during single-dry and multiple-dry year scenarios. On average, the dry year demands are about 6.4 percent higher than the normal year demands. The Otay WD recycled water supply is assumed to be drought-proof and not subject to reduction during dry periods.

Together, these findings demonstrate and verify that sufficient water supplies are being planned for and are intended to be acquired, as well as the actions necessary and status to develop these supplies are and will be further documented, to serve the proposed Villages 3 North, a Portion of 4, 8 East, and 10 project and the existing and other reasonably foreseeable planned projects within the Otay WD in both normal and single-dry and multiple-dry year forecasts for a 20-year planning horizon.

Section 3 - Project Description

The University Villages project is located within the City of Chula Vista, California. Refer to Appendix A for a regional location map of the proposed project.

The University Villages project is included within a land use planning document known as the Otay Ranch General Development Plan/Sub-regional Plan (Otay Ranch GDP). The County of San Diego and City of Chula Vista jointly prepared and adopted the Otay Ranch GDP. The University Villages project is located within what is defined as the Otay River Parcel of the Otay Ranch GDP. The project is a part of the designated 14 villages and five planning areas within the Otay Ranch GDP area. The University Villages project current development plan approval is dependent on the City's eventual adoption of their entitlement application.

The Chula Vista City Council and the San Diego County Board of Supervisors adopted the Otay Ranch GDP on October 28, 1993, which was accompanied by a Program Environmental Impact Report EIR-90-01 (SCH #89010154).

The approximately 23,000 acre Otay Ranch is a master-planned community that includes a broad range of residential, commercial, retail, and industrial development interwoven with civic and community uses, such as libraries, parks, and schools, together with an open space preserve system consisting of approximately 11,375 acres.

The proposed development concept for the University Villages project is planned as a combination of land uses as shown in Table 1.

Table 1
Otay Ranch University Villages Proposed Land Uses

Location	Land Use Description	Area	Dwelling Units
Village 3 North/portion of 4	Single Family Residential	114.7	1,002
Village 3 North/portion of 4	Multi-Family Residential	12.3	595
Village 3 North/portion of 4	Commercial - Mixed Use	7.3	---
Village 3 North/portion of 4	Commercial - Office	6.5	---
Village 3 North/portion of 4	Industrial	23.1	---
Village 3 North/portion of 4	Park	25.7	---
Village 3 North/portion of 4	CPF	2.6	---
Village 3 North/portion of 4	School	8.3	---
Village 3 North/portion of 4	Open Space/Circulation	227.7 acres	---
Subtotal		428 acres	1,597
Village 8 East	Single Family	119	963
Village 8 East	Multi-Family	46.2	2,597
Village 8 East	Commercial - Mixed Use	8.6	---
Village 8 East	School	10.8	---

Village 8 East	Park	58.8	---
Village 8 East	CPF	2.6	---
Village 8 East	Open Space/Circulation	327.6	---
Subtotal		573.6	3,560
Village 10	Single Family	74.8	691
Village 10	Multi-Family	21.5	1,049
Village 10	School	9.2	---
Village 10	Park	7.6	---
Village 10	CPF	2.6	---
Village 10	Open Space/Circulation	246	---
Subtotal		361.7	1,740
TOTAL		1,363.3	6,897

The proposed development within Village 3 North and a Portion of Village 4 is a pedestrian and transit oriented village containing 1,597 homes arranged around a mixed use core with up to 20,000 square feet of retail commercial, an elementary school, and park sites. Village 8 East is planned as a pedestrian oriented urban village with 3,560 mixed density residential units, up to 20,000 square feet of commercial retail, an elementary school, and a neighborhood park. Village 10 is planned as a pedestrian oriented urban village with 1,740 mixed density residential units, an elementary school, and park sites. The project is located along the northerly edge of the Otay River Valley. Refer to Appendix B for the proposed development plan of the University Villages project.

The City has identified discretionary actions and/or permit approval requirements for the University Villages project. The projected potable and recycled water demands and resulting water supply requirements associated with the University Villages project have considered the discretionary actions and/or permit approvals and are incorporated into and used in this WSA&V Report. The water demands for the proposed University Villages project are provided in Section 5 – Historical and Projected Water Demands.

Section 4 – Otay Water District

The Otay WD is a municipal water district formed in 1956 pursuant to the Municipal Water District Act of 1911 (Water Code §§ 71000 et seq.). The Otay WD joined the Water Authority as a member agency in 1956 to acquire the right to purchase and distribute imported water throughout its service area. The Water Authority is an agency responsible for the wholesale supply of water to its 24 public agency members in San Diego County.

The Otay WD currently relies on the Water Authority for 100 percent of its treated potable water supply. The Water Authority is the agency responsible for the supply of imported water into San Diego County through its membership in MWD. The Water Authority currently obtains the vast majority of its imported supply from MWD, but is in the process of diversifying its available supplies.

The Otay WD provides water service to residential, commercial, industrial, and agricultural customers, and for environmental and fire protection uses. In addition to providing water throughout its service area, Otay WD also provides sewage collection and treatment services to a portion of its service area known as the Jamacha Basin. The Otay WD also owns and operates the Ralph W. Chapman Water Reclamation Facility (RWCWRF) which has an effective treatment capacity of 1.2 million gallons per day (MGD) or about 1,300 acre-feet per year (ac-ft/yr) to produce recycled water. On May 18, 2007 an additional source of recycled water supply, at least 6 MGD or about 6,720 ac-ft/yr, became available to Otay WD from the City of San Diego's South Bay Water Reclamation Plant (SBWRP).

The Otay WD jurisdictional area is generally located within the south central portion of San Diego County and includes approximately 125 square miles. The Otay WD serves portions of the unincorporated communities of southern El Cajon, La Mesa, Rancho San Diego, Jamul, Spring Valley, Bonita, and Otay Mesa, the eastern portion of the City of Chula Vista and a portion of the City of San Diego on Otay Mesa. The Otay WD jurisdiction boundaries are roughly bounded on the north by the Padre Dam Municipal Water District, on the northwest by the Helix Water District, and on the west by the South Bay Irrigation District (Sweetwater Authority) and the City of San Diego. The southern boundary of Otay WD is the international border with Mexico.

The planning area addressed in the Otay WD 2010 Water Resources Master Plan Update and the Otay WD 2010 Urban Water Management Plan (2010 UWMP) includes the land within the jurisdictional boundary of the Otay WD and those areas outside of the present Otay WD boundaries considered to be in the Area of Influence of the Otay WD. Figure 2-1 contained within the Otay WD 2010 WRMP Revision shows the jurisdictional boundary of the Otay WD and the Area of Influence. The planning area is approximately 143 square miles, of which approximately 125 square miles are within the Otay WD current boundaries and approximately 18 square miles are in the Area of Influence. The area east of Otay WD is rural and currently not within any water purveyor jurisdiction and potentially could be served by the Otay WD in the future if the need for imported water becomes necessary, as is the case for the Area of Influence.

The City of Chula Vista, the City of San Diego, and the County of San Diego are the three land use planning agencies within the Otay WD jurisdiction. Data on forecasts for land use planning, demographics, economic projections, population, and the future rate of growth within Otay WD were obtained from SANDAG. SANDAG serves as the regional, intergovernmental planning agency that develops and provides forecast information through the year 2050. Population growth within the Otay WD service area is expected to increase

from the 2010 figure of approximately 198,616 to an estimated 284,997 by 2035. Land use information used to develop water demand projections are based upon Specific or Sectional Planning Areas, the Otay Ranch General Development Plan/Sub-regional Plan, East Otay Mesa Specific Plan Area, San Diego County Community Plans, and City of San Diego Otay Mesa Community Plan, City of Chula Vista, and County of San Diego General Plans.

The Otay WD long-term historic growth rate has been approximately 4 percent. The growth rate has significantly slowed due to the current economic conditions and it is expected to slow as the inventory of developable land is diminished.

Climatic conditions within the Otay WD service area are characteristically Mediterranean near the coast, with mild temperatures year round. Inland areas are both hotter in summer and cooler in winter, with summer temperatures often exceeding 90 degrees and winter temperatures occasionally dipping to below freezing. Most of the region's rainfall occurs during the months of December through March. Average annual rainfall is approximately 12.17 inches per year.

Historic climate data were obtained from the Western Regional Climate Center for Station 042706 (El Cajon). This station was selected because its annual temperature variation is representative of most of the Otay WD service area. While there is a station in the City of Chula Vista, the temperature variation at the City of Chula Vista station is more typical of a coastal environment than the conditions in most of the Otay WD service area.

4.1 Urban Water Management Plan

In accordance with the California Urban Water Management Planning Act and recent legislation, the Otay WD Board of Directors adopted an UWMP in June 2011 and subsequently submitted the plan to the California Department of Water Resources (DWR). As required by law, the Otay Water District 2010 UWMP includes projected water supplies required to meet future demands through 2035. In accordance with Water Code Section 10910 (c)(2) and Government Code Section 66473.7 (c)(3), information from the Otay WD 2010 UWMP along with supplemental information from the 2010 Otay WD WRMP Revision have been utilized to prepare this WSA Report and are incorporated herein by reference.

The state Legislature passed Senate Bill 7 as part of the Seventh Extraordinary Session (SBX 7-7) on November 10, 2009, which became effective February 3, 2010. This new law was the water conservation component to the Delta legislation package and seeks to achieve a 20 percent statewide reduction in urban per capita water use in California by December 31, 2020. Specifically, SBX 7-7 from this Extraordinary Session requires each urban retail water supplier to develop urban water use targets to help meet the 20 percent reduction goal by 2020 (20x2020), and an interim water reduction target by 2015.

The SBX 7-7 target setting process includes the following: (1) baseline daily per capita water use; (2) urban water use target; (3) interim water use target; (4) compliance daily per capita

water use, including technical bases and supporting data for those determinations. In order for an agency to meet its 2020 water use target, each agency can increase its use of recycled water to offset potable water use and also step up its water conservation measures. The required water use targets for 2020 and an interim target for 2015 are determined using one of four target methods – each method has numerous methodologies. The 2020 urban water use target may be updated in a supplier’s 2015 UWMP.

In 2015, urban retail water suppliers will be required to report interim compliance followed by actual compliance in 2020. Interim compliance is halfway between the baseline water use and 2020 target. Baseline, target, and compliance-year water use estimates are required to be reported in gallons per capita per day (gpcd).

Failure to meet adopted targets will result in the ineligibility of a water supplier to receive grants or loans administered by the State unless one (1) of two (2) exceptions is met. Exception one (1) states a water supplier may be eligible if they have submitted a schedule, financing plan, and budget to DWR for approval to achieve the per capita water use reductions. Exception two (2) states a water supplier may be eligible if an entire water service area qualifies as a disadvantaged community.

Otay WD has adopted Method 1 to set its 2015 interim and 2020 water use targets. Method 1 requires setting the 2020 water use target to 80 percent of baseline per capita water use target as provided in the State’s Draft 20x2020 Water Conservation Plan. The Otay WD 2015 target is 171 gpcd and the 2020 gpcd target at 80 percent of baseline is 152 gpcd.

The Otay WD’s recent per capita water use has been declining to the point where current water use already meets the 2020 target for Method 1. This recent decline in per capita water use is largely due to drought water use restrictions, increased water costs, and poor economic conditions. However, Otay WD’s effective water use awareness campaign and enhanced conservation mentality of its customers will likely result in some long-term carryover of these reduced consumption rates beyond the current drought period.

Section 5 – Historical and Projected Water Demands

The projected demands for Otay WD are based on Specific or Sectional Planning Areas, the Otay Ranch General Development Plan/Sub-regional Plan, the East Otay Mesa Specific Plan Area, San Diego County Community Plans, and City of San Diego Otay Mesa Community Plan, City of Chula Vista and County of San Diego General Plans. This land use information is also used by SANDAG as the basis for its most recent forecast data. This land use information is utilized in the preparation of the Otay WD 2010 WRMP Revision, and the Otay WD 2010 UWMP in order to develop the forecasted demands and supply requirements.

In 1994, the Water Authority selected the Institute for Water Resources-Municipal and Industrial Needs (MAIN) computer model to forecast municipal and industrial water use for

the San Diego region. The MAIN model uses demographic and economic data to project sector-level water demands (i.e., residential and non-residential demands). This econometric model has over a quarter of a century of practical application and is used by many cities and water agencies throughout the United States. The Water Authority's version of the MAIN model was modified to reflect the San Diego region's unique parameters and is known as CWA-MAIN.

The foundation of the water demand forecast is the underlying demographic and economic projections. This was a primary reason, why, in 1992 the Water Authority and SANDAG entered into a Memorandum of Agreement (MOA), in which the Water Authority agreed to use the SANDAG current regional growth forecast for water supply planning purposes. In addition, the MOA recognizes that water supply reliability must be a component of San Diego County's regional growth management strategy required by Proposition C, as passed by the San Diego County voters in 1988. The MOA ensures a strong linkage between local general plan land use forecasts and water demand projections and resulting supply needs for the San Diego region.

Consistent with the previous CWA-MAIN modeling efforts, on February 26, 2010, the SANDAG Board of Directors accepted the Series 12: 2050 Regional Growth Forecast. The 2050 Regional Growth Forecast will be used by SANDAG as the foundation for the next Regional Comprehensive Plan update. SANDAG forecasts also are used by local governments for planning, including the San Diego County Water Authority 2010 Urban Water Management Plan update.

The municipal and industrial forecast also included an updated accounting of projected conservation savings based on projected regional implementation of the California Urban Water Conservation Council (CUWCC) Best Management Practices and SANDAG demographic information for the period 2010 through 2035. These savings estimates were then factored into the baseline municipal and industrial demand forecast.

A separate agricultural model, also used in prior modeling efforts, was used to forecast agricultural water demands within the Water Authority service area. This model estimates agricultural demand to be met by the Water Authority's member agencies based on agricultural acreage projections provided by SANDAG, crop distribution data derived from the Department of Water Resources and the California Avocado Commission, and average crop-type watering requirements based on California Irrigation Management Information System data.

The Water Authority and MWD update their water demand and supply projections within their jurisdictions utilizing the SANDAG most recent growth forecast to project future water demands. This provides for the important strong link between demand and supply projections to the land use plans of the cities and the county. This provides for consistency between the retail and wholesale agencies water demand projections, thereby ensuring that adequate supplies are and will be planned for the Otay WD existing and future water users. Existing

land use plans, any revisions to land use plans, and annexations are captured in the SANDAG updated forecasts. The Water Authority and MWD will update their demand forecasts based on the SANDAG most recent forecast approximately every five years to coincide with preparation of their urban water management plans. Prior to the next forecast update, local jurisdictions may require water supply assessment and/or verification reports consistent with Senate Bills 610 and 221 for proposed land use developments that either have pending or proposed annexations into the Otay WD, Water Authority, and MWD or that have revised land use plans than originally anticipated. The Water Authority and MWD's next forecast and supply planning documents would then capture any increase or decrease in demands caused by annexations or revised land use plans.

In evaluating the availability of sufficient water supply, the University Villages project proponents are required to participate in the development of alternative water supply project(s). This can be achieved through payment of the New Water Supply Fee adopted by the Otay WD Board in May 2010. These water supply projects are in addition to those identified as sustainable supplies in the current Water Authority and MWD UWMP, IRP, Master Plans, and other planning documents. These new water supply projects are in response to the regional water supply issues related to climatological, environmental, legal, and other challenges that impact water source supply conditions, such as the court rulings regarding the Sacramento-San Joaquin Delta and the current ongoing western states drought conditions. These new additional water supply projects are not currently developed and are in various stages of the planning process. A few examples of these alternative water supply projects include the Middle Sweetwater River Basin Groundwater Well project, the North District Recycled Water Supply Concept, the Rosarito Ocean Desalination Facility project, and the Rancho del Rey Groundwater Well project. The Water Authority and MWD's next forecast and supply planning documents would capture any increase in water supplies resulting from any new water resources developed by the Otay WD.

In addition, MWD's 2010 Regional UWMP identified potential reserve supplies in the supply capability analysis (Tables 2-9, 2-10, and 2-11), which could be available to meet any unanticipated demands. The Water Authority and MWD's next forecast and supply planning documents would capture any increase in necessary supply resources resulting from any new water supply resources.

The Otay WD water demand projection methodology utilizes a component land use approach. This is done by applying representative values of water use to the acreage of each land use type and then aggregating these individual land use demand projections into an overall total demand for the Otay WD. This is called the water duty method, and the water duty is the amount of water used in acre-feet per acre per year. This approach is used for all the land use types except residential development where a demand per dwelling unit was applied. In addition, commercial and industrial water use categories are further subdivided by type including separate categories for golf courses, schools, jails, prisons, hospitals, etc. where specific water demands are established.

To determine water duties for the various types of land use, the entire water meter database of the Otay WD is utilized and sorted by the appropriate land use types. The metered consumption records are then examined for each of the land uses, and water duties are determined for the various types of residential, commercial, industrial, and institutional land uses. For example the water duty factors for commercial and industrial land uses are estimated using 1,785 and 893 gallons per day per acre, respectively. Residential water demand is established based on the same data but computed on a per-dwelling unit basis. The focus is to ensure that for each of the residential land use categories (very low, low, medium, and high densities), the demand criteria used is adequately represented based upon actual data. This method is used because residential land uses constitute a substantial percentage of the total developable planning area of the Otay WD.

The 2010 WRMP Revision calculates potable water demand by taking the gross acreage of a site and applying a potable water reduction factor (PWRF), which is intended to represent the percentage of acreage to be served by potable water and that not served by recycled water for irrigation. For industrial land use, as an example, the PWRF is 0.95 (i.e., 95% of the site is assumed to be served by potable water, 5% of the site is assumed to be irrigated with recycled water). The potable net acreage is then multiplied by the unit demand factor corresponding to its respective land use. This approach is used in the 2010 WRMP Revision for all the land use types except residential development where a demand per dwelling unit is applied. In addition, commercial and industrial water use categories are further subdivided by type including separate categories for golf courses, schools, jails, prisons, hospitals, etc. where specific water demands are allocated.

By applying the established water duties to the proposed land uses, the projected water demand for the entire Otay WD planning area at ultimate development is determined. Projected water demands for the intervening years were determined using growth rate projections consistent with data obtained from SANDAG and the experience of the Otay WD.

The historical and projected potable water demands for Otay WD are shown in Table 2.

Table 2
Historical and Projected Potable Water Fiscal Year Demands (acre-feet)

Water Use Sectors	2005	2010	2015	2020	2025	2030	2035
Single Family	21,233	17,165	23,633	28,312	33,600	37,211	40,635
Multi-Family	3,095	3,605	3,444	4,126	4,897	5,423	5,922
Commercial &	1,657	2,243	1,844	2,209	2,622	2,904	3,171
Institutional &	2,262	1,867	2,518	3,017	3,580	3,965	4,330
Landscape	6,458	3,732	10,134	12,141	14,408	15,957	17,425
Other	2,426	584	2,700	3,235	3,839	4,252	4,643
Unaccounted for	547	23	608	729	865	958	1,046
Totals	37,678	29,219	44,881	53,769	63,811	70,670	77,172

Source: Otay Water District 2010 UWMP.

The historical and projected recycled water demands for Otay WD are shown in Table 3.

Table 3
Historical and Projected Recycled Water Fiscal Year Demands (acre-feet)

Water Use Sector	2005	2010	2015	2020	2025	2030	2035
Landscape	4,090	4,000	4,400	5,000	5,800	6,800	8,000
Totals	4,090	4,000	4,400	5,000	5,800	6,800	8,000

Source: Otay Water District 2010 UWMP, Table 10.

Using the land use demand projection criteria as established in the Otay WD 2010 WRMP Revision, the current projected potable water demand for the proposed University Villages project is shown in Table 4, which totals approximately 2.14 MGD or about 2,393 ac-ft/yr. This is 41 ac-ft/yr greater than what was estimated in the November 2010 WRMP revision.

Table 4
University Villages
(Villages 3 North, a Portion of 4, 8 East, and 10)
Projected Potable Water Annual Average Demands

Location (Land Use)	Quantity	Potable Water Factor	Net Potable Acreage/Units	Unit Rate	Average Demand, gpd
Village 3 North/Portion of 4					
SF Residential(3-8 DU/ac)	290 units	100%		500 gpd/unit	145,000
SF Residential (>8 DU/ac)	712 units	100%		300 gpd/unit	213,600
MF/MU Residential	595 units	85%		255 gpd/unit	151,725
Commercial/Mixed Use	7.3 ac	90%	6.57	1,785 gpd/ac	11,731
Commercial/Office	6.5 ac	90%	5.85	1,785 gpd/ac	10,446
Industrial	23.1 ac	95%	21.95	893 gpd/ac	19,589
School	8.3 ac	80%	6.64	1,785 gpd/ac	11,850
CPF	2.6 ac	90%	2.34	793 gpd/ac	1,856
Parks ¹	25.7 ac				2,160
SubTotal					567,959
Village 8 East					
SF Residential (3-8 DU/ac)	317 units	100%		500 gpd/unit	158,500
SF Residential (>8 DU/ac)	646 units	100%		300 gpd/unit	193,800
MF/MU Residential	2,597 units	85%		255 gpd/unit	662,235
Commercial/Mixed Use	8.6 ac	90%	7.74	1,785 gpd/ac	13,820
School	10.8 ac	80%	8.64	1,785 gpd/ac	15,422
CPF	2.6 ac	90%	2.34	793 gpd/ac	1,856
Parks ¹	58.8 ac				6,891
Subtotal					1,052,524
Village 10					
SF Residential (3-8 DU/ac)	124 units	100%		500 gpd/unit	62,000
SF Residential (>8 DU/ac)	567 units	100%		300 gpd/unit	170,100
MF Residential	1,049 units	85%		255 gpd/unit	267,495
School	9.2 ac	80%	7.36	1,785 gpd/ac	13,138
CPF	2.6 ac	90%	2.34	793 gpd/ac	1,856
Parks ¹	7.6 ac				2,160
Subtotal					516,749
TOTAL					2,137,232

¹ Accounts for nominal potable water use at park sites based on fixture counts.

The current projected recycled water demand for the proposed University Villages project is provided in Table 5, which totals approximately 0.55 MGD or about 616 ac-ft/yr, representing about 20% of the total University Villages project demand.

Table 5
Villages 3 North, a Portion of 4, 8 East, and 10 Projected Recycled
Water Average Demands

Location (Land Use)	Quantity	Recycled Water Factor	Net Recycled Acreage	Unit Rate	Average Demand, gpd
Village 3 North/Portion of 4					
Open Space	38 ac	100%	38	2,155 gpd/ac	81,890
Parks	25.7 ac	100%	25.7	2,155 gpd/ac	55,385
Office/Commercial	12.5 ac	10%	1.25	2,155 gpd/ac	2,695
Industrial	28.5 ac	5%	1.4	2,155 gpd/ac	3,020
MF/MU Residential	595 units	15%		45 gpd/unit	26,775
School	8.3 ac	20%	1.7	2,155 gpd/ac	3,660
Subtotal					173,425
Village 8 East					
Open Space	11 ac	100%	11	2,155 gpd/ac	23,705
Parks	58.8 ac	100%	58.8	2,155 gpd/ac	126,714
School	10.8 ac	20%	2.2	2,155 gpd/ac	4,740
CPF	4.2 ac	10%	0.4	2,155 gpd/ac	862
MF Residential	2,597 units	15%		45 gpd/unit	116,865
Subtotal					272,886
Village 10					
Open Space	16.5 ac	100%	16.5	2,155 gpd/unit	35,558
Parks	7.6 ac	100%	7.6	2,155 gpd/unit	16,378
School	9.2 ac	20%	1.84	2,155 gpd/unit	3,965
CPF	4.3 ac	10%	0.43	2,155 gpd/unit	927
MF Residential	1,049 units	15%		45 gpd/unit	47,205
Subtotal					104,033
TOTAL					550,334

5.1 Demand Management (Water Conservation)

Demand management, or water conservation is a critical part of the Otay WD 2010 UWMP and its long-term strategy for meeting water supply needs of the Otay WD customers. Water conservation, is frequently the lowest cost resource available to any water agency. The goals of the Otay WD water conservation programs are to:

- Reduce the demand for more expensive, imported water.
- Demonstrate continued commitment to the Best Management Practices (BMP).
- Ensure a reliable water supply.

The Otay WD is signatory to the Memorandum of Understanding (MOU) Regarding Urban Water Conservation in California, which created the California Urban Water Conservation Council (CUWCC) in 1991 in an effort to reduce California's long-term water demands. Water conservation programs are developed and implemented on the premise that water conservation increases the water supply by reducing the demand on available supply, which is vital to the optimal utilization of a region's water supply resources. The Otay WD participates in many water conservation programs designed and typically operated on a shared cost participation program basis among the Water Authority, MWD, and their member agencies. The demands shown in Tables 2 and 3 take into account implementation of water conservation measures within Otay WD.

As one of the first signatories to the MOU Regarding Urban Water Conservation in California, the Otay WD has made BMP implementation for water conservation the cornerstone of its conservation programs and a key element in its water resource management strategy. As a member of the Water Authority, Otay WD also benefits from regional programs performed on behalf of its member agencies. The BMP programs implemented by Otay WD and regional BMP programs implemented by the Water Authority that benefit all their member agencies are addressed in the Otay WD 2010 UWMP. In partnership with the Water Authority, the County of San Diego, City of San Diego, City of Chula Vista, and developers, the Otay WD water conservation efforts are expected to grow and expand. The resulting savings directly relate to additional available water in the San Diego County region for beneficial use within the Water Authority service area, including the Otay WD.

Additional conservation or water use efficiency measures or programs practiced by the Otay WD include the following:

- Supervisory Control and Data Acquisition System

The Otay WD implemented and has operated for many years a Supervisor Control and Data Acquisition (SCADA) system to control, monitor, and collect data regarding the operation of the water system. The major facilities that have SCADA capabilities are the water flow control supply sources, transmission network, pumping stations, and water storage reservoirs. The SCADA system allows for many and varied useful functions.

Some of these functions provide for operating personnel to monitor the water supply source flow rates, reservoir levels, turn on or off pumping units, etc. The SCADA system aids in the prevention of water reservoir overflow events and increases energy efficiency.

- Water Conservation Ordinance

California Water Code Sections 375 et seq. permit public entities which supply water at retail to adopt and enforce a water conservation program to reduce the quantity of water used by the people therein for the purpose of conserving water supplies of such public entity. The Otay WD Board of Directors established a comprehensive water conservation program pursuant to California Water Code Sections 375 et seq., based upon the need to conserve water supplies and to avoid or minimize the effects of any future shortage. A water shortage could exist based upon the occurrence of one or more of the following conditions:

1. A general water supply shortage due to increased demand or limited supplies.
2. Distribution or storage facilities of the Water Authority or other agencies become inadequate.
3. A major failure of the supply, storage, and distribution facilities of MWD, Water Authority, and/or Otay WD.

The Otay WD water conservation ordinance finds and determines that the conditions prevailing in the San Diego County area require that the available water resources be put to maximum beneficial use to the extent to which they are capable, and that the waste or unreasonable use, or unreasonable method of use, of water be prevented and that the conservation of such water be encouraged with a view to the maximum reasonable and beneficial use thereof in the interests of the people of the Otay WD and for the public welfare.

Otay WD is currently engaged in a number of conservation and water use efficiency activities. Listed below are the current programs that are either on-going or were recently concluded:

- Residential Water Surveys: 1,349 completed since 1994
- Large Landscape Surveys: 194 completed since 1990
- Cash for Water Smart Plants Landscape Retrofit Program: over 217,600 square feet of turf grass replaced with water wise plants since 2003
- Rotating Nozzles Rebated: 3,170
- Residential Weather-Based Irrigation Controller (WBIC) Incentive Program: 231 distributed or rebated since 2004
- Residential High Efficiency Clothes Washers: 7,187 rebates since 1994
- Residential ULFT/HET Rebate Program: 22,376 rebates provided between 1991-2010
- Outreach Efforts to Otay WD Customers - the Otay WD promotes its conservation programs through staffing outreach events, bill inserts, articles in the Otay WD's

quarterly customer Pipeline newsletter, direct mailings to Otay WD customers, the Otay WD's webpage and through the Water Authority's marketing efforts.

- School Education Programs- the Otay WD funds school tours of the Water Conservation Garden, co-funds Splash Labs, provides classroom water themed kits, maintains a library of school age appropriate water themed books, DVDs, and videos, and runs both a school poster contest and a water themed photo contest.
- Water efficiency in new construction through Cal Green and the Model Water Efficient Landscape Ordinance

Focus on Commercial/Institutional/Industrial through Promoting MWD's Save a Buck (Commercial) Program in conjunction with the Otay WD's own Commercial Process Improvement Program

As a signatory to the MOU Regarding Urban Water Conservation in California, the Otay WD is required to submit biannual reports that detail the implementation of current water conservation practices. The Otay WD voluntarily agreed to implement the fourteen water conservation Best Management Practices beginning in 1992. The Otay WD submits its report to the CUWCC every two years. The Otay WD BMP Reports for 2005 to 2010, as well as the BMP Coverage Report for 1999-2010, are included in the Otay WD 2010 UWMP.

The Villages 3 North, a Portion of 4, 8 East, and 10 project will implement the CUWCC Best Management Practices for water conservation such as installation of ultra low flow toilets, development of a water conservation plan, and potential beneficial use of recycled water, all of which are typical requirements of development projects within the City of Chula Vista.

Section 6 - Existing and Projected Supplies

The Otay WD currently does not have an independent raw or potable water supply source. The Otay WD is a member public agency of the Water Authority. The Water Authority is a member public agency of MWD. The statutory relationships between the Water Authority and its member agencies, and MWD and its member agencies, respectively, establish the scope of the Otay WD entitlement to water from these two agencies.

The Water Authority through two delivery pipelines, referred to as Pipeline No. 4 and the La Mesa Sweetwater Extension Pipeline, currently supply the Otay WD with 100 percent of its potable water. The Water Authority in turn, currently purchases the majority of its water from MWD. Due to the Otay WD reliance on these two agencies, this WSA&V Report includes referenced documents that contain information on the existing and projected supplies, supply programs, and related projects of the Water Authority and MWD. The Otay WD, Water Authority, and MWD are actively pursuing programs and projects to diversify their water supply resources.

The description of local recycled water supplies available to the Otay WD is also discussed below.

6.1 Metropolitan Water District of Southern California 2010 Regional Urban Water Management Plan

In November 2010, MWD adopted its 2010 Regional Urban Water Management Plan (RUWMP). The 2010 RUWMP provides MWD's member agencies, retail water utilities, cities, and counties within its service area with, among other things, a detailed evaluation of the supplies necessary to meet future demands, and an evaluation of reasonable and practical efficient water uses, recycling, and conservation activities. During the preparation of the 2010 RUWMP, MWD also utilized the current SANDAG regional growth forecast in calculating regional water demands for the Water Authority service area.

6.1.1 Availability of Sufficient Supplies and Plans for Acquiring Additional Supplies

MWD is a wholesale supplier of water to its member public agencies and obtains its supplies from two primary sources: the Colorado River, via the Colorado River Aqueduct (CRA), which it owns and operates, and Northern California, via the State Water Project (SWP). The 2010 RUWMP documents the availability of these existing supplies and additional supplies necessary to meet future demands.

6.1.1.1 MWD Supplies

MWD's Integrated Resources Plan (IRP) identifies a mix of resources (imported and local) that, when implemented, will provide 100 percent reliability for full-service demands through the attainment of regional targets set for conservation, local supplies, State Water Project supplies, Colorado River supplies, groundwater banking, and water transfers. The 2010 update to the IRP (2010 IRP Update) includes a planning buffer supply intended to mitigate against the risks associated with implementation of local and imported supply programs. The planning buffer identifies an additional increment of water that could potentially be developed if other supplies are not implemented as planned. As part of implementation of the planning buffer, MWD periodically evaluates supply development to ensure that the region is not under or over-developing supplies. Managed properly, the planning buffer will help ensure that the southern California region, including San Diego County, will have adequate supplies to meet future demands.

In November 2010, MWD adopted its 2010 RUWMP in accordance with state law. The resource targets included in the preceding 2010 IRP Update serve as the foundation for the planning assumptions used in the 2010 RUWMP. MWD's 2010 RUWMP contains a water supply reliability assessment that includes a detailed evaluation of the supplies necessary to meet demands over a 25-year period in average, single-dry year, and multiple-dry year

periods. As part of this process, MWD also uses the current SANDAG regional growth forecast in calculating regional water demands for the Water Authority's service area.

As stated in MWD's 2010 RUWMP, that plan may be used as a source document for meeting the requirements of SB 610 and SB 221 until the next scheduled update is completed in 2015. The 2005 RUWMP includes a "Justifications for Supply Projections" in Appendix A.3, that provides detailed documentation of the planning, legal, financial, and regulatory basis for including each source of supply in the plan. A copy of MWD's 2010 RUWMP can be found on the World Wide Web at the following site address:

http://www.mwdh2o.com/mwdh2o/pages/yourwater/RUWMP/RUWMP_2010.pdf

Water supply agencies throughout California continue to face climatological, environmental, legal, and other challenges that impact water source supply conditions, such as the court rulings regarding the Sacramento-San Joaquin Delta and the current western states drought conditions. Challenges such as these essentially always will be present. The regional water supply agencies, the Water Authority and MWD, along with Otay WD nevertheless fully intend to have sufficient, reliable supplies to serve demands.

6.1.2 MWD Capital Investment Plan

As part of MWD's annual budget approval process, a Capital Investment Plan is prepared. The cost, purpose, justification, status, progress, etc. of MWD's infrastructure projects to deliver existing and future supplies are documented in the Capital Investment Plan. The financing of these projects is addressed as part of the annual budget approval process.

MWD's Capital Investment Plan includes a series of projects identified from MWD studies of projected water needs, which, when considered along with operational demands on aging facilities and new water quality regulations, identify the capital projects needed to maintain infrastructure reliability and water quality standards, improve efficiency, and provide future cost savings. All projects within the Capital Investment Plan are evaluated against an objective set of criteria to ensure they are aligned with the MWD's goals of supply reliability and quality.

6.2 San Diego County Water Authority Regional Water Supplies

The Water Authority has adopted plans and is taking specific actions to develop adequate water supplies to help meet existing and future water demands within the San Diego region. This section contains details on the supplies being developed by the Water Authority. A summary of recent actions pertaining to development of these supplies includes:

- In accordance with the Urban Water Management Planning Act, the Water Authority adopted their 2010 UWMP in June 2011. The updated Water Authority 2010 UWMP identifies a diverse mix of local and imported water supplies to meet future demands.

A copy of the updated Water Authority 2010 UWMP can be found on the internet at <http://www.sdcwa.org/2010-urban-water-management-plan>

- Deliveries of conserved agricultural water from the Imperial Irrigation District (IID) to San Diego County have increased annually since 2003, with 70,000 ac-ft of deliveries in Fiscal Year (FY) 2010. These quantities will increase annually to 200,000 ac-ft/yr by 2021, and then remain fixed for the duration of the transfer agreement.
- As part of the October 2003 Quantification Settlement Agreement (QSA), the Water Authority was assigned MWD's rights to 77,700 ac-ft/yr of conserved water from the All-American Canal (AAC) and Coachella Canal (CC) lining projects. Deliveries of this conserved water from the CC reached the region in 2007 and deliveries from the AAC reached the region in 2010. Expected supplies from the canal lining projects are considered verifiable Water Authority supplies.

Through implementation of the Water Authority and member agency planned supply projects, along with reliable imported water supplies from MWD, the region anticipates having adequate supplies to meet existing and future water demands.

To ensure sufficient supplies to meet projected growth in the San Diego region, the Water Authority uses the SANDAG most recent regional growth forecast in calculating regional water demands. The SANDAG regional growth forecast is based on the plans and policies of the land-use jurisdictions with San Diego County. The existing and future demands of the member agencies are included in the Water Authority's projections.

6.2.1 Availability of Sufficient Supplies and Plans for Acquiring Additional Supplies

The Water Authority currently obtains imported supplies from MWD, conserved water from the AAC and CC lining projects, and an increasing amount of conserved agricultural water from IID. Of the twenty-seven member agencies that purchase water supplies from MWD, the Water Authority is MWD's largest customer.

Section 135 of MWD's Act defines the preferential right to water for each of its member agencies. As calculated by MWD, the Water Authority's preferential right as of December 11, 2012 is 17.22 percent of MWD's supply, while the Water Authority accounted for approximately 25 percent of MWD's total revenue. Under preferential rights, MWD could allocate water without regard to historic water purchases or dependence on MWD. The Water Authority and its member agencies are taking measures to reduce dependence on MWD through development of additional supplies and a water supply portfolio that would not be jeopardized by a preferential rights allocation. MWD has stated, consistent with Section 4202 of its Administrative Code that it is prepared to provide the Water Authority's service area with adequate supplies of water to meet expanding and increasing needs in the years ahead. When and as additional water resources are required to meet increasing needs, MWD stated it

will be prepared to deliver such supplies. In Section ES-5 of their 2010 RUWMP, MWD states that MWD has supply capacities that would be sufficient to meet expected demands from 2015 through 2035. MWD has plans for supply implementation and continued development of a diversified resource mix including programs in the Colorado River Aqueduct, State Water Project, Central Valley Transfers, local resource projects, and in-region storage that enables the region to meet its water supply needs.

The Water Authority has made large investments in MWD’s facilities and will continue to include imported supplies from MWD in the future resource mix. As discussed in the Water Authority’s 2010 UWMP, the Water Authority and its member agencies are planning to diversify the San Diego regions supply portfolio and reduce purchases from MWD.

As part of the Water Authority’s diversification efforts, the Water Authority is now taking delivery of conserved agricultural water from IID and water saved from the AAC and CC lining projects. The CC lining project is complete and the Water Authority has essentially completed construction of the AAC lining project. Table 6 summarizes the Water Authority’s supply sources with detailed information included in the sections to follow. Deliveries from MWD are also included in Table 6, which is further discussed in Section 6.1 above. The Water Authority’s member agencies provided the verifiable local supply targets for groundwater, groundwater recovery, recycled water, and surface water, which are discussed in more detail in Section 5 of the Water Authority’s 2010 UWMP.

Table 6
Projected Verifiable Water Supplies – Water Authority Service Area
 Normal Year (acre-feet)

Water Supply Sources	2015	2020	2025	2030	2035
Water Authority Supplies					
MWD Supplies	358,189	230,601	259,694	293,239	323,838
Water Authority/IID Transfer	100,000	190,000	200,000	200,000	200,000
AAC and CC Lining Projects	80,200	80,200	80,200	80,200	80,200
Proposed Regional Seawater Desalination (1)	0	56,000	56,000	56,000	56,000
Member Agency Supplies					
Surface Water	48,206	47,940	47,878	47,542	47,289
Water Recycling	38,660	43,728	46,603	48,278	49,998
Groundwater	11,710	11,100	12,100	12,840	12,840
Groundwater Recovery	10,320	15,520	15,520	15,520	15,520
Total Projected Supplies	647,285	675,089	717,995	753,619	785,685

Source: Water Authority 2010 Urban Water Management Plan – Table 9-1.

Note 1: On November 29, 2012, the Water Authority approved a water purchase agreement with Poseidon for 48,000 AFY with the right to purchase up to 56,000 AFY

Section 5 of the Water Authority's 2010 UWMP also includes a discussion on the local supply target for seawater desalination. Seawater desalination supplies represent a significant future local resource in the Water Authority's service area.

The Carlsbad Desalination Project (Project) is a fully-permitted seawater desalination plant and conveyance pipeline designed to provide a highly reliable local supply of up to 56,000 acre-feet (AF) per year for the region. In 2020, the Project would account for approximately 8% of the total projected regional supply and 30% of all locally generated water in San Diego County. If the project becomes operational in 2016, it will more than double the amount of local supplies developed in the region since 1991. The desalination plant itself will be fully financed, built, and operated by Poseidon. The Water Authority will purchase water from the plant under a water purchase agreement. The new pipeline connecting the desalination plant with the Water Authority's Second Aqueduct will be owned and operated by the Water Authority, but responsibility for design and construction will reside with Poseidon through a separate Design-Build Agreement. The Water Authority will be responsible for aqueduct improvements, including the relining and rehabilitation of Pipeline 3 to accept desalinated water under higher operating pressures, modifications to the San Marcos Vent that allows the flow of water between Pipelines 3 and 4, and improvements at the Twin Oaks Valley Water Treatment Plant necessary to integrate desalinated water into the Water Authority's system for optimal distribution to member agencies.

On July 22, 2010, the Board approved a Term Sheet between the Water Authority and Poseidon Resources that outlined the key terms and conditions that would be detailed and incorporated in a comprehensive Water Purchase Agreement (WPA). Beginning in October 2011 and under the direction of the Board's Carlsbad Desalination Project Advisory Group, staff began developing and negotiating with Poseidon a WPA consistent with the July 22, 2010 Board approved Term Sheet. The July 2010 Term Sheet also identified specific conditions precedent to Board consideration of the WPA. On November 29, 2012, the Water Authority Board adopted a resolution approving the Water Purchase Agreement (WPA).

The Water Authority's existing and planned supplies from the IID transfer and canal lining projects are considered "drought-proof" supplies and should be available at the yields shown in Table 6 in normal water year supply and demand assessment. Single-dry year and multiple-dry year scenarios are discussed in more detail in Section 9 of the Water Authority's 2010 UWMP.

As part of preparation of a written water supply assessment and/or verification report, an agency's shortage contingency analysis should be considered in determining sufficiency of supply. Section 11 of the Water Authority's 2010 UWMP contains a detailed shortage contingency analysis that addresses a regional catastrophic shortage situation and drought management. The analysis demonstrates that the Water Authority and its member agencies, through the Emergency Response Plan, Emergency Storage Project, and Drought Management Plan (DMP) are taking actions to prepare for and appropriately handle an interruption of water supplies. The DMP, adopted in May 2006, provides the Water Authority

and its member agencies with a series of potential actions to take when faced with a shortage of imported water supplies from MWD due to prolonged drought or other supply shortfall conditions. The actions will help the region avoid or minimize the impacts of shortages and ensure an equitable allocation of supplies throughout the San Diego region.

6.2.1.1 Water Authority-Imperial Irrigation District Water Conservation and Transfer Agreement

The QSA was signed in October 2003, and resolves long-standing disputes regarding priority and use of Colorado River water and creates a baseline for implementing water transfers. With approval of the QSA, the Water Authority and IID were able to implement their Water Conservation and Transfer Agreement. This agreement not only provides reliability for the San Diego region, but also assists California in reducing its use of Colorado River water to its legal allocation.

On April 29, 1998, the Water Authority signed a historic agreement with IID for the long-term transfer of conserved Colorado River water to San Diego County. The Water Authority-IID Water Conservation and Transfer Agreement (Transfer Agreement) is the largest agriculture-to-urban water transfer in United States history. Colorado River water will be conserved by Imperial Valley farmers who voluntarily participate in the program and then transferred to the Water Authority for use in San Diego County.

Implementation Status

On October 10, 2003, the Water Authority and IID executed an amendment to the original 1998 Transfer Agreement. This amendment modified certain aspects of the 1998 Agreement to be consistent with the terms and conditions of the QSA and related agreements. It also modified other aspects of the agreement to lessen the environmental impacts of the transfer of conserved water. The amendment was expressly contingent on the approval and implementation of the QSA, which was also executed on October 10, 2003.

On November 5, 2003, IID filed a complaint in Imperial County Superior Court seeking validation of 13 contracts associated with the Transfer Agreement and the QSA. Imperial County and various private parties filed additional suits in Superior Court, alleging violations of the California Environmental Quality Act (CEQA), the California Water Code, and other laws related to the approval of the QSA, the water transfer, and related agreements. The lawsuits were coordinated for trial. The IID, Coachella Valley Water District, MWD, the Water Authority, and state are defending these suits and coordinating to seek validation of the contracts. In January 2010, a California Superior Court judge ruled that the QSA and 11 related agreements were invalid, because one of the agreements created an open-ended financial obligation for the state, in violation of California's constitution. The QSA parties appealed this decision and are continuing to seek validation of the contracts. The appeal is currently pending in the Third District Court of Appeal. A stay of the trial court judgment has been issued during the appeal. Implementation of the transfer provisions is proceeding during litigation.

Expected Supply

Deliveries into San Diego County from the transfer began in 2003 with an initial transfer of 10,000 acre-feet per year. The Water Authority received increasing amounts of transfer water each year, according to a water delivery schedule contained in the transfer agreement. In 2012, the Water Authority will receive 90,000 acre-feet per year. The quantities will increase annually to 200,000 acre-feet per year by 2021 then remain fixed for the duration of the transfer agreement. The initial term of the Transfer Agreement is 45 years, with a provision that either agency may extend the agreement for an additional 30-year term.

During dry years, when water availability is low, the conserved water will be transferred under the IID Colorado River rights, which are among the most senior in the Lower Colorado River Basin. Without the protection of these rights, the Water Authority could suffer delivery cutbacks. In recognition for the value of such reliability, the 1998 contract required the Water Authority to pay a premium on transfer water under defined regional shortage circumstances. The shortage premium period duration is the period of consecutive days during which any of the following exist: 1) a Water Authority shortage; 2) a shortage condition for the Lower Colorado River as declared by the Secretary; and 3) a Critical Year. Under terms of the October 2003 amendment, the shortage premium will not be included in the cost formula until Agreement Year 16.

Transportation

The Water Authority entered into a water exchange agreement with MWD on October 10, 2003, to transport the Water Authority-IID transfer water from the Colorado River to San Diego County. Under the exchange agreement, MWD will take delivery of the transfer water through its Colorado River Aqueduct. In exchange, MWD will deliver to the Water Authority a like quantity and quality of water. The Water Authority will pay MWD's applicable wheeling rate for each acre-foot of exchange water delivered. According to the water exchange agreement, MWD will make delivery of the transfer water for 35 years, unless the Water Authority elects to extend the agreement another 10 years for a total of 45 years.

Cost/Financing

The costs associated with the transfer are financed through the Water Authority's rates and charges. In the agreement between the Water Authority and IID, the price for the transfer water started at \$258 per acre-foot and increased by a set amount for the first seven years. In December 2009, the Water Authority and IID executed a fifth amendment to the water transfer agreement that sets the price per acre-foot for transfer water for calendar years 2010 through 2015, beginning at \$405 per acre-foot in 2010 and increasing to \$624 per acre-foot in 2015. For calendar years 2016 through 2034, the unit price will be adjusted using an agreed-upon index. The amendment also required the Water Authority to pay IID \$6 million at the end of calendar year 2009 and another \$50 million on or before October 1, 2010, provided that a transfer stoppage is not in effect as a result of a court order in the QSA coordinated cases. Beginning in

2035, either the Water Authority or IID can, if certain criteria are met, elect a market rate price through a formula described in the water transfer agreement.

The October 2003 exchange agreement between MWD and the Water Authority set the initial cost to transport the conserved water at \$253 per acre-feet. Thereafter, the price is set to be equal to the charge or charges set by MWD's Board of Directors pursuant to applicable laws and regulation, and generally applicable to the conveyance of water by MWD on behalf of its member agencies. The transportation charge in 2010 was \$314 per acre-feet.

The Water Authority is providing \$10 million to help offset potential socioeconomic impacts associated with temporary land fallowing. IID will credit the Water Authority for these funds during years 16 through 45. In 2007, the Water Authority prepaid IID an additional \$10 million for future deliveries of water. IID will credit the Water Authority for this up-front payment during years 16 through 30.

As part of implementation of the QSA and water transfer, the Water Authority also entered into an environmental cost sharing agreement. Under this agreement the Water Authority is contributing a total of \$64 million to fund environmental mitigation projects and the Salton Sea Restoration Fund.

Written Contracts or Other Proof

The supply and costs associated with the transfer are based primarily on the following documents:

Agreement for Transfer of Conserved Water by and between IID and the Water Authority (April 29, 1998). This Agreement provides for a market-based transaction in which the Water Authority would pay IID a unit price for agricultural water conserved by IID and transferred to the Water Authority.

Revised Fourth Amendment to Agreement between IID and the Water Authority for Transfer of Conserved Water (October 10, 2003). Consistent with the executed Quantification Settlement Agreement (QSA) and related agreements, the amendments restructure the agreement and modify it to minimize the environmental impacts of the transfer of conserved water to the Water Authority.

Amended and Restated Agreement between MWD and Water Authority for the Exchange of Water (October 10, 2003). This agreement was executed pursuant to the QSA and provides for delivery of the transfer water to the Water Authority.

Environmental Cost Sharing, Funding, and Habitat Conservation Plan Development Agreement among IID, Coachella Valley Water District (CVWD), and Water Authority (October 10, 2003). This Agreement provides for the specified allocation of QSA-related

environmental review, mitigation, and litigation costs for the term of the QSA, and for development of a Habitat Conservation Plan.

Quantification Settlement Agreement Joint Powers Authority Creation and Funding Agreement (October 10, 2003). The purpose of this agreement is to create and fund the QSA Joint Powers Authority and to establish the limits of the funding obligation of CVWD, IID, and Water Authority for environmental mitigation and Salton Sea restoration pursuant to SB 654 (Machado).

Fifth Amendment to Agreement between Imperial Irrigation District and San Diego County Water Authority for Transfer of Conserved Water (December 21, 2009). This agreement implements a settlement between the Water Authority and IID regarding the base contract price of transferred water.

Federal, State, and Local Permits/Approvals

Federal Endangered Species Act Permit. The U.S. Fish and Wildlife Service (USFWS) issued a Biological Opinion on January 12, 2001, that provides incidental take authorization and certain measures required to offset species impacts on the Colorado River regarding such actions.

State Water Resources Control Board (SWRCB) Petition. SWRCB adopted Water Rights Order 2002-0016 concerning IID and Water Authority's amended joint petition for approval of a long-term transfer of conserved water from IID to the Water Authority and to change the point of diversion, place of use, and purpose of use under Permit 7643.

Environmental Impact Report (EIR) for Conservation and Transfer Agreement. As lead agency, IID certified the Final EIR for the Conservation and Transfer Agreement on June 28, 2002.

U. S. Fish and Wildlife Service Draft Biological Opinion and Incidental Take Statement on the Bureau of Reclamation's Voluntary Fish and Wildlife Conservation Measures and Associated Conservation Agreements with the California Water Agencies (12/18/02). The U. S. Fish and Wildlife Service issued the biological opinion/incidental take statement for water transfer activities involving the Bureau of Reclamation and associated with IID/other California water agencies' actions on listed species in the Imperial Valley and Salton Sea (per the June 28, 2002 EIR).

Addendum to EIR for Conservation and Transfer Agreement. IID as lead agency and Water Authority as responsible agency approved addendum to EIR in October 2003.

Environmental Impact Statement (EIS) for Conservation and Transfer Agreement. Bureau of Reclamation issued a Record of Decision on the EIS in October 2003.

CA Department of Fish and Game California Endangered Species Act Incidental Take Permit #2081-2003-024-006). The California Department of Fish and Game issued this permit

(10/22/04) for potential take effects on state-listed/fully protected species associated with IID/other California water agencies' actions on listed species in the Imperial Valley and Salton Sea (per the June 28, 2002 EIR).

California Endangered Species Act (CESA) Permit. A CESA permit was issued by California Department of Fish and Game (CDFG) on April 4, 2005, providing incidental take authorization for potential species impacts on the Colorado River.

6.2.1.2 All-American Canal and Coachella Canal Lining Projects

As part of the QSA and related contracts, the Water Authority was assigned MWD's rights to 77,700 ac-ft/yr of conserved water from projects that will line the All-American Canal (AAC) and Coachella Canal (CC). The projects will reduce the loss of water that currently occurs through seepage, and the conserved water will be delivered to the Water Authority. This conserved water will provide the San Diego region with an additional 8.5 million acre-feet over the 110-year life of the agreement.

Implementation Status

The CC lining project began in November 2004 and was completed in 2006. Deliveries of conserved water to the Water Authority began in 2007. The project constructed a 37-mile parallel canal adjacent to the CC. The AAC lining project was begun in 2005 and was completed in 2010. The lining project constructed a concrete-lined canal parallel to 24 miles of the existing AAC from Pilot Knob to Drop 3.

In July 2005, a lawsuit (*CDEM v United States*, Case No. CV-S-05-0870-KJD-PAL) was filed in the U. S. District Court for the District of Nevada on behalf of U.S. and Mexican groups challenging the lining of the AAC. The lawsuit, which names the Secretary of the Interior as a defendant, claims that seepage water from the canal belongs to water users in Mexico. California water agencies note that the seepage water is actually part of California's Colorado River allocation and not part of Mexico's allocation. The plaintiffs also allege a failure by the United States to comply with environmental laws. Federal officials have stated that they intend to vigorously defend the case.

Expected Supply

The AAC lining project makes 67,700 acre-feet of Colorado River water per year available for allocation to the Water Authority and San Luis Rey Indian water rights settlement parties. The CC lining project makes 26,000 acre-feet of Colorado River water each year available for allocation. The 2003 Allocation Agreement provides for 16,000 acre-feet per year of conserved canal lining water to be allocated to the San Luis Rey Indian Water Rights Settlement Parties. The remaining amount, 77,700 acre-feet per year, is to be available to the Water Authority, with up to an additional 4,850 acre-feet per year available to the Water Authority depending on environmental requirements from the CC lining project. For planning

purposes, the Water Authority assumes that 2,500 acre-feet of the 4,850 acre-feet will be available each year for delivery, for a total of 80,200 acre-feet per year of that supply. According to the Allocation Agreement, IID has call rights to a portion (5,000 acre-feet per year) of the conserved water upon termination of the QSA for the remainder of the 110 years of the Allocation Agreement and upon satisfying certain conditions. The term of the QSA is for up to 75 years.

Transportation

The October 10, 2003, Exchange Agreement between the Water Authority and MWD also provides for the delivery of the conserved water from the canal lining projects. The Water Authority will pay MWD's applicable wheeling rate for each acre-foot of exchange water delivered. In the Agreement, MWD will deliver the canal lining water for the term of the Allocation Agreement (110 years).

Cost/Financing

Under California Water Code Section 12560 et seq., the Water Authority received \$200 million in state funds for construction of the canal lining projects. In addition, \$20 million was made available from Proposition 50 and \$36 million from Proposition 84. The Water Authority was responsible for additional expenses above the funds provided by the state.

The rate to be paid to transport the canal lining water will be equal to the charge or charges set by MWD's Board of Directors pursuant to applicable law and regulation and generally applicable to the conveyance of water by MWD on behalf of its member agencies.

In accordance with the Allocation Agreement, the Water Authority will also be responsible for a portion of the net additional Operation, Maintenance, and Repair (OM&R) costs for the lined canals. Any costs associated with the lining projects as proposed, are to be financed through the Water Authority's rates and charges.

Written Contracts or Other Proof

The expected supply and costs associated with the lining projects are based primarily on the following documents:

U.S. Public Law 100-675 (1988). Authorized the Department of the Interior to reduce seepage from the existing earthen AAC and CC. The law provides that conserved water will be made available to specified California contracting water agencies according to established priorities.

California Department of Water Resources - MWD Funding Agreement (2001). Reimburse MWD for project work necessary to construct the lining of the CC in an amount not to exceed \$74 million. Modified by First Amendment (2004) to replace MWD with the Authority.

Modified by Second Amendment (2004) to increase funding amount to \$83.65 million, with addition of funds from Proposition 50.

California Department of Water Resources - IID Funding Agreement (2001). Reimburse IID for project work necessary to construct a lined AAC in an amount not to exceed \$126 million.

MWD - CVWD Assignment and Delegation of Design Obligations Agreement (2002). Assigns design of the CC lining project to CVWD.

MWD - CVWD Financial Arrangements Agreement for Design Obligations (2002). Obligates MWD to advance funds to CVWD to cover costs for CC lining project design and CVWD to invoice MWD to permit the Department of Water Resources to be billed for work completed.

Allocation Agreement among the United States of America, The Metropolitan Water District of Southern California, Coachella Valley Water District, Imperial Irrigation District, San Diego County Water Authority, the La Jolla, Pala, Pauma, Rincon, and San Pasqual Bands of Mission Indians, the San Luis Rey River Indian Water Authority, the City of Escondido, and Vista Irrigation District (October 10, 2003). This agreement includes assignment of MWD's rights and interest in delivery of 77,700 acre-feet of Colorado River water previously intended to be delivered to MWD to the Water Authority. Allocates water from the AAC and CC lining projects for at least 110 years to the Water Authority, the San Luis Rey Indian Water Rights Settlement Parties, and IID, if it exercises its call rights.

Amended and Restated Agreement between MWD and Water Authority for the Exchange of Water (October 10, 2003). This agreement was executed pursuant to the QSA and provides for delivery of the conserved canal lining water to the Water Authority.

Agreement between MWD and Water Authority regarding Assignment of Agreements related to the AAC and CC Lining Projects. This agreement was executed in April 2004 and assigns MWD's rights to the Water Authority for agreements that had been executed to facilitate funding and construction of the AAC and CC lining projects.

Assignment and Delegation of Construction Obligations for the Coachella Canal Lining Project under the Department of Water Resources Funding Agreement No. 4600001474 from the San Diego County Water Authority to the Coachella Valley Water District, dated September 8, 2004.

Agreement Regarding the Financial Arrangements between the San Diego County Water Authority and Coachella Valley Water District for the Construction Obligations for the Coachella Canal Lining Project, dated September 8, 2004.

Agreement No. 04-XX-30-W0429 among the United States Bureau of Reclamation, the Coachella Valley Water District, and the San Diego County Water Authority for the Construction of the Coachella Canal Lining Project Pursuant to Title II of Public Law 100-675, dated October 19, 2004.

California Water Code Section 12560 et seq. This Water Code Section provides for \$200 million to be appropriated to the Department of Water Resources to help fund the canal lining projects in furtherance of implementing California's Colorado River Water Use Plan.

California Water Code Section 79567. This Water Code Section identifies \$20 million as available for appropriation by the California Legislature from the Water Security, Clean Drinking Water, Coastal, and Beach Protection Fund of 2002 (Proposition 50) to DWR for grants for canal lining and related projects necessary to reduce Colorado River water use. According to the Allocation Agreement, it is the intention of the agencies that those funds will be available for use by the Water Authority, IID, or CVWD for the AAC and CC lining projects.

California Public Resources Code Section 75050(b)(1). This section identifies up to \$36 million as available for water conservation projects that implement the Allocation Agreement as defined in the Quantification Settlement Agreement.

Federal, State, and Local Permits/Approvals

AAC Lining Project Final EIS/EIR (March 1994). A final EIR/EIS analyzing the potential impacts of lining the AAC was completed by the Bureau of Reclamation (Reclamation) in March 1994. A Record of Decision was signed by Reclamation in July 1994, implementing the preferred alternative for lining the AAC. A re-examination and analysis of these environmental compliance documents by Reclamation in November 1999 determined that these documents continued to meet the requirements of the NEPA and the CEQA and would be valid in the future.

CC Lining Project Final EIS/EIR (April 2001). The final EIR/EIS for the CC lining project was completed in 2001. Reclamation signed the Record of Decision in April 2002. An amended Record of Decision has also been signed to take into account revisions to the project description.

Mitigation, Monitoring, and Reporting Program for Coachella Canal Lining Project, SCH #1990020408; prepared by Coachella Valley Water District, May 16, 2001.

Environmental Commitment Plan for the Coachella Canal Lining Project, approved by the US Bureau of Reclamation (Boulder City, NV) on March 4, 2003.

Environmental Commitment Plan and Addendum to the All-American Canal Lining Project EIS/EIR California State Clearinghouse Number SCH 90010472 (June 2004, prepared by IID).

Addendum to Final EIS/EIR and Amendment to Environmental Commitment Plan for the All-American Canal Lining Project (approved June 27, 2006, by IID Board of Directors).

6.2.1.3 Carlsbad Seawater Desalination Project

Development of seawater desalination in San Diego County will assist the region in diversifying its water resources, reduce dependence on imported supplies, and provide a new drought-proof, locally treated water supply. The Carlsbad Desalination Project is a fully-permitted seawater desalination plant and conveyance pipeline currently being developed by Poseidon, a private investor-owned company that develops water and wastewater infrastructure. The project, located at the Encina Power Station in Carlsbad, has been in development since 1998 and was incorporated into the Water Authority's 2003 Water Facilities Master Plan and the 2010 UWMP. The Carlsbad Desalination Project has obtained all required permits and environmental clearances and, when completed, will provide a highly reliable local supply of 48,000 to 56,000 acre-feet per year for the region.

Implementation Status

The Project has obtained all required permits and environmental clearances, including the following:

- National Pollutant Discharge Elimination System (NPDES) Discharge Permit (Regional Water Quality Control Board)
- Conditional Drinking Water Permit (California Department of Health Services)
- State Lands Commission Lease (State Lands Commission)
- Coastal Development Permit (California Coastal Commission)

IDE Technologies, a worldwide leader in the design, construction, and operation of desalination plants, was selected by Poseidon to be the desalination process contractor for the Project.

On July 22, 2010, the Board approved a Term Sheet between the Water Authority and Poseidon Resources that outlined the key terms and conditions that would be detailed and incorporated in a comprehensive Water Purchase Agreement (WPA). Beginning in October 2011 and under the direction of the Board's Carlsbad Desalination Project Advisory Group, staff began developing and negotiating with Poseidon a WPA consistent with the July 22, 2010 Board approved Term Sheet. The July 2010 Term Sheet also identified specific conditions precedent to Board consideration of the WPA.

On November 29, 2012, the Water Authority Board adopted a resolution approving the Design-Build Agreement between the Water Authority and Poseidon. The Design-Build Agreement establishes the commercial and technical terms for implementation of the desalination product pipeline improvements. These improvements consist of an approximate 10-mile long, 54-inch diameter conveyance pipeline connecting the Desalination Plant to the Water Authority's Second Aqueduct. The pipeline will generally be constructed within improved streets in commercial and industrial areas in the cities of Carlsbad, Vista, and San

Marcos. The Water Authority will own the Project Water Pipeline Improvements upon execution of the Design-Build Agreement, and upon completion and acceptance of construction, the Water Authority will assume operational control of all pipeline improvements.

Expected Supply

When completed, the Project will provide a highly reliable local supply of 48,000 to 56,000 acre-feet per year of supply for the region, available in both normal and dry hydrologic conditions. In 2020, the Project would account for approximately 8% of the total projected regional supply and 30% of all locally generated water in San Diego County. When the project becomes operational in 2016, it will more than double the amount of local supplies developed in the region since 1991.

Transportation

On November 29, 2012, the Water Authority Board adopted a resolution approving the Design-Build Agreement between the Water Authority and Poseidon. The Design-Build Agreement establishes the commercial and technical terms for implementation of the desalination product pipeline improvements. These improvements consist of an approximate 10-mile long, 54-inch diameter conveyance pipeline connecting the Desalination Plant to the Water Authority's Second Aqueduct. The pipeline will generally be constructed within improved streets in commercial and industrial areas in the cities of Carlsbad, Vista, and San Marcos. The Water Authority will own the Project Water Pipeline Improvements upon execution of the Design-Build Agreement, and upon completion and acceptance of construction, the Water Authority will assume operational control of all pipeline improvements.

The Water Authority will be responsible for aqueduct improvements, including the relining and rehabilitation of Pipeline 3 to accept desalinated water under higher operating pressures, modifications to the San Marcos Vent that allows the flow of water between Pipelines 3 and 4, and improvements at the Twin Oaks Valley Water Treatment Plant necessary to integrate desalinated water into the Water Authority's system for optimal distribution to member agencies.

Cost/Financing

The plant and the offsite pipeline will be financed through tax exempt government bonds issued for the Water Authority by the California Pollution Control Financing Authority (CPCFA). On November 29, 2012, the Water Authority Board adopted a resolution approving agreements to accomplish tax exempt project financing through the CPCFA.

A preliminary September 2012 unit cost estimate was \$2,300/AF. The Water Authority's water purchase costs would be financed through Water Authority rates and charges. Poseidon

is financing the capital cost of the Project with a combination of private equity and tax-exempt Private Activity Bonds.

Written Contracts or Other Proof

The expected supply and costs associated with the Carlsbad Desalination Project are based primarily on the following documents:

Development Agreement between City of Carlsbad and Poseidon (October 2009). A Development Agreement between Carlsbad and Poseidon was executed on October 5, 2009

Agreement of Term Sheet between the Water Authority and Poseidon Resources (July 2010). The Water Authority approved the Term Sheet at its July 2010 Board Meeting. The Term Sheet outlines the terms and conditions of a future Water Purchase Agreement with Poseidon and allocates the resources to prepare the draft Water Purchase Agreement.

Federal, State, and Local Permits/Approvals

Carlsbad Desalination Project Final EIR

The City of Carlsbad, acting as lead agency for Carlsbad Seawater Desalination Plant and appurtenant facilities proposed by Poseidon (the “Project”) prepared an Environmental Impact Report for the Project in compliance with the California Environmental Quality Act (“CEQA”), which the City of Carlsbad certified on June 13, 2006.

<http://www.sdcwa.org/rwfmp-peir>

The City of Carlsbad prepared an Addendum to the Carlsbad EIR (“Addendum”) which was adopted on September 15, 2009, and reflects minor and immaterial design modifications to the Project site plan, appurtenant facilities, and water delivery pipeline network. The environmental documents and permits are found at the following link:

<http://www.carlsbad-desal.com/EIR.asp>

The Water Authority, as a Responsible Agency under CEQA, adopted a resolution on November 29, 2012 approving a Second Addendum to the Carlsbad Precise Development Plan and Desalination Plant Final EIR and First Addendum that evaluates the environmental impacts of several proposed facility modifications that are necessary to allow for operational flexibility and efficiency in receiving and delivering desalination product water. These modifications include: a realignment of a portion of the approved desalination pipeline, the addition of chemical injection at the approved San Marcos Aqueduct Connection site, the relining of a portion of Pipeline 3, the addition of a pipeline and expanded flow control facility at Twin Oaks Valley Water Treatment Plant and a replacement of the San Marcos Vent on Pipeline 4. Impacts associated with the proposed modifications would not result in a new significant impact or substantial increase in the severity of impacts previously evaluated

in the Carlsbad FEIR or the First Addendum. There are no substantial changes to the circumstances under which the project will be undertaken, and no new information of substantial importance that was not known and could not have been known when the FEIR was certified and the First Addendum was approved, and that have since been identified. Therefore, the Second Addendum satisfies the CEQA requirements for the proposed project modifications.

Regional Water Facilities Master Plan EIR

On November 20, 2003, the Water Authority Board of Directors adopted Resolution No. 2003-34 certifying the Final Program Environmental Impact Report (State Clearinghouse No. 2003021052) for the Water Authority's Regional Water Facilities Master Plan Project (the "Master Plan EIR"), which evaluated, among other things, potential growth inducing impacts associated with new water supplies to the region including, but not limited to, up to 150 million gallons per day ("MGD") of new supplies from seawater desalination. This certification included a 50 MGD plant located in the City of Carlsbad.

The environmental documents and permits are found at the following link:

<http://www.sdcwa.org/rwfmp-peir>

Sub regional Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP)

On December 8, 2010, the Board adopted Resolution No. 2010-18 certifying a Final environmental Impact Report/Environmental Impact Statement for the San Diego County Water Authority Subregional Natural Community Conservation Plan/Habitat Conservation Plan (State Clearinghouse No. 2003121012) (the "Habitat Conservation Plan EIR/EIS"), which Plan was implemented on December 28, 2011.

The environmental documents and permits are found at the following link:

<http://www.sdcwa.org/nccp-hcp>

Twin Oaks Valley Water Treatment Plant EIR

On September 8, 2005, the Board adopted Resolution No. 2005-31 certifying a Final Environmental Impact Report for the Twin Oaks Valley Water Treatment Plant Project (State Clearinghouse No. 20040071034) (the "Twin Oaks EIR"), which project was constructed as a 100 MGD submerged membrane water treatment facility, including treated water holding tanks and distribution pipelines and other facilities, consistent with the conditions and mitigation measures included in the Twin Oaks EIR.

<http://www.sdcwa.org/twin-oaks-valley-treatment-plant-final-eir>

2010 Urban Water Management Plan

<http://www.sdcwa.org/2010-urban-water-management-plan>

Drinking Water Permit (October 2006). The California Department of Health Services approved the Conditional Drinking Water Permit on October 19, 2006.

Coastal Development Permit

The Project is fully permitted, with the California Coastal Commission issuing the following permits: Coastal Development Permit No. E-06-013, Energy Minimization and Greenhouse Gas Reduction Plan (December 2008), Marine Life Mitigation Plan (December 2008), Erosion Control Plan (November 2009), Landscaping Plan (September 2009), Lighting Plan (August 2009), Construction Plan (September 2009), and Water Pollution Control Plan (September 2009); the California Department of Public Health issuing Conceptual Approval Letter dated October 19, 2006; the California Regional Water Quality Control Board issuing NPDES Permit No. CA0109223 and Notice of Intent to Discharge for Storm Water Associated with Construction Activities (WDID #9 37C361181); the City of Carlsbad issuing Redevelopment Permit RP 05-12(A), Specific Plan 144 with Amendment 144(J) SP 144(J), Habitat Management Plan Permit Amendment HMP 05-08(A), Precise Development Plan PDP 00-02(B), Mitigation Monitoring and Reporting Program for EIR 03-05(A), Development Agreement DA 05-01(A), Standard Urban Storm Water Mitigation Program (September 2009), and Coastal Development Permit 04-41; the State of California State Lands Commission issuing an Amendment of Lease PRC 8727.1 (August 2008). The environmental documents and permits are found at the following link:

<http://www.sdewa.org/carlsbad-desalination-project-approved-permits-and-plans>

State Lands Commission Lease Application (Amendment of Lease PRC 8727.1 August 2008). Amends lease of land by Cabrillo Power I LLC (Cabrillo) from the State Lands Commission for the lands where the project will be constructed. Cabrillo and Poseidon entered into agreement on July 1, 2003, authorizing Poseidon to use those lands to construct the project.

6.2.2 Water Authority Capital Improvement Program and Financial Information

The Water Authority's Capital Improvement Program (CIP) can trace its beginnings to a report approved by the Board in 1989 entitled, The Water Distribution Plan, and a Capital Improvement Program through the Year 2010. The Water Distribution Plan included ten projects designed to increase the capacity of the aqueduct system, increase the yield from existing water treatment plants, obtain additional supplies from MWD, and increase the reliability and flexibility of the aqueduct system. Since that time the Water Authority has made numerous additions to the list of projects included in its CIP as the region's infrastructure needs and water supply outlook have changed.

The current list of projects included in the CIP is based on the results of planning studies, including the 2005 UWMP and the 2002 Regional Water Facilities Master Plan. These CIP projects, which are most recently described in the Water Authority's Adopted Multi-Year Budget, include projects valued at \$3.50 billion. These CIP projects are designed to meet projected water supply and delivery needs of the member agencies through 2035. The

projects include a mix of new facilities that will add capacity to existing conveyance, storage, and treatment facilities, as well as repair and replace aging infrastructure:

- Asset Management – The primary components of the asset management projects include relining and replacing existing pipelines and updating and replacing metering facilities.
- New Facilities – These projects will expand the capacity of the aqueduct system, complete the projects required under the Quantification Settlement Agreement (QSA), and evaluate new supply opportunities.
- Emergency Storage Project – Projects remaining to be completed under the ongoing ESP include the San Vicente Dam Raise, the Lake Hodges projects, and a new pump station to extend ESP supplies to the northern reaches of the Water Authority service area.
- Other Projects – This category includes out-of-region groundwater storage, increased local water treatment plant capacity, and projects that mitigate environmental impacts of the CIP.

The Water Authority Board of Directors is provided a semi-annual and annual report on the status of development of the CIP projects. As described in the Water Authority's biennial budget, a combination of long and short-term debt and cash (pay-as-you-go) will provide funding for capital improvements. Additional information is included in the Water Authority's biennial budget, which also contains selected financial information and summarizes the Water Authority's investment policy.

6.3 Otay Water District

The Otay WD 2010 WRMP Revision and the 2010 UWMP contain comparisons of projected supply and demands through the year 2035. Projected potable water resources to meet planned demands as documented were planned to be supplied entirely with imported water received from the Water Authority. Recycled water resources to meet projected demands are planned to be supplied from local wastewater treatment plants. The Otay WD currently has no local supply of raw water, potable water, or groundwater resources.

The development and/or acquisition of potential groundwater, recycled water market expansion, and seawater desalination supplies by the Otay WD have evolved and are planned to occur in response to the regional water supply issues. These water supply projects are in addition to those identified as sustainable supplies in the current Water Authority and MWD UWMP, IRP, Master Plans, and other planning documents. These new additional water supply projects are not currently developed and are in various stages of the planning process. These local and regional water supply projects will allow for less reliance upon imported water and are considered a new water supply resource for the Otay WD.

The Otay WD expansion of the market areas for the use of recycled water within the watersheds upstream of the Sweetwater Reservoir, Otay Mesa, and the Lower Otay Reservoir

will increase recycled water use and thus require less dependence on imported water for irrigation purposes.

The supply forecasts contained within this WSA&V Report do consider development and/or acquisition of potential groundwater, recycled water market expansion, and seawater desalination supplies by the Otay WD.

6.3.1 Availability of Sufficient Supplies and Plans for Acquiring Additional Supplies

The availability of sufficient potable water supplies and plans for acquiring additional potable water supplies to serve existing and future demands of the Otay WD is founded upon the preceding discussions regarding MWD’s and the Water Authority’s water supply resources and water supplies to be acquired by the Otay WD. Historic imported water deliveries from the Water Authority to Otay WD and recycled water deliveries from the Otay WD Ralph W. Chapman Water Reclamation Facility (RWCWRF) are shown in Table 7. Since the year 2000 through mid May 2007, recycled water demand has exceeded the recycled water supply capability typically in the summer months. The RWCWRF is limited to a maximum production of about 1,300 ac-ft/yr. The recycled water supply shortfall had been met by supplementing with potable water into the recycled water storage system as needed by adding potable water supplied by the Water Authority. On May 18, 2007 an additional source of recycled water supply from the City of San Diego’s South Bay Water Reclamation Plant (SBWRP) became available. The supply of recycled water from the SBWRP is a result of essentially completing construction and commencement of operations of the transmission, storage, and pump station systems necessary to link the SBWRP recycled water supply source to the existing Otay WD recycled water system.

Table 7
Historic Imported and Local Water Supplies
Otay Water District

Calendar Year	Imported Water (acre-feet)	Recycled Water (acre-feet)	Total (acre-feet)
1980	12,558	0	12,558
1985	14,529	0	14,529
1990	23,200	0	23,200
1995	20,922	614	21,536
2000	29,901	948	30,849
2005	37,678	1,227	38,905
2010	29,219	4,090	33,309
2011	30,777	3,776	34,553
2012	31,268	4,155	35,423

Source: Otay Water District operational records.

6.3.1.1 Imported and Regional Supplies

The availability of sufficient imported and regional potable water supplies to serve existing and planned uses within Otay WD is demonstrated in the above discussion on MWD and the Water Authority's water supply reliability. The County Water Authority Act, Section 5 subdivision 11, states that the Water Authority "as far as practicable, shall provide each of its member agencies with adequate supplies of water to meet their expanding and increasing needs." The Water Authority provides between 75 to 95 percent of the total supplies used by its 24 member agencies, depending on local weather and supply conditions. In calendar year 2010 the supply to Otay WD was 29,270 ac-ft of supply from the Water Authority. An additional 4,090 ac-ft of recycled water from the City of San Diego and from the District's Ralph W. Chapman Water Reclamation Facility. The demand for potable water within the Otay WD is expected to increase to about 77,177 ac-ft by 2035 as per the Otay WD 2010 UWMP.

Potable Water System Facilities

The Otay WD continues to pursue diversification of its water supply resources to increase reliability and flexibility. The Otay WD also continues to plan, design, and construct potable water system facilities to obtain these supplies and to distribute potable water to meet customer demands. The Otay WD has successfully negotiated two water supply diversification agreements that enhance reliability and flexibility, which are briefly described as follows.

- The Otay WD entered into an agreement with the City of San Diego, known as the Otay Water Treatment Plant (WTP) Agreement. The Otay WTP Agreement provides for raw water purchase from the Water Authority and treatment by the City of San Diego at their Otay WTP for delivery to Otay WD. The supply system link to implement the Otay WTP Agreement to access the regions raw water supply system and the local water treatment plant became fully operational in August 2005. This supply link consists of the typical storage, transmission, pumping, flow measurement, and appurtenances to receive and transport the treated water to the Otay WD system. The City of San Diego obligation to supply 10 MGD of treated water under the Otay WTP Agreement is contingent upon there being available 10 MGD of surplus treatment capacity in the Otay WTP until such time as Otay WD pays the City of San Diego to expand the Otay WTP to meet the Otay WD future needs. In the event that the City of San Diego's surplus is projected to be less than 10 MGD the City of San Diego will consider and not unreasonably refuse the expansion of the Otay WTP to meet the Otay WD future needs. The Otay WTP existing rated capacity is 40 MGD with an actual effective capacity of approximately 34 MGD. The City of San Diego's typical demand for treated water from the Otay WTP is approximately 20 MGD. It is at the City of San Diego's discretion to utilize either imported raw water delivered by the Water Authority Pipeline No. 3 or local water stored in Lower Otay Reservoir for treatment to supply the Otay WD demand.

- The Otay WD entered into an agreement with the Water Authority, known as the East County Regional Treated Water Improvement Program (ECRTWIP Agreement). The ECRTWIP Agreement provides for transmission of raw water to the Helix WD R. M. Levy WTP for treatment and delivery to Otay WD. The supply system link to implement the ECRTWIP Agreement is complete allowing access to the regions raw water supply system and the local water treatment plant. This supply link consists of the typical transmission, pumping, storage, flow control, and appurtenances to receive and transport the potable water from the R. M. Levy WTP to Otay WD. The Otay WD is required to take a minimum of 10,000 ac-ft/yr of treated water from the R.M. Levy WTP supplied from the regions raw water system.

Cost and Financing

The capital improvement costs associated with water supply and delivery are financed through the Otay WD water meter capacity fee, New Water Supply Fee, and user rate structures. The Otay WD potable water sales revenue are used to pay for the wholesale cost of the treated water supply and the operating and maintenance expenses of the potable water system facilities.

Written Agreements, Contracts, or Other Proof

The supply and cost associated with deliveries of treated water from the Otay WTP and the R.M. Levy WTP is based on the following documents.

Agreement for the Purchase of Treated Water from the Otay Water Treatment Plant between the City of San Diego and the Otay Water District. The Otay WD entered into an agreement dated January 11, 1999 with the City of San Diego that provides for 10 MGD of surplus treated water to the Otay WD from the existing Otay WTP capacity. The agreement allows for the purchase of treated water on an as available basis from the Otay WTP. The Otay WD pays the Water Authority at the prevailing raw water rate for raw water and pays the City of San Diego at a rate equal to the actual cost of treatment to potable water standards.

Agreement between the San Diego County Water Authority and Otay Water District Regarding Implementation of the East County Regional Treated Water Improvement Program. The ECRTWIP Agreement requires the purchase of at least 10,000 ac-ft per year of potable water from the Helix WD R.M. Levy WTP at the prevailing Water Authority treated water rate. The ECRTWIP Agreement is dated April 27, 2006.

Agreement between the San Diego County Water Authority and Otay Water District for Design, Construction, Operation, and Maintenance of the Otay 14 Flow Control Facility Modification. The Otay WD entered into the Otay 14 Flow Control Facility Modification Agreement dated January 24, 2007 with the Water Authority to increase the physical capacity of the Otay 14 Flow Control Facility. The Water Authority and Otay WD to 50% share the capital cost to expand its capacity from 8 MGD to 16 MGD.

Federal, State, and Local Permits/Approvals

The Otay WD acquired all the permits for the construction of the pipeline and pump station associated with the Otay WTP supply source and for the 640-1 and 640-2 water storage reservoirs project associated with the ECRTWIP Agreement through the typical planning, environmental approval, design, and construction processes.

The transmission main project constructed about 26,000 feet of a 36-inch diameter steel pipeline from the Otay 14 Flow Control Facility to the 640-1 and 640-2 Reservoirs project. The Otay 14 Flow Control Facility modification increased the capacity of the existing systems from 8 MGD to 16 MGD. CEQA documentation is complete for both projects. Construction of both of these projects was completed October 2010.

The City of San Diego and the Helix Water District are required to meet all applicable federal, state, and local health and water quality requirements for the potable water produced at the Otay WTP and the R.M. Levy WTP respectively.

6.3.1.2 Recycled Water Supplies

Wastewater collection, treatment, and disposal services provided by the Otay WD is limited to a relatively small area within what is known as the Jamacha Basin, located within the Middle Sweetwater River Basin watershed upstream of the Sweetwater Reservoir and downstream of Loveland Reservoir. Water recycling is defined as the treatment and disinfection of municipal wastewater to provide a water supply suitable for non-potable reuse. The Otay WD owns and operates the Ralph W. Chapman Water Reclamation Facility, which produces recycled water treated to a tertiary level for landscape irrigation purposes. The recycled water market area of the Otay WD is located primarily within the eastern area of the City of Chula Vista and on the Otay Mesa. The Otay WD distributes recycled water to a substantial market area that includes but is not limited to the U.S. Olympic Training Center, the Eastlake Golf Course, and other development projects.

The Otay WD projects that annual average demands for recycled water will increase to 8,000 acre-feet per year by 2035. About 1,300 acre-feet per year of supply is generated by the RWCWRF, with the remainder planned to be supplied to Otay WD by the City of San Diego's SBWRP.

North District Recycled Water Concept

The Otay WD is a recognized leader in the use of recycled water for irrigation and other commercial uses. The Otay WD continues the quest to investigate all viable opportunities to expand the successful recycled water program into areas that are not currently served. One of these areas is in the portion of the service area designated as the North District, located within the Middle Sweetwater River Basin watershed upstream of the Sweetwater River. The close

proximity of the recycled water markets in the North District to the Otay WD's source of recycled water, the RWCWRF, means that the distribution system to serve this area could be constructed relatively cost effectively. This makes the North District a logical location for the expansion of the Otay WD's recycled water system and market area.

The purpose of the North District Recycled Water System Development Project, Phase I Concept Study, is to identify the feasibility of using recycled water in the North District and to investigate and assess any limitations or constraints to its use. The Phase I study components of the North District Recycled Water Concept encompassed the preparation of six technical memorandums including the project definition, a discussion of the regulatory process, a discussion of the protection of the watershed that would be affected by recycled water use in the North District, identification of stakeholders, public outreach, and an implementation plan.

Several opportunities that could be realized with the implementation of the use of recycled water in the North District were identified. These include a reduction of demand on the potable water system and maximizing recycled water resources which in turn minimizes treated wastewater discharges to the local ocean outfall. Other opportunities are a possible partnership with Sweetwater Authority to monitor any benefits and impacts of increased recycled water use in the watershed and stakeholder outreach to resolve any water quality concerns and to retain consumer confidence. Also identified were two major constraints associated with the North District Recycled Water System Development Project. One constraint is the water quality objectives for the Middle Sweetwater Basin that will affect the effluent limitations for the recycled water produced at the RWCWRF. At this time, the effluent limit that is of concern is total nitrogen. An examination as to how the treatment process might be modified to enhance nitrogen removal and an action plan is being developed. The other major constraint is the cost of the infrastructure needed to convey and store recycled water in the North District. These costs are estimated to be in the range of \$14 to \$15 million dollars.

There are two additional phases proposed for the North District Recycled Water System Development Project. Phase II would include further investigation of the issues identified in Phase I as requiring further study. These include stakeholder outreach, regulatory issues, and facility planning. The third phase of the effort would include the facility planning, permitting, environmental compliance, design, and construction of the improvements necessary for delivery of recycled water to the North District markets.

The estimated amount of imported water saved at full implementation of the North District Recycled Water System Development Project is 1,200 ac-ft/yr. This saved imported water could then be used to offset new potable water demands.

Recycled Water System Facilities

The Otay WD has and continues to construct recycled water storage, pumping, transmission, and distribution facilities to meet projected recycled water market demands. For nearly 20 years, millions of dollars of capital improvements have been constructed. The supply link consisting of a transmission main, storage reservoir, and a pump station to receive and transport the recycled water from the City of San Diego's SBWRP are complete and recycled water deliveries began on May 18, 2007.

Cost and Financing

The capital improvement costs associated with the recycled water supply and distribution systems are financed through the Otay WD water meter capacity fee and user rate structures. The Otay WD recycled water sales revenue, along with MWD and the Water Authority's recycled water sales incentive programs are used to help offset the costs for the wholesale purchase and production of the recycled water supply, the operating and maintenance expenses, and the capital costs of the recycled water system facilities.

Written Agreements, Contracts, or Other Proof

The supply and cost associated with deliveries of recycled water from the SBWRP is based on the following document.

Agreement between the Otay Water District and the City of San Diego for Purchase of Reclaimed Water from the South Bay Water Reclamation Plant. The agreement provides for the purchase of at least 6,721 ac-ft per year of recycled water from the SBWRP at an initial price of \$350 per acre-foot. The Otay WD Board of Directors approved the final agreement on June 4, 2003 and the San Diego City Council approved the final agreement on October 20, 2003.

Federal, State, and Local Permits/Approvals

The Otay WD has in place an agreement with MWD for their recycled water sales incentive program for supplies from the RWCWRF and the SBWRP. Also, the Otay WD has in place an agreement with the Water Authority for their recycled water sales incentive program for supplies from the RWCWRF and the SBWRP. The Water Authority sales incentive agreement was approved by Water Authority on July 26, 2007 and by Otay WD on August 1, 2007. All permits for the construction of the recycled water facilities to receive, store, and pump the SBWRP supply have been acquired through the typical planning, environmental approval, design, and construction processes.

The California Regional Water Quality Control Board San Diego Region (RWQCB) "Master Reclamation Permit for Otay Water District Ralph W. Chapman Reclamation Facility" was adopted on May 9, 2007 (Order No. R9-2007-0038). This order establishes master reclamation requirements for the production, distribution, and use of recycled water in the

Otay WD service area. The order includes the use of tertiary treated water produced and received from the City of San Diego's SBWRP. Recycled water received from and produced by the SBWRP is regulated by Regional Board Order No. 2000-203 and addenda. The City of San Diego is required to meet all applicable federal, state, and local health and water quality requirements for the recycled water produced at the SBWRP and delivered to Otay WD in conformance with Order No. 2000-203.

6.3.1.3 Potential Groundwater Supplies

The Otay WD 2010 UWMP, the 2010 WRMP Revision, and the Otay WD March 2007 Integrated Water Resources Plan (2007 IRP) all contain a description of the development of potential groundwater supplies. Over the past several years, Otay WD has studied numerous potential groundwater supply options that have shown, through groundwater monitoring well activities, poor quality water and/or insufficient yield from the basins at a cost effective level. The Otay WD has a few capital improvement program projects to continue the quest to develop potential groundwater resources. Local Otay WD groundwater supply development is currently considered as a viable water supply resource to meet projected demands.

The development and/or acquisition of potential groundwater supply projects by the Otay WD have evolved and have been resurrected in response to the regional water supply issues related to water source supply conditions. Local ground water supply projects will allow for less reliance upon imported water, achieve a level of independence of the regional wholesale water agencies, and diversify the Otay WD's water supply portfolio consistent the Otay WD 2007 IRP.

In recognition of the need to develop sufficient alternative water supplies, the Otay WD has taken the appropriate next steps towards development of production groundwater well projects.

There are three groundwater well projects that the Otay WD is actively pursuing to develop as new local water supplies. They are known as the Middle Sweetwater River Basin Groundwater Well, the Otay Mesa Lot 7 Groundwater Well, and the Rancho del Rey Groundwater Well.

Middle Sweetwater River Basin Groundwater Well

The Middle Sweetwater River Basin Groundwater Well is an additional water supply project that was thoroughly studied and documented in the 1990s. The Middle Sweetwater River Basin is located within the Sweetwater River watershed and that reach of the river extends from Sweetwater Reservoir to the upstream Loveland Reservoir. The next step in development of the Middle Sweetwater River Basin Groundwater Well is the implementation of a pilot well project. The ultimate objective of the Otay WD is to develop a groundwater well production system within the Middle Sweetwater River Basin capable of producing a sustainable yield of potable water as a local supply.

The purpose of the Middle Sweetwater River Basin Groundwater Well Pilot project is to identify the feasibility of developing a groundwater resource production system and then determine and assess any limitations or constraints that may arise. The Middle Sweetwater River Basin Groundwater Well Pilot Project will accomplish six primary goals:

- Update project setting
- Update applicable project alternatives analysis
- Prepare groundwater well pilot project implementation plan
- Construct and test pilot monitoring and extraction wells
- Provide recommendations regarding costs and feasibility to develop a groundwater well production system within the Middle Sweetwater River Basin capable of producing a sustainable yield of potable water
- Prepare groundwater well production project implementation plan and scope of work

The groundwater conjunctive use concept is described as the extraction of the quantity of water from the groundwater basin that was placed there by customers of the Otay Water District, Helix Water District, and Padre Dam Municipal Water District by means of their use of imported treated water that contributed to the overall volume of groundwater within the basin. An estimated quantity was developed to be approximately 12.5 percent of the total consumption of the Otay WD customers within that basin, as measured by water meters. In the 1994-1995 period, the quantity of water that was returned to the groundwater basin by Otay WD customers was estimated to be 810 acre-feet per year. Currently, that 12.5 percent quantity could be on the order of 1,000 acre-feet per year. A future scope of work will need to address this concept while considering further development of the groundwater basin as an additional supply resource. If it is deemed that a Middle Sweetwater River Basin Groundwater Well Production Project is viable then the consultant will develop and provide a groundwater well production project implementation plan, cost estimate, and related scope of work.

Further development of the groundwater basin to enhance the total groundwater production could be accomplished by the Otay WD by means of additional extraction of water from the basin that is placed there by means of either injection and/or spreading basins using imported untreated water as the resource supply. The existing La Mesa Sweetwater Extension Pipeline, owned by the Water Authority, once converted to an untreated water delivery system, could be the conveyance system to transport untreated water for groundwater recharge in support of this conjunctive use concept. These two distinct water resource supply conjunctive use concepts will be addressed so they may coexist and to allow for their development as separate phases.

The scope of work to complete Middle Sweetwater River Basin Groundwater Well Pilot Project consists of many major tasks and is to address the groundwater supply concepts outlined above. It is anticipated that the cost for the entire scope of work, will be on the order of \$2,000,000, which includes a contingency and may take up to one and a half years to complete.

The primary desired outcome of the Middle Sweetwater River Basin Groundwater Well Pilot Project is for the engineering consultant to determine and make recommendations if it is financially prudent and physically feasible to develop a Phase I groundwater well production system within the Middle Sweetwater River Basin capable of producing a sustainable yield of up to 1,500 ac-ft/yr of potable water for the Otay WD. If it is deemed that a Middle Sweetwater River Basin Groundwater Well Production Project is viable then the consultant will develop and provide a groundwater well production project implementation plan and related scope of work.

Otay Mesa Lot 7 Groundwater Well

In early 2001 the Otay WD was approached by a landowner representative about possible interest in purchasing an existing well or alternatively, acquiring groundwater supplied from the well located on Otay Mesa. The landowner, National Enterprises, Inc., reportedly stated that the well could produce 3,200 acre-feet per year with little or no treatment required prior to introducing the water into the Otay WD potable water system or alternatively, the recycled water system. In March 2001 authorization to proceed with testing of the Otay Mesa Lot 7 Groundwater Well was obtained and the Otay WD proceeded with the investigation of this potential groundwater supply opportunity.

The May 2001 Geoscience Support Services, Inc. completed for the Otay WD the preparation of a report entitled, "Otay Mesa Lot 7 Well Investigation," to assess the Otay Mesa Lot 7 Well. The scope of work included a geohydrologic evaluation of the well, analyses of the water quality samples, management and review of the well video log, and documentation of well pump testing. The primary findings, as documented in the report, formed the basis of the following recommendations:

- For the existing well to be use as a potable water supply resource, a sanitary seal must be installed in accordance with the CDPH guidelines.
- Drawdown in the well must be limited to avoid the possibility of collapsing the casing.
- Recover from drawdown from pumping is slow and extraction would need to be terminated for up to 2 days to allow for groundwater level recovery.
- The well water would need to be treated and/or blended with potable water prior to introduction into the potable water distribution system.

The existing Otay Mesa Lot 7 Well, based upon the above findings, was determined not to be a reliable municipal supply of potable water and that better water quality and quantity perhaps could be discovered deeper or at an alternative location within the San Diego Formation.

The Otay WD may still continue to pursue the Otay Mesa groundwater well opportunity with due consideration of the recommendations of the existing report. Based on the recommendations of the investigation report, a groundwater well production facility at Otay Mesa Lot 7 could realistically extract approximately 300 acre-feet per year.

Rancho del Rey Groundwater Well

In 1991, the McMillin Development Company drilled the Rancho del Rey Groundwater Well to augment grading water supplies for their Rancho del Rey development projects. Although the well was considered a “good producer,” little was known regarding its water quality and sustainable yield because the water was used solely for earthwork (i.e., dust control and soil compaction). The well was drilled to 865 feet, with a finished depth of 830 feet and produced approximately 400 acre-feet per year of low quality water for four years until its use was discontinued in April 1995 when the well was no longer needed. McMillin notified the Otay WD of its intent to sell off the groundwater well asset.

In 1997, the Otay WD purchased an existing 7-inch well and the surrounding property on Rancho del Rey Parkway from the McMillin Company with the intent to develop it as a source of potable water. Treatment was required to remove salts and boron, among other constituents, using reverse osmosis membranes and ion exchange.

In 2000, having received proposals for the design and construction of a reverse osmosis treatment facility that far exceeded the allocated budget, the Board of Directors instructed staff to suspend the project until such time as it became economically viable.

In January 2010, citing the rising cost of imported water and the Otay WD's interest in securing its own water source for long-term supply reliability, the Board authorized Phase 1 for drilling and development of the Rancho del Rey Well.

On March 3, 2010, the Board adopted the Mitigated Negative Declaration for this project and a Notice of Determination was filed with the County of San Diego on March 5, 2010. In September 2010, a new 12-inch production well was drilled to a depth of 900 feet through the groundwater formation and into fractured bedrock. Testing showed the long-term yield of the new well to be 450 gpm, higher than previous studies had estimated. Separation Processes, Inc. (SPI), a highly qualified membrane treatment firm, was hired to conduct a detailed economic feasibility study to confirm that the annualized unit cost of the new water source was economically competitive with other sources. The economic study estimated the unit cost of water to be \$1, 500 to \$2,000 per acre-feet for an alternative that utilizes a seawater membrane for treating both salts and boron. When compared with the current imported treated water rate from the Water Authority, and with the knowledge that this rate will continually increase as MWD and the Water Authority raise their rates, the Rancho del Rey Well project appears to be economically viable.

The Otay WD is continuing to pursue the Rancho del Rey groundwater well opportunity with due consideration of the recommendations of the existing reports and plans to develop a groundwater well production facility to extract approximately 500 acre-feet per year. For water planning purposes, production of groundwater from the Rancho del Rey well is considered “additional planned” for local supplies. During preparation of this 2010 UWMP, the Otay WD has contracted for design services for the wellhead treatment facilities.

6.3.1.4 Otay Water District Desalination Project

The Otay WD is currently investigating the feasibility of purchasing desalinated water from a seawater reverse osmosis plant that is planned to be located in Rosarito, Mexico, known as the Otay Mesa Desalinated Water Conveyance System (Desalination) project. The treatment facility is intended to be designed, constructed, and operated in Mexico by a third party. The Otay WD's draft Desalination Feasibility Study, prepared in 2008, discusses the likely issues to be considered in terms of water treatment and monitoring, potential conveyance options within the United States from the international border to potential delivery points, and environmental, institutional, and permitting considerations for the Otay WD to import the Desalination project product water as a new local water supply resource.

While the treatment facility for the Desalination project will likely not be designed or operated by the Otay WD as the lead agency, it is important that the Otay WD maintain involvement with the planning, design, and construction of the facility to ensure that the implemented processes provide a product water of acceptable quality for distribution and use within the Otay WD's system as well as in other regional agencies' systems that may use the product water, i.e., City of San Diego, the Water Authority, etc. A seawater reverse osmosis treatment plant removes constituents of concern from the seawater, producing a water quality that far exceeds established United States and California drinking water regulations for most parameters, however, a two-pass treatment system may be required to meet acceptable concentrations of boron and chlorides, similar to the levels seen within the existing Otay WD supply sources. The Desalination Feasibility Study addresses product water quality that is considered acceptable for public health and distribution.

The Otay WD, or any other potential participating agencies, will be required to get approval from the CDPH in order to use the desalinated seawater as a water source. Several alternative approaches are identified for getting this approval. These alternatives vary in their cost and their likelihood of meeting CDPH approval.

The Rosarito Desalination Facility Conveyance and Disinfection System Project report addresses two supply targets for the desalinated water (i.e., local and regional). The local alternative assumes that only Otay WD would participate and receive desalinated water, while the regional alternative assumes that other regional and/or local agencies would also participated in the Rosarito project.

On November 3, 2010, the Otay WD authorized the General Manager to enter into an agreement with AECOM for the engineering design, environmental documentation, and the permitting for the construction of the conveyance pipeline, pump station, and disinfection facility to be constructed within the Otay WD. The supply target is assumed to be 50 MGD while the ultimate capacity of the plant will be 100 MGD.

The Otay WD is proceeding with negotiations among the parties to establish water supply resource acquisition terms through development of a Principles of Understanding document.

6.3.2 Otay WD Capital Improvement Program

The Otay WD plans, designs, constructs, and operates water system facilities to acquire sufficient supplies and to meet projected ultimate demands placed upon the potable and recycled water systems. In addition, the Otay WD forecasts needs and plans for water supply requirements to meet projected demands at ultimate build out. The necessary water facilities and water supply projects are implemented and constructed when development activities proceed and require service to achieve timely and adequate cost effective water service.

New water facilities that are required to accommodate the forecasted growth within the entire Otay WD service area are defined and described within the Otay WD 2010 WRMP Revision. These facilities are incorporated into the annual Otay WD Six Year Capital Improvement Program (CIP) for implementation when required to support development activities. As major development plans are formulated and precede through the land use jurisdictional agency approval processes, Otay WD prepares water system requirements specifically for the proposed development project consistent with the Otay WD 2010 WRMP Revision. These requirements document, define, and describe all the potable water and recycled water system facilities to be constructed to provide an acceptable and adequate level of service to the proposed land uses, as well as the financial responsibility of the facilities required for service. The Otay WD funds the facilities identified as CIP projects. Established water meter capacity fees and user rates are collected to fund the CIP project facilities. The developer funds all other required water system facilities to provide water service to their project.

Section 7 – Conclusion: Availability of Sufficient Supplies

The University Villages project is currently located within the jurisdictions of the Otay WD, Water Authority, and MWD. To obtain permanent imported water supply service, land areas are required to be within the jurisdictions of the Otay WD, Water Authority, and MWD to utilize imported water supply.

The Water Authority and MWD have an established process that ensures supplies are being planned to meet future growth. Any annexations and revisions to established land use plans are captured in the San Diego Association of Governments (SANDAG) updated forecasts for land use planning, demographics, and economic projections. SANDAG serves as the regional, intergovernmental planning agency that develops and provides forecast information. The Water Authority and MWD update their demand forecasts and supply needs based on the most recent SANDAG forecast approximately every five years to coincide with preparation of their urban water management plans. Prior to the next forecast update, local jurisdictions with land use authority may require water supply assessment and/or verification reports for proposed land developments that are not within the Otay WD, Water Authority, or MWD

jurisdictions (i.e., pending or proposed annexations) or that have revised land use plans with either lower or higher development intensities than reflected in the existing growth forecasts. Proposed land areas with pending or proposed annexations, or revised land use plans, typically result in creating higher demand and supply requirements than previously anticipated. The Otay WD, Water Authority, and MWD next demand forecast and supply requirements and associated planning documents would then capture any increase or decrease in demands and required supplies as a result of annexations or revised land use planning decisions.

MWD's Integrated Resources Plan (IRP) identifies a mix of resources (imported and local) that, when implemented, will provide 100 percent reliability for full-service demands through the attainment of regional targets set for conservation, local supplies, State Water Project supplies, Colorado River supplies, groundwater banking, and water transfers. The 2010 update to the IRP includes a planning buffer supply intended to mitigate against the risks associated with implementation of local and imported supply programs and for the risk that future demands could be higher than projected. The planning buffer identifies an additional increment of water that could potentially be developed when needed and if other supplies are not fully implemented as planned. As part of implementation of the planning buffer, MWD periodically evaluates supply development, supply conditions, and projected demands to ensure that the region is not under or over developing supplies. Managed properly, the planning buffer will help ensure that the southern California region, including San Diego County, will have adequate water supplies to meet long-term future demands.

In Section ES-5 of their 2010 RUWMP, MWD states that they have supply capacities that would be sufficient to meet expected demands from 2015 through 2035. MWD has plans for supply implementation and continued development of a diversified resource mix including programs in the Colorado River Aqueduct, State Water Project, Central Valley Transfers, local resource projects, and in-region storage that enables the region to meet its water supply needs. MWD's 2010 RUWMP identifies potential reserve supplies in the supply capability analysis (Tables 2-9, 2-10, and 2-11), which could be available to meet the unanticipated demands.

The County Water Authority Act, Section 5 subdivision 11, states that the Water Authority "as far as practicable, shall provide each of its member agencies with adequate supplies of water to meet their expanding and increasing needs."

As part of preparation of a written water supply assessment report, an agency's shortage contingency analysis should be considered in determining sufficiency of supply. Section 11 of the Water Authority's 2010 Updated UWMP contains a detailed shortage contingency analysis that addresses a regional catastrophic shortage situation and drought management. The analysis demonstrates that the Water Authority and its member agencies, through the Emergency Response Plan, Emergency Storage Project, Carlsbad Desalination Project, and Drought Management Plan (DMP) are taking actions to prepare for and appropriately handle an interruption of water supplies. The DMP, adopted in May 2006, provides the Water

Authority and its member agencies with a series of potential actions to take when faced with a shortage of imported water supplies from MWD due to prolonged drought or other supply shortfall conditions. The actions will help the region avoid or minimize the impacts of shortages and ensure an equitable allocation of supplies.

The WSA&V Report identifies and describes the processes by which water demand projections for the proposed University Villages project will be fully included in the water demand and supply forecasts of the Urban Water Management Plans and other water resources planning documents of the Water Authority and MWD. Water supplies necessary to serve the demands of the proposed University Villages project, along with existing and other projected future users, as well as the actions necessary and status to develop these supplies, have been identified in the University Villages WSA&V Report and will be included in the future water supply planning documents of the Water Authority and MWD.

This WSA&V Report includes, among other information, an identification of existing water supply entitlements, water rights, water service contracts, water supply projects, or agreements relevant to the identified water supply needs for the proposed Project. This WSA&V Report assesses, demonstrates, and documents that sufficient water supplies are planned for and are intended to be available over a 20-year planning horizon, under normal conditions and in single-dry and multiple-dry years to meet the projected demand of the proposed University Villages project and the existing and other planned development projects to be served by the Otay WD.

Table 8 presents the forecasted balance of water demands and required supplies for the Otay WD service area under average or normal year conditions. The total actual demand for FY 2012 was 35,423 acre-feet. The demand for FY 2012 is 3,482 acre-feet lower than the demand in FY 2005 of 38,905 acre-feet. The drop in demand is a result of the unit price of water, the conservation efforts of users as a result of the prolonged drought, and the economy.

Table 9 presents the forecasted balance of water demands and supplies for the Otay WD service area under single-dry year conditions. Table 9 presents the forecasted balance of water demands and supplies for the Otay WD service area under multiple-dry year conditions for the three year period ending in 2015. The multiple-dry year conditions for periods ending in 2023, 2028, and 2033 are provided in the Otay WD 2010 UWMP. The projected potable demand and supply requirements shown the Tables 8 and 9 are from the Otay WD 2010 UWMP. Hot, dry weather may generate urban water demands that are about 6.4 percent greater than normal. This percentage was utilized to generate the dry year demands shown in Table 9. The recycled water supplies are assumed to experience no reduction in a dry year.

Table 8
Projected Balance of Water Demands and Supplies Normal Year Conditions (acre-feet)

Description	FY 2015	FY 2020	FY 2025	FY 2030	FY 2035
Demands					
Otay WD Demands	44,883	53,768	63,811	70,669	77,171
Freeway Commercial Demands	127	127	127	127	127
Village 2 Demands	529	529	529	529	529
University Villages Demands	41	41	41	41	41
Additional Conservation Target	0	(7,447)	(13,996)	(17,895)	(20,557)
Total Demand	45,580	47,018	50,512	53,472	57,311
Supplies					
Water Authority Supply	40,483	41,321	44,015	45,974	48,614
Water Authority Accelerated Forecast Growth Increment	697	697	697	697	697
Recycled Water Supply	4,400	5,000	5,800	6,800	8,000
Total Supply	45,580	47,018	50,512	53,472	57,311
Supply Surplus/(Deficit)	0	0	0	0	0
The 697 (127+529+41) AFY increase in demand is accounted for through the Accelerated Forecasted Growth demand increment of the Water Authority's 2010 UWMP.					

Table 9 presents the forecasted balance of water demands and supplies for the Otay WD service area under single-dry year and multiple-dry year conditions as from the Otay WD 2010 UWMP.

Table 9
Projected Balance of Water Demands and Supplies
Single-Dry and Multiple-Dry Year Conditions (acre-feet)

	Normal Year	Single-Dry Year	Multiple-Dry Years		
	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Demands					
OWD Demands	37,176	41,566	43,614	46,385	50,291
Total Demand	37,176	41,566	43,614	46,385	50,291
Supplies					
Water Authority Supply	33,268	37,535	39,460	42,108	45,891
Recycled Water Supply	3,908	4,031	4,154	4,277	4,400
Total Supply	37,176	41,566	43,614	46,385	50,291
Supply Surplus/(Deficit)	0	0	0	0	0
District Demand totals with SBX7-7 conservation target achievement plus single-dry year increase as shown. The Water Authority could implement its DMP. In this instances, the Water Authority may have to allocate supply shortages based on it equitable allocation methodology in its DMP.					

Dry year demands assumed to generate a 6.4% increase in demand over normal conditions for each year in addition to new demand growth.

Table 9 also presents the forecasted balance of water demands and supplies for the Otay WD service area under multiple-dry year conditions for the three year period ending in 2015.

In evaluating the availability of sufficient water supply, the University Villages project development proponents will be required to participate in the development of alternative water supply project(s). This can be achieved through payment of the New Water Supply Fee adopted by the Otay WD Board in May 2010. These water supply projects are in addition to those identified as sustainable supplies in the current Water Authority and MWD UWMP, IRP, Master Plans, and other planning documents. These new water supply projects are in response to the regional water supply issues related to climatological, environmental, legal, and other challenges that impact water source supply conditions, such as the court rulings regarding the Sacramento-San Joaquin Delta and the current ongoing western states drought conditions. These new additional water supply projects are not currently developed and are in various stages of the planning process. The Otay WD water supply development program includes, but is not limited to, projects such as the Middle Sweetwater River Basin Groundwater Well project, the North District Recycled Water Supply Concept, the Otay WD Desalination project, and the Rancho del Rey Groundwater Well project. The Water Authority and MWD's next forecasts and supply planning documents would capture any increase in water supplies resulting from any new water resources developed by the Otay WD.

The Otay WD acknowledges the ever-present challenge of balancing water supply with demand and the inherent need to possess a flexible and adaptable water supply implementation strategy that can be relied upon during normal and dry weather conditions. The responsible regional water supply agencies have and will continue to adapt their resource plans and strategies to meet climate, environmental, and legal challenges so that they may continue to provide water supplies to their service areas. The regional water suppliers along with Otay WD fully intend to maintain sufficient reliable supplies through the 20-year planning horizon under normal, single-dry, and multiple-dry year conditions to meet projected demand of the University Villages project, along with existing and other planned development projects within the Otay WD service area.

This WSA&V Report assesses, demonstrates, and documents that sufficient water supplies are planned for and are intended to be acquired, as well as the actions necessary and status to develop these supplies, to meet projected water demands of the University Villages project as well as existing and other reasonably foreseeable planned development projects within the Otay WD for a 20-year planning horizon, in normal and in single-dry and multiple-dry years.

Source Documents

City of Chula Vista, Otay Ranch Villages 3 North, a Portion of 4, 8 East, and 10 SB 610 and SB 221 Compliance request letter received August 20, 2013.

City of Chula Vista, "Otay Ranch General Development Plan/Sub-regional Plan, The Otay Ranch Joint Planning Project," October 1993 amended June 1996.

County of San Diego, "East Otay Mesa Specific Plan Area," adopted July 27, 1994.

Otay Water District, "2010 Water Resources Master Plan Update," Dated November, 2010.

Atkins and Otay Water District, "Otay Water District 2010 Urban Water Management Plan," June 2011.

Camp Dresser & McKee, Inc., "Otay Water District Integrated Water Resources Plan," March 2007

San Diego County Water Authority, "Urban Water Management Plan 2005 Update," November 2005 amended May 2007.

Metropolitan Water District of Southern California, "Regional Urban Water Management Plan," November 2005.

Dexter Wilson Engineering, Inc., "Overview of Water Service for Otay Ranch Villages 3 North, a Portion of 4, 8 East, and 10," August, 2013.

Camp Dresser & McKee, Inc., "Rosarito Desalination Facility Conveyance and Disinfection System Project," June 21, 2010.

PBS&J, "Draft Otay Water District North District Recycled Water System Development Project, Phase I Concept Study," December 2008.

NBS Lowry, "Middle Sweetwater River System Study Water Resources Audit," June 1991.

Michael R. Welch, "Middle Sweetwater River System Study Alternatives Evaluation," May 1993.

Michael R. Welch, "Middle Sweetwater River Basin Conjunctive Use Alternatives," September 1994.

Geoscience Support Services, Inc., "Otay Mesa Lot 7 Well Investigation," May 2001.

Boyle Engineering Corporation, "Groundwater Treatment Feasibility Study Ranch del Ray Well Site," September 1996.

Agreement for the Purchase of Treated Water from the Otay Water Treatment Plant between the City of San Diego and the Otay Water District.

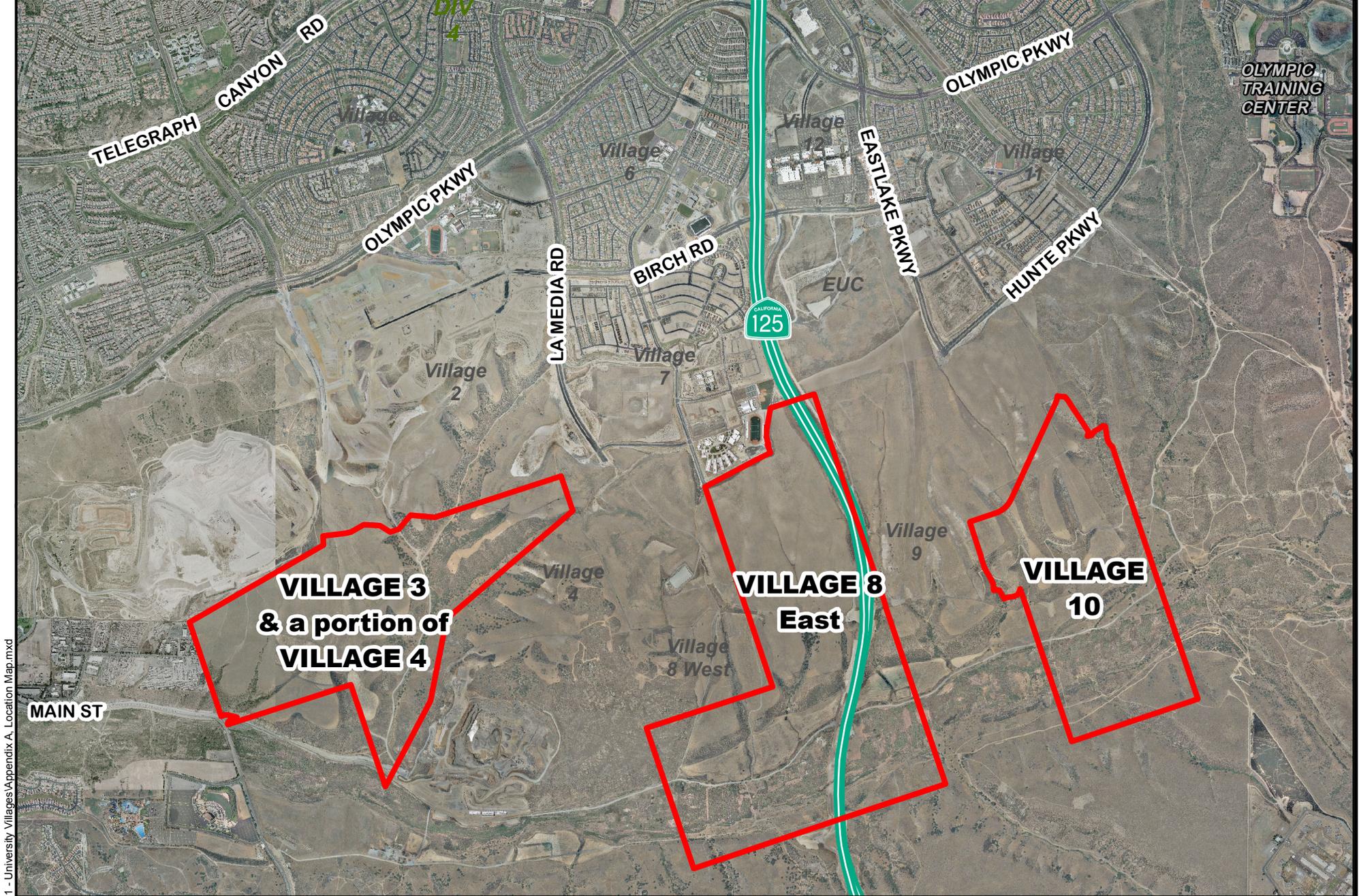
Agreement between the San Diego County Water Authority and Otay Water District regarding Implementation of the East County Regional Treated Water Improvement Program.

Agreement between the San Diego County Water Authority and Otay Water District for Design, Construction, Operation, and Maintenance of the Otay 14 Flow Control Facility Modification.

Agreement between the Otay Water District and the City of San Diego for Purchase of Reclaimed Water from the South Bay Water Reclamation Plant.

Appendix A

Otay Ranch University Villages Regional Location Map



P:\WORKING\WO_D0871 - University Villages\Appendix A, Location Map.mxd



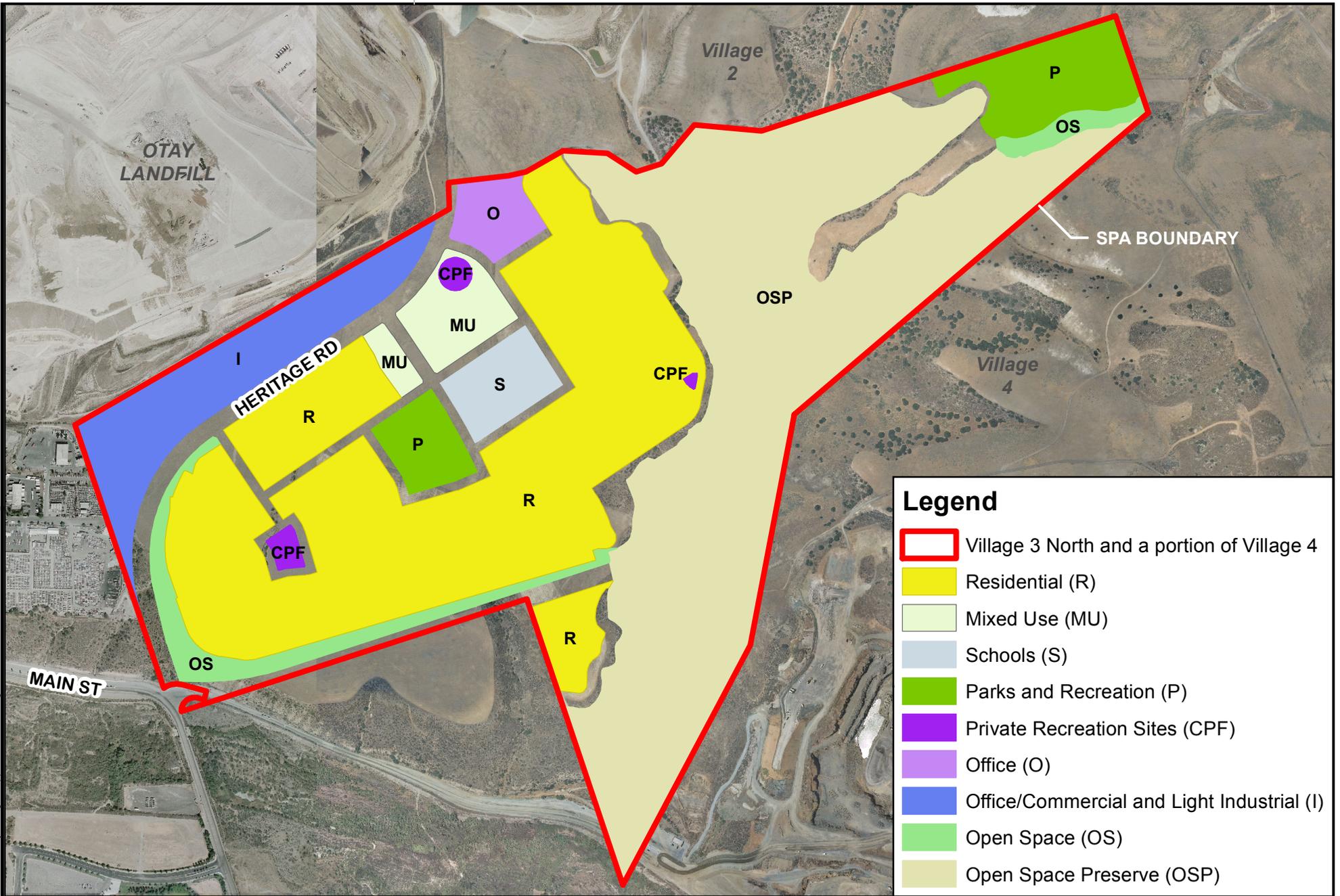
OTAY WATER DISTRICT
OTAY RANCH UNIVERSITY VILLAGES PROJECT
LOCATION MAP



D0871-090123

Appendices B1, B2, B3

Otay Ranch University Villages Proposed Development Plan



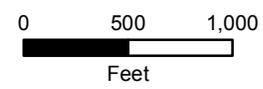
Legend

-  Village 3 North and a portion of Village 4
-  Residential (R)
-  Mixed Use (MU)
-  Schools (S)
-  Parks and Recreation (P)
-  Private Recreation Sites (CPF)
-  Office (O)
-  Office/Commercial and Light Industrial (I)
-  Open Space (OS)
-  Open Space Preserve (OSP)

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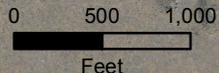
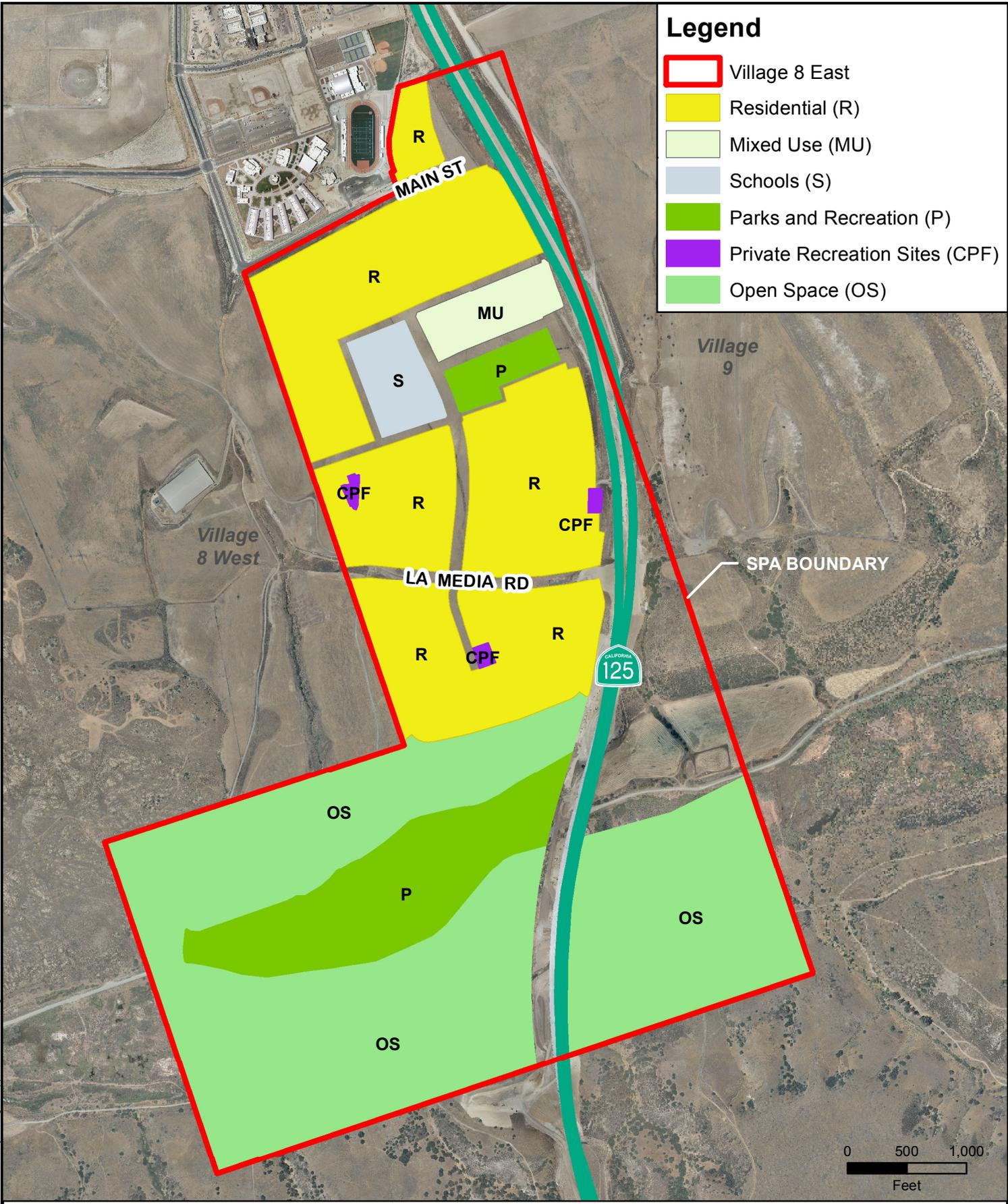
OTAY WATER DISTRICT
OTAY RANCH UNIVERSITY VILLAGES PROJECT
VILLAGE 3 NORTH AND A PORTION OF VILLAGE 4 LAND USE MAP



D0871-090123

Legend

-  Village 8 East
-  Residential (R)
-  Mixed Use (MU)
-  Schools (S)
-  Parks and Recreation (P)
-  Private Recreation Sites (CPF)
-  Open Space (OS)



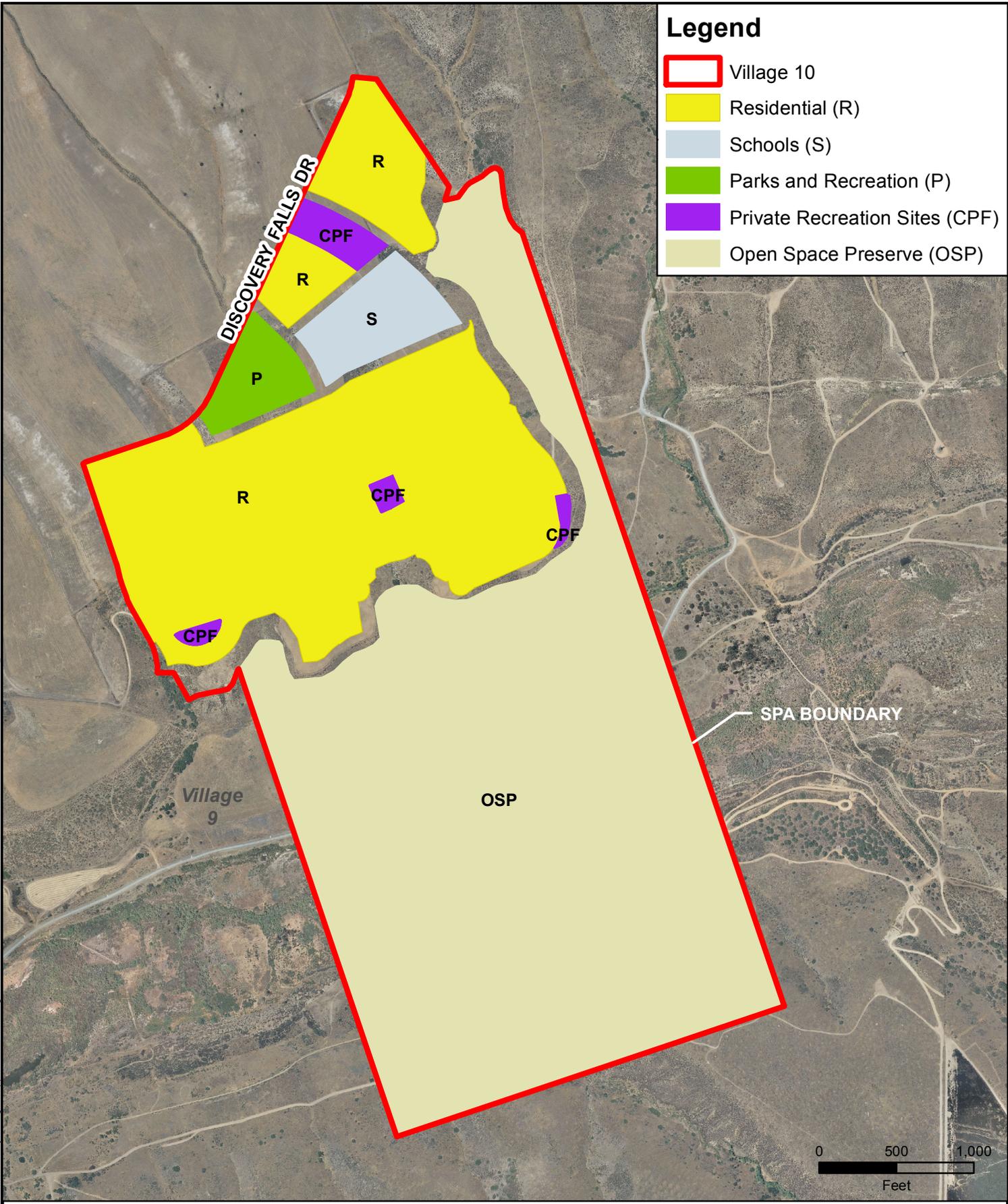
OTAY WATER DISTRICT OTAY RANCH UNIVERSITY VILLAGES PROJECT VILLAGE 8 EAST LAND USE MAP



D0871-090123

Legend

-  Village 10
-  Residential (R)
-  Schools (S)
-  Parks and Recreation (P)
-  Private Recreation Sites (CPF)
-  Open Space Preserve (OSP)



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OTAY WATER DISTRICT

OTAY RANCH UNIVERSITY VILLAGES PROJECT

VILLAGE 10 LAND USE MAP



D0871-090123



Otay Water District Board of Directors Meeting

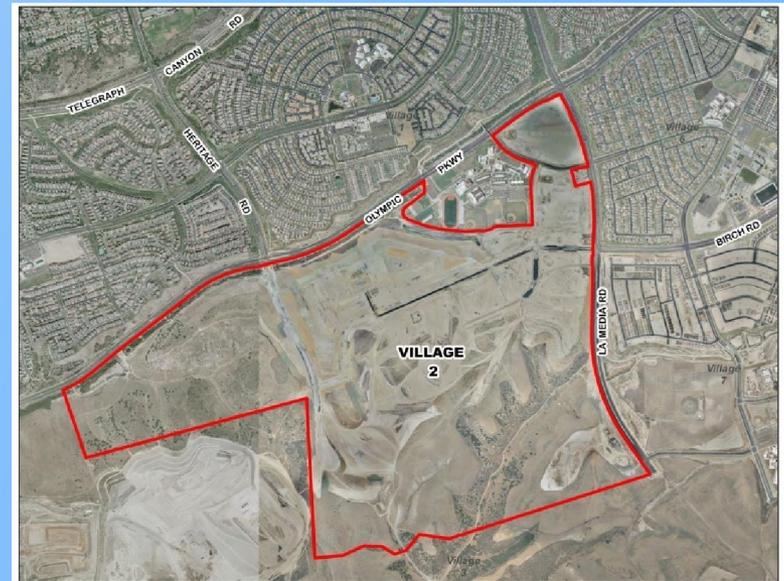
November 6, 2013

Water Supply Assessment & Verification Report for Otay Ranch University Villages Project & Village 2 SPA Amendment SB 610 & SB 221 Compliance

Village 2



University Villages



BACKGROUND

Senate Bills 610 and 221 became effective on January 1, 2002, with the primary intent to improve the link between water supply availability and land use decisions.

SB 610 Water Supply Assessment (WSA):

- **Requires water purveyor to prepare a Water Supply Assessment Report for inclusion in agency CEQA documentation.**

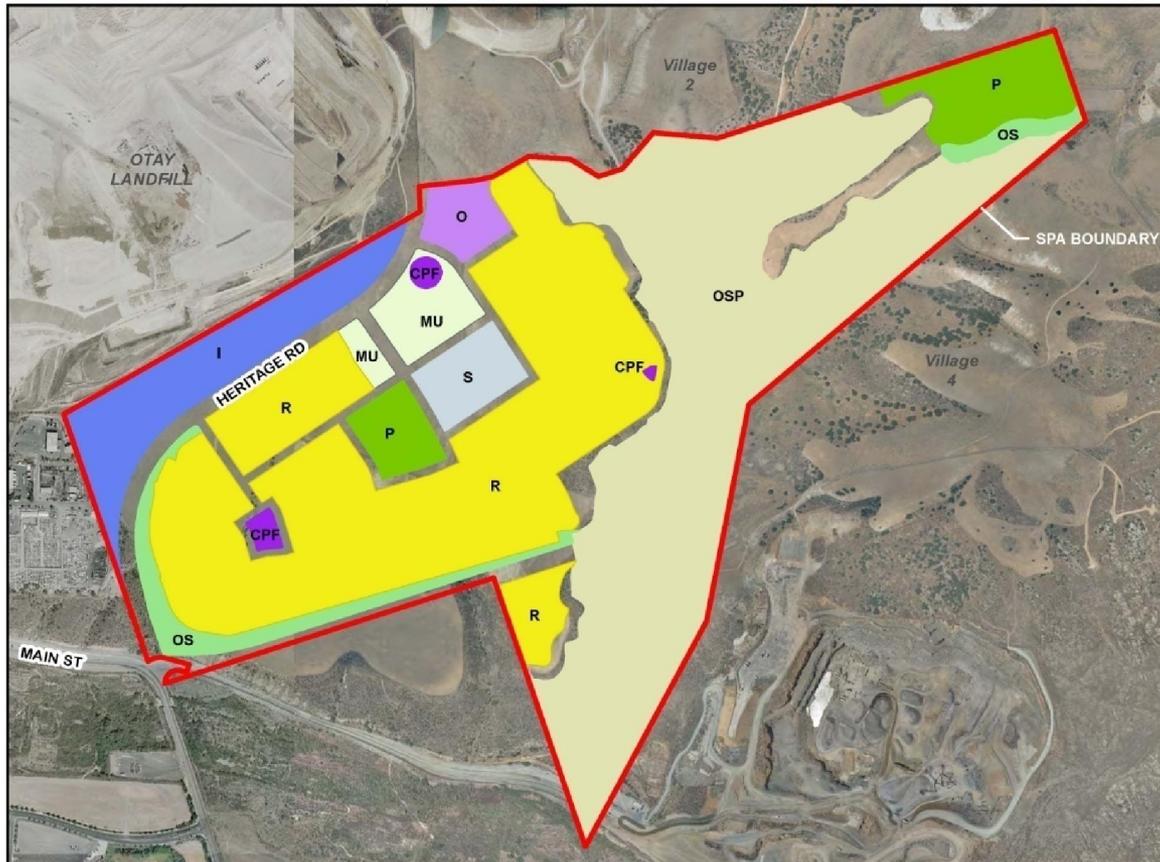
SB 221 Water Supply Assessment & Verification (WSA&V):

- **Requires water purveyor to prepare a Water Supply Assessment & Verification Report for inclusion in agency CEQA documentation.**
- **Board approval required for submittal of the WSA&V Report to City of Chula Vista.**

Otay Ranch University Villages Project

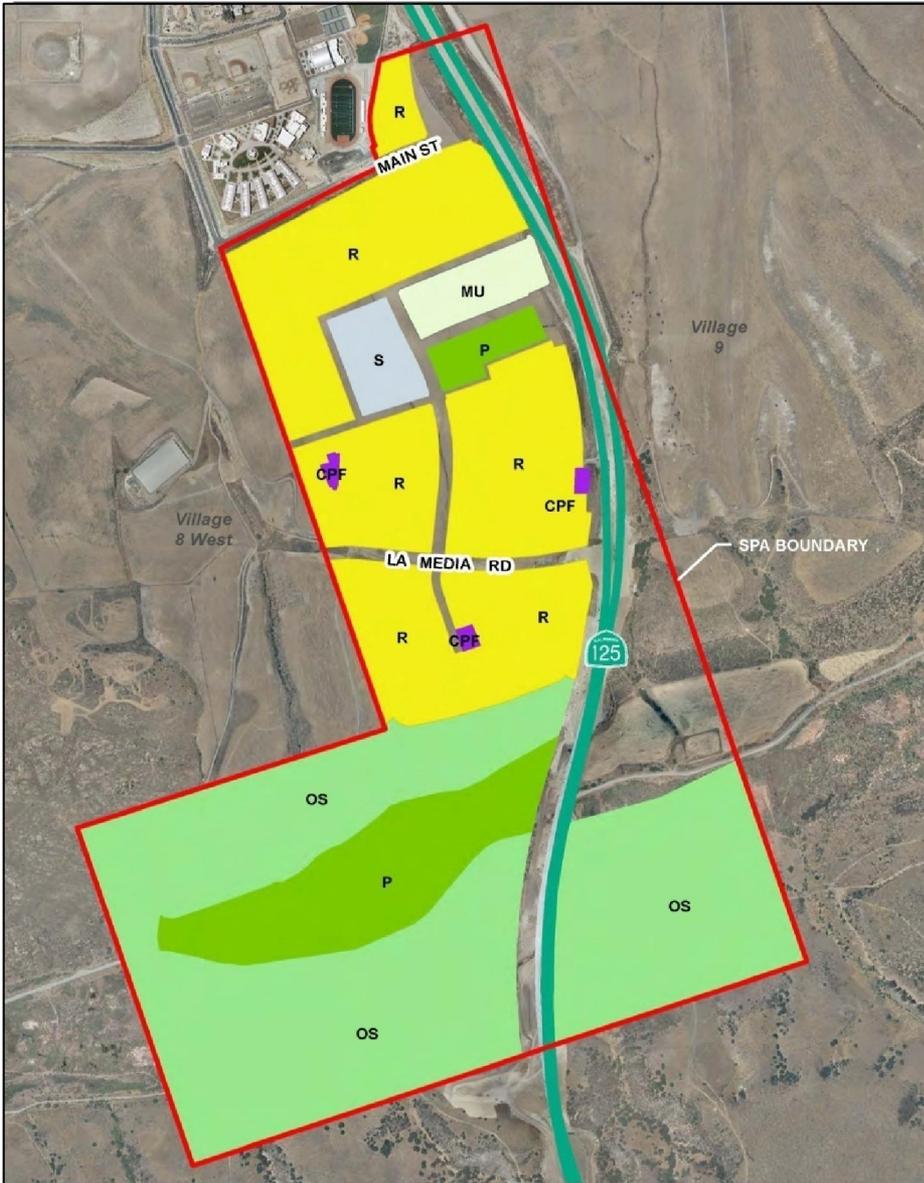
Total Water Demand

Potable – 2,393 AFY / Recycled - 616 AFY , 41 AFY Increase



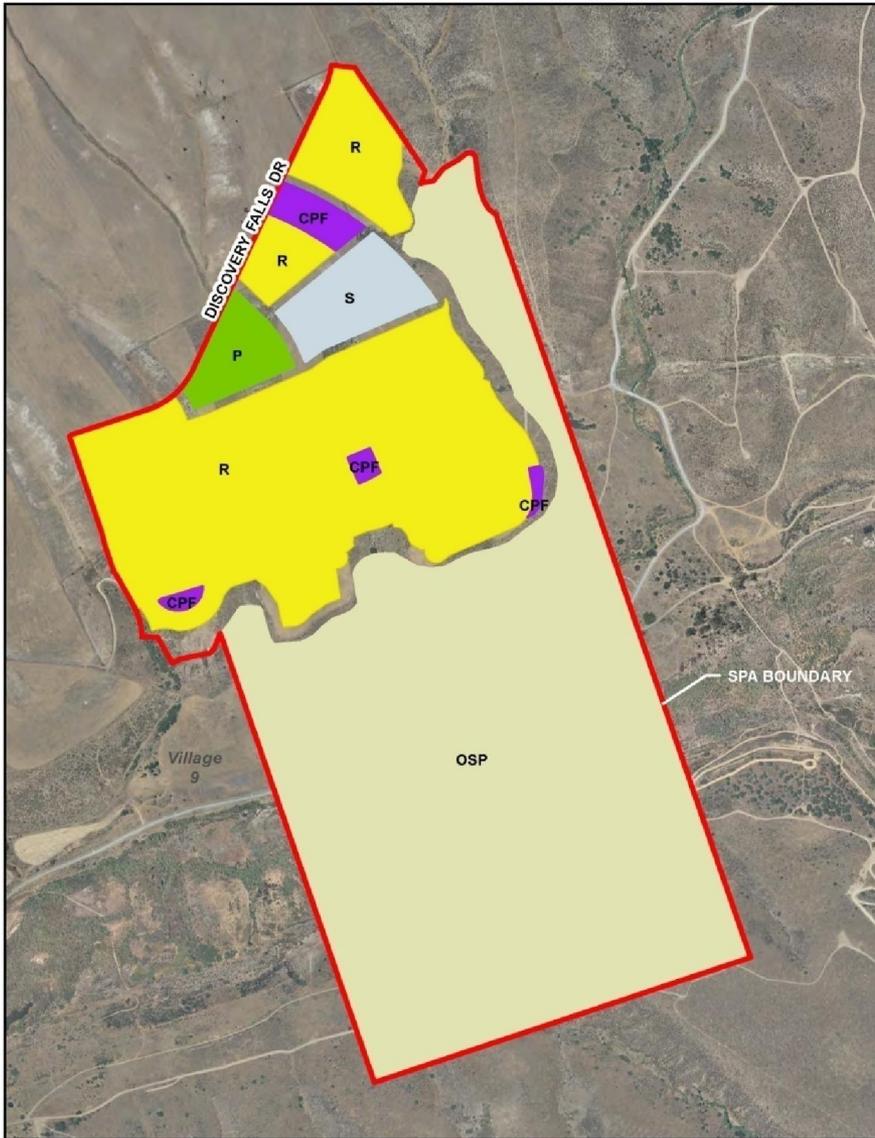
Village 3 & a portion of Village 4

- Pedestrian & transit oriented village
- 1,597 homes around a mixed use core (1002 SF homes / 585 MF units)
- 20,000 sq. ft. retail commercial
- Elementary School
- Park site
- Non-residential areas include open space & open space preserve, office space & light industrial



Village 8 East

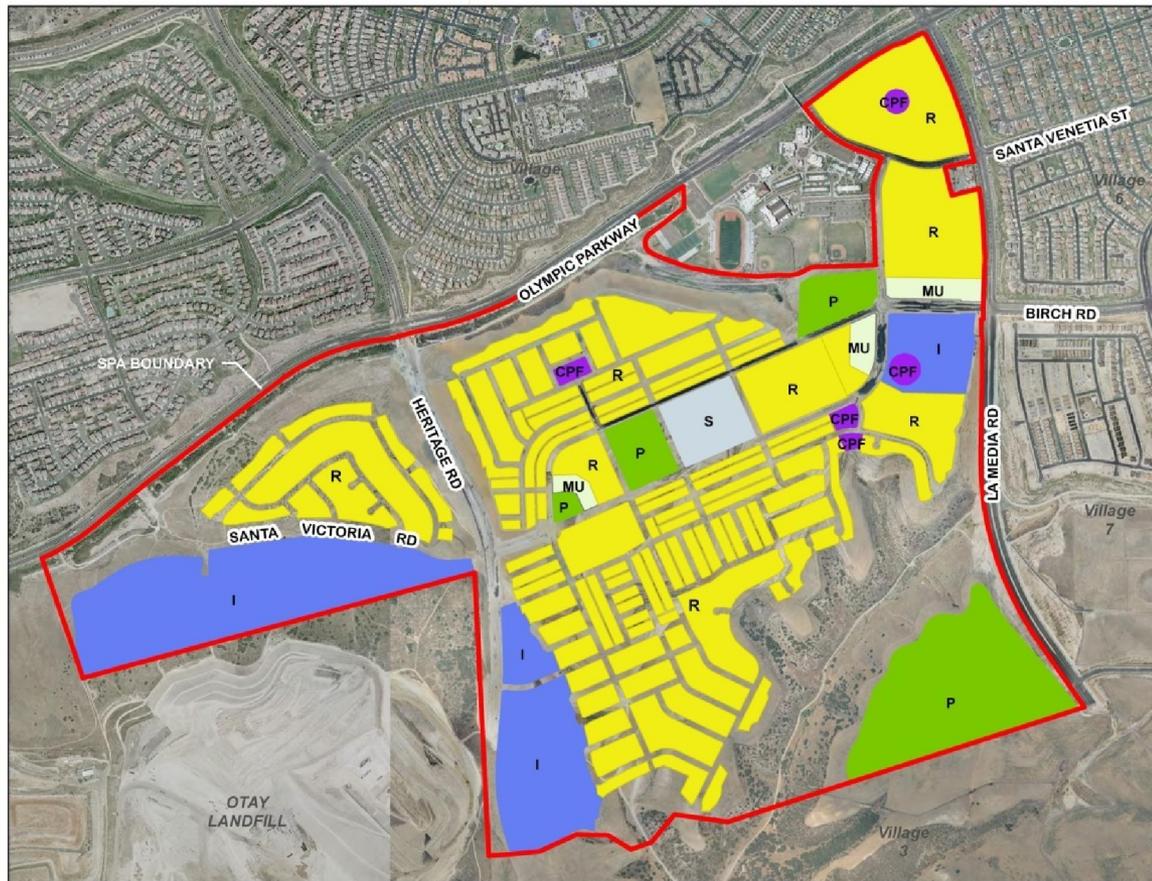
- Pedestrian oriented urban village
- 3,560 mixed-density residential (963 SF / 2,497 MF units)
- 20,000 sq. ft. commercial retail
- Elementary school
- Neighborhood park
- Open space – 11 acres



Village 10

- Pedestrian oriented urban village
- 1,740 mixed-density residential (692 SF / 1,048 MF units)
- Elementary school
- Neighborhood park
- Small private recreation sites (Community Park Facilities (CPF))
- 16.5 acres of open space preserve

Otay Ranch Village 2 SPA Amendment



- Split into many ownerships, Baldwin & Sons is majority owner
- Amendment of Sectional Planning Area Plan requires updated WSA&V
- Addition of 1,564 residential units, elementary school, park, & CPF sites

Water Supply Assessment & Verification Report

- **The regional and local water supply agencies acknowledge the challenges and fully intend to develop sufficient, reliable supplies to meet demands.**
- **Water suppliers recognize additional water supplies are necessary and portfolios need to be reassessed and redistributed with intent to serve existing and future needs.**

Water Supply Assessment & Verification Report

- **The Report documents the planned water supply projects and the actions necessary to develop the supplies.**
- **Water supply for the Projects and for existing and future developments within the District for a 20-year planning horizon, under normal and in single-dry and multiple-dry years, are planned for and are intended to be made available.**

Otay Water District

Planned Local Water Supply Projects	Supply (AF)
Rancho del Rey Groundwater Well	500
Rosarito Ocean Desalination Project	20,000-50,000
Otay Mesa Lot 7 Groundwater Well	300
Otay Mesa Recycled Water Supply Link Project	800

Water Authority Supplies

WATER AUTHORITY SUPPLIES (AFY)	2015	2020	2025	2030 / 2035
IID Water Transfer	100,000	190,000	200,000	200,000
ACC and CC Lining	80,200	80,200	80,200	80,200
Carlsbad Desalination	0	56,000	56,000	56,000
Sub-Total:	180,200	326,200	336,200	336,200

Source: Table 9-1 Water Authority 2010 UWMP

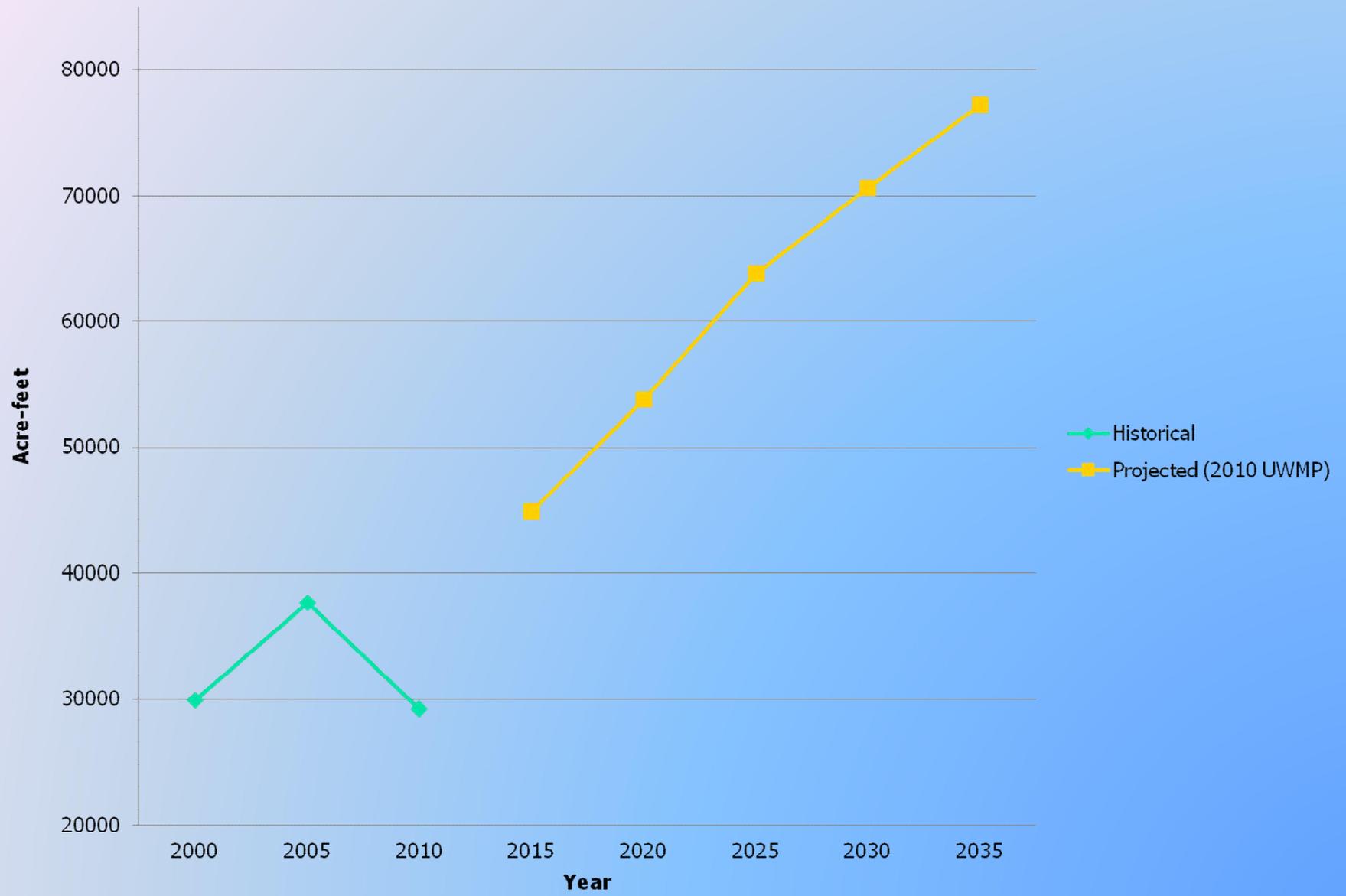
Otay Water District

Projected Balance of Supply and Demand

Description	FY 2015	FY 2020	FY 2025	FY 2030	FY 2035
Demands					
Otay WD Demands	44,883	53,768	63,811	70,669	77,171
Univ. Villages Demands	41	41	41	41	41
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Water Authority Accel. Forecast Growth Increment	697	697	697	697	697
Recycled Water Supply	4,400	5,000	5,800	6,800	8,000
Total Supply	45,580	47,018	50,512	53,472	57,311
Supply Surplus/(Deficit)	0	0	0	0	0

The 697 (41+529+127) AFY increase in demand is accounted for through the Accelerated Forecasted Growth demand increment of the Water Authority's 2010 UWMP.

Projected & Historical Potable Water Fiscal Year Demands



CONCLUSION

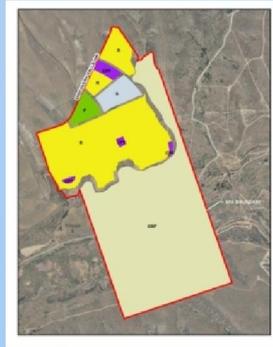
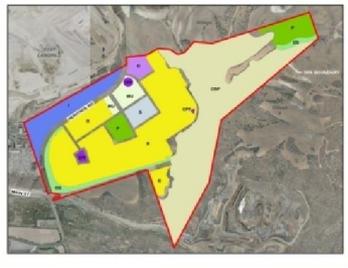
- **Water demand and supply forecasts are included in the planning documents of MWD, Water Authority, and the Otay Water District.**
- **Actions necessary to develop the identified water supplies are documented.**
- **The Otay Ranch University Villages Project & the Otay Ranch Village 2 SPA Amendment SB 610 & SB 221 WSA&V Reports demonstrate and document that sufficient water supplies are planned for and are intended to be available over the next 20 years.**

CONCLUSION (continued)

- **It is believed that the Board has met the intent of SB 610 & SB 221 statute in that:**
 - 1) Land use agencies and water suppliers have demonstrated strong linkage.**
 - 2) The Otay Ranch University Villages Project and the Otay Ranch Village 2 SPA Amendment Water Supply Assessment & Verification Reports clearly document the current water supply situation.**

STAFF RECOMMENDATION

That the Board of Directors approve Senate Bills 610 & 221 Water Supply Assessment & Verification Report dated August 2013 for the Otay Ranch University Villages Project and the Otay Ranch Village 2 SPA Amendment.





QUESTIONS?

