Appendix F-1
Water Supply Assessment

IRVINE RANCH WATER DISTRICT
ASSESSMENT OF WATER SUPPLY
Water Code §10910 *et seq.*

To: (*Lead Agency*)

City of Irvine
One Civic Center Plaza
Irvine, CA 92623-9575

(*Applicant*)
Brookfield Residential
3200 Park Center Drive, Suite 100
Costa Mesa, CA 92626

Project Information

Project Title: Gateway Residential (Exhibit A)

☒ *Residential*: No. of dwelling units: 1,360 dwelling units (See Exhibit B)
☐ *Shopping center or business*: No. of employees N/A Sq. ft. of floor space N/A
☐ *Commercial office*: No. of employees _____ Sq. ft. of floor space _____
☐ *Hotel or motel*: No. of rooms _____
☐ *Industrial, manufacturing or processing*: No. of employees _____ No. of acres _____
Sq. ft. of floor space _____
☐ *Mixed use* (check and complete all above that apply) _____
☐ *Other*: _____

Assessment of Availability of Water Supply

On 14 APR 2025 the Board of Directors of the Irvine Ranch Water District (IRWD) approved the within assessment and made the following determination regarding the above-described Project:

☒ The projected water demand for the Project ☐ was ☒ was not included in IRWD's most recently adopted urban water management plan.

☒ A sufficient water supply is available for the Project.
The total water supplies available to IRWD during normal, single-dry and multiple-dry years within a 20-year projection will meet the projected water demand of the Project in addition to the demand of existing and other planned future uses, including, but not limited to, agricultural and manufacturing uses.

☐ A sufficient water supply is not available for the Project. *[Plan for acquiring and developing sufficient supply attached. Water Code § 10911(a)]*

The foregoing determination is based on the following Water Supply Assessment Information and supporting information in the records of IRWD.

Kristine Swan 15-April-2025 District Secretary
Signature *Date* *Title*

Water Supply Assessment Information

Purpose of Assessment

Irvine Ranch Water District ("IRWD") has been identified by the City as a public water system that will supply water service (both potable and nonpotable) to the project identified on the cover page of this assessment (the "Project"). As the public water system, IRWD is required by Section 10910 *et seq.* of the Water Code to provide the City with an assessment of water supply availability ("assessment") for defined types of projects. The Project has been found by the City to be a project requiring an assessment. The City is required to include this assessment in the environmental document for the Project, and based on the record, make a determination whether projected water supplies are sufficient for the Project and existing and planned uses.

Water Code Section 10910 *et seq.* (the "Assessment Law") contains the requirements for the information to be set forth in the assessment.

Prior Water Supply Assessments

IRWD does not allocate particular supplies to any project but identifies total supplies for its service area. Because of IRWD's aggregation of demands and supplies, each assessment completed by IRWD is expected to be generally similar to the most recent assessment, with changes as needed to take into account changes, if any, in demands and supplies, and any updated and corrected information obtained by IRWD. Previously assessed projects' water demands will be included in the baseline. A newly assessed project's water demand will have been included in previous water supply assessments for other projects (as part of IRWD's "full build-out" demand) to the extent of any land use planning or other water demand information for the project that was available to IRWD.

The Project's water demand was included (as part of IRWD's "full build-out" demand) in previous water supply assessments performed by IRWD, based on land use planning information available to IRWD. In this water supply assessment, the Project demand will be revised in accordance with updated information provided by the applicant and included in the "with project" demand.

Supporting Documentation

IRWD prepares two planning documents to guide water supply decision-making. IRWD's principal planning document is IRWD's "Water Resources Master Plan" ("WRMP"). The WRMP is a comprehensive document compiling data and analyses that IRWD considers necessary for its planning needs. IRWD also prepares an Urban Water Management Plan ("UWMP"), a document required by statute. The UWMP is based on the WRMP, but contains defined elements as listed in the statute (Water Code Section 10631 *et seq.*), and, as a result, is more limited than the WRMP in the treatment of supply and demand issues. Therefore, IRWD primarily relies on its most recent WRMP. The UWMP is required to be updated in years ending with "five" and "zero," and IRWD's most recent update of that document (2020 UWMP) was adopted in June 2021.

In addition to the WRMP and the 2020 UWMP mentioned above, other supporting documentation referenced herein is found in Section 6 of this assessment.

Due to the number of contracts, statutes and other documents comprising IRWD's written proof of entitlement to its water supplies, in lieu of attachment of such items, they are identified by title and summarized in Section 2(b) of this assessment (written contracts/proof of entitlement). Copies of the summarized items can be obtained from IRWD.

Assessment Methodology

Water use factors; dry-year increases. IRWD employs water use factors to enable it to assign water demands to the various land use types and aggregate the demands. The water use factors are based on average water use and incorporate the effect of IRWD's tiered-rate conservation pricing and its other water use efficiency programs. The factors are derived from historical usage (billing data) and a detailed review of water use factors within the IRWD service areas conducted as a part of the WRMP. System losses at a rate of approximately 5% are built into the water use factors. Water demands also reflect normal hydrologic conditions (precipitation). Lower levels of precipitation and higher temperatures will temporarily result in higher water demands, due primarily to the need for additional water for irrigation. To reflect this, base (normal) WRMP water demands have been increased by 7% in the assessment during both "single-dry" and "multiple-dry" years. This increase in estimated demands is considered conservative and is consistent with the Municipal Water District of Orange County's ("MWDOC") 2020 UWMP which assumes increased demands in single-dry and multiple dry years of 6% based on MWDOC's Orange County Reliability Study (MWDOC 2020 UWMP, pg. 7-2). The Metropolitan Water District of Southern California ("MWD") also considers these weather variables in their climate adjustment factors when forecasting demands, as documented in MWD's 2020 UWMP which shows an average increase of 8% for single dry year demands (MWD 2020 UWMP Tables 2-4, 2-5, 2-6) and also documented in their 2020 Integrated Resources Plan - Regional Needs Assessment (2022).

Planning horizon. In accordance with Water Code Section 10910, this assessment reviews demands and supplies covering a 20-year planning horizon. For consistency with IRWD's WRMP, the assessment reviews demands and supplies through the year 2045, which is considered to include build-out or "ultimate development".

Assessment of demands. Water demands are reviewed in this assessment for three development projections (to 2045):

- Existing and committed demand (without the Project) ("baseline"). This provides a baseline condition as of the date of this assessment, consisting of demand from existing development, plus demand from development that has both approved zoning and (if required by the Assessment Law) an adopted water supply assessment.

- Existing and committed demand, plus the Project ("with-project"). This projection adds the Project water demands to the baseline demands.

- Full WRMP build-out ("full build-out"). In addition to the Project, this projection adds potential demands for all presently undeveloped areas of IRWD based on current general plan information, modified by more specific information available to IRWD, as more fully described in Chapter 2 of the WRMP.

Assessment of supplies. For comparison with demands, water supplies are classified as *currently available* or *under development*:

- *Currently available* supplies include those that are presently operational, and those that will be operational within the next several years. Supplies expected to be operational in the next several years are those having completed or substantially completed the environmental and regulatory review process, as well as having necessary contracts (if any) in place to move forward. These supplies are in various stages of planning, design, or construction.

- In general, supplies *under development* may necessitate the preparation and completion of environmental documents, regulatory approvals, and/or contracts prior to full construction and implementation.

IRWD is also evaluating the development of additional supplies that are not included in either *currently available* or *under-development* supplies for purposes of this assessment. As outlined in the WRMP, prudent water supply and financial planning dictates that development of supplies be phased in over time consistent with the growth in demand.

Water supplies available to IRWD include several sources: groundwater pumped from the Orange County groundwater basin (including the Irvine Subbasin); captured local (native) surface water; recycled sewage; and supplemental imported water supplied by MWD through the MWDOC. The supply-demand comparisons in this assessment are broken down among the various sources and are further separated into potable and nonpotable water sources.

Comparison of demand and supply. The three demand projections noted above (baseline, with-project and full build-out) are compared with supplies in the following ways:

- On a total *annual* quantity basis (stated in acre-feet per year ("AFY")).

- On a *peak-flow* (maximum day) basis (stated in cubic feet per second ("cfs")).

- Under three climate conditions: base (normal) conditions and single-dry and multiple-dry year conditions. (Note: These conditions are compared for *annual* demands and not for *peak-flow* demands. *Peak-flow* is a measure of a water delivery system's ability to meet the highest day's demand of the fluctuating demands that will be experienced in a year's time. Peak demands occur during the hot, dry season and as a result are not appreciably changed by dry-year conditions; dry-year conditions do affect *annual* demand by increasing the quantity of water needed to supplement normal wet-season precipitation.)

Summary of Results of Demand-Supply Comparisons

Listed below are Figures provided in this assessment, comparing projected potable and nonpotable water supplies and demands under the three development projections:

Figure 1: Normal Year Supply and Demand – Potable Water
Figure 2: Single Dry-Year Supply and Demand – Potable Water
Figure 3: Multiple Dry-Year Supply and Demand – Potable Water
Figure 4: Maximum-Day Supply and Demand – Potable Water
Figure 5: Normal Year Supply and Demand – Nonpotable Water
Figure 6: Single Dry-Year Supply and Demand – Nonpotable Water
Figure 7: Multiple Dry-Year Supply and Demand – Nonpotable Water
Figure 8: Maximum-Day Supply and Demand – Nonpotable Water

It can be observed in the Figures that IRWD's *supplies* remain essentially constant between normal, single-dry, and multiple-dry years. This result is due to the fact that groundwater and MWD imported water account for the majority of all of IRWD's potable supply, and recycled water, groundwater and imported water comprise all of IRWD's nonpotable supply. Groundwater production typically remains constant or may increase in cycles of dry years, even if overdraft of the basin temporarily increases, as groundwater producers reduce their demand on imported supplies to secure reliability. (See Section 4 herein.) As to imported water, MWD's 2020 Urban Water Management Plan (MWD 2020 UWMP) concludes that MWD has supply capabilities sufficient to meet expected demands from 2025 through 2045 under a single dry year condition and a period of drought lasting five consecutive water years, as well as in a normal water year hydrologic condition. (See also Section 2(b) (1) "IMPORTED SUPPLY - ADDITIONAL INFORMATION," below.) Recycled water production also remains constant and is considered "drought-proof" as a result of the fact that sewage flows remain virtually unaffected by dry years. Only a small portion of IRWD's supply, native water captured in Irvine Lake, is reduced in single-dry and multiple-dry years. The foregoing factors also serve to explain why there is no difference in IRWD's supplies between single-dry and multiple-dry years.

A review of the Figures indicates the following:

- *Currently available* supplies of potable water are adequate to meet annual demands for the *baseline, with-project* and *full build-out* scenarios projected under the normal year, and the single- and multiple-dry year conditions through the year 2045. (Figures 1, 2 and 3.) IRWD plans to proceed with the implementation of future potable supplies (*under development)*, as shown in the Figures, to improve local reliability during dry-year conditions.

- Adequate *currently available* potable water supply capacity is available to meet *peak-flow* (maximum day) demands for all demand projections through the year 2045. (Figure 4.)

- With respect to nonpotable water, *currently available* supplies are adequate to meet projected annual demands for both the *baseline* and *with-project* demand projections under both dry-year conditions through the year 2045. (Figures 5, 6, 7 and 8.) IRWD has implemented all planned nonpotable supplies, as shown in the Figures, to improve local reliability during dry-year conditions.

The foregoing Figures provide an overview of IRWD potable and nonpotable water supply capabilities. More detailed information on the anticipated development and use of supplies, which incorporates source costs and reliability issues, is provided in the WRMP.

Margins of safety. The Figures and other information described in this assessment show that IRWD's assessment of supply availability contains several margins of safety or buffers:

- "Reserve" water supplies (excess of supplies over demands) will be available to serve as a buffer against inaccuracies in demand projections, future changes in land use, or alterations in supply availability.

- Conservative estimates of annual potable and nonpotable *imported* supplies have been made based on connected delivery capacity (by application of peaking factors as

described below in Section 2, footnote 1); additional supplies are expected to be available from these sources, based on legal entitlements, historical uses and information provided by MWD. In addition to MWD's existing regional supply assessments, this assessment has considered MWD information concerning operational limits on Delta pumping. See "***Actions on Delta Pumping,"*** below.

- Information provided by MWD, as the imported water supplier, concerning the adequacy of its regional supplies, summarized herein, demonstrates MWD's inclusion of reserves in its regional supply assessments. In addition to MWD's existing regional supply assessments, this assessment has considered MWD's information concerning operational limits on Delta pumping. See "***Actions on Delta Pumping,"*** below.

- Although groundwater supply amounts shown in this assessment assume production levels within applicable basin production percentages described herein, production of groundwater can exceed applicable basin production percentages on a short-term basis, which can provide additional reliability during dry years or emergencies. See "***IRWD's Evaluation of Effect of Reduced MWD Supplies to IRWD,"*** below.

Actions on Delta Pumping. The Sacramento/San Joaquin Delta ("Delta") is a vulnerable component in both the State and Federal systems to convey water from northern portions of California to areas south of the Delta. Issues associated with the Delta have generally been known for years; however, the continuing decline in the number of endangered Delta smelt resulted in the filing of litigation challenging permits for the operation of the Delta pumping facilities. On August 31, 2007, a Federal court ordered interim protective measures for the endangered Delta smelt, including operational limits on Delta pumping, which have an effect on State Water Project ("SWP") operations and supplies. On June 4, 2009, a federal biological opinion imposed rules that further restrict water diversions from the Delta to protect endangered salmon and other endangered fish species. Several proceedings concerning Delta operations were initiated to evaluate options to address Delta smelt impacts and other environmental concerns. In addition to the regulatory and judicial proceedings to address immediate environmental concerns, the Delta Vision process and Bay-Delta Conservation Plan ("BDCP") process were established to identify long-term solutions for the Delta. In addition, State and federal agencies and water user entities are currently engaged in the development of the Delta Conveyance Project (previously California WaterFix), which is aimed at making physical and operational improvements in the Delta necessary to improve south of the Delta SWP water supplies and water quality and protect ecosystem health in the Delta (MWD 2020 UWMP). Prior to the 2007 court decision, MWD's Board approved a Delta Action Plan in May 2007, that described short, mid and long-term conditions and the actions to mitigate potential supply shortages and to develop and implement long-term solutions. To address uncertainties in expected SWP supplies, in October 2007, MWD prepared its 2007 Integrated Resources Plan ("IRP") Implementation Report, in which MWD estimated that it could see as much as up to a 22% reduction on average of its SWP supplies based on the court order. As part of its ongoing long term planning, in its 2010 IRP Update, MWD identified changes to the long-term plan and established direction to address the range of potential changes in water supply planning. The 2010 IRP also discusses dealing with uncertainties related to impacts of climate change (see additional discussion of this below), as well as actions to protect endangered fisheries. The 2010 IRP Update emphasizes an evolving approach and suite of actions to address the water supply challenges that are posed by uncertain weather patterns, regulatory and environmental restrictions, water quality impacts and changes in the state and the region. The 2010 IRP Update includes MWD's Adaptive Resource Management Strategy three components: Core Resources Strategy, Supply Buffer Implementation and Foundational Actions, which together

provides the basis for the 2010 IRP Update. The 2010 IRP Update expands the concept of developing a planning buffer from the 2004 IRP Update by implementing a supply buffer equal to 10 percent of the total retail demand.

In January 2016, MWD adopted its 2015 IRP Update. In the 2015 IRP Update, MWD continued its Adaptive Resource Management Strategy and integrated future supply actions to improve the viability of potential contingency resources as needed, and to position the region to effectively implement these resources in a timely manner. The 2015 IRP finds that additional actions are needed in investments in conservation, local supplies, the Delta Conveyance Project (previously California WaterFix), and stabilizing Colorado River supplies. Among the supply actions, MWD will continue to work collaboratively with state and federal agencies on the California WaterFix, maximize its storage and transfer approach, and continue to develop and protect local supplies and conservation.

MWD is currently developing its 2020 IRP Update and has completed and adopted a 2020 IRP Regional Needs Assessment which is considered Phase 1 of the 2020 IRP. A One Water Implementation phase will be Phase 2 of the 2020 IRP. The One Water Implementation will take the results and findings of Phase 1 to identify integrated regional solutions. It will include an updated Adaptive Management Strategy, policies, programs and projects to address the findings and mitigate any potential shortages.

IRWD's Evaluation of Effect of Reduced MWD Supplies to IRWD: In the MWD 2020 UWMP, MWD states it has supply capability that would be sufficient to meet expected demands from 2025 to 2045 under single dry year and multiple dry year conditions. [1]

Based on the prior MWD 2007 IRP Implementation Report and also reported in the MWD 2015 IRP, MWD estimated that it could receive reduction of SWP supplies of up to 22% on average until a long-term solution was implemented. For purposes of ensuring a conservative analysis, IRWD made an evaluation of the effect of the 22% estimated reduction of MWD's SWP supplies on its overall imported supplies. IRWD estimates that 22% reduction of SWP supplies conservatively translates to approximately 16% reduction in all of MWD's imported supplies over the years 2025 through 2045. For this purpose, it is assumed that MWD's total supplies consist only of imported SWP and Colorado deliveries. Based on this estimate, this assessment uses a 16% reduction in MWD supplies available to IRWD for the years 2025 through 2045, using IRWD's connected capacity without any water supply allocation imposed by MWD. This reduction in MWD supplies is reflected in Figures 1, 2, 3, 5, 6, and 7. (See also the footnote 1).

Per the MWD 2020 UWMP, MWD performs water shortage planning in its Water Surplus and Drought Management ("WSDM") Plan (1988) which guides MWD's planning and operations during both shortage and surplus conditions. Furthermore, MWD developed the Water Supply Allocation Plan ("WSAP") (dated February 2009, updated December 2014) which provides standardized methodology for allocation of MWD's supplies during times of shortage. The WSDM Plan distinguishes between shortages, severe shortages, and extreme shortages.

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[1] The MWD 2020 UWMP utilized DWR's 2019 SWP Delivery Capability Report to estimate future SWP supplies for 2025 through 2045. These estimates incorporate the effect of regulatory requirements in accordance with biological opinions and also reflect potential impacts of climate change on SWP operations. Tables A.3-7 of the MWD 2020 UWMP reflect 58% or 1.1 MAF in MWD's expected average year SWP entitlement supplies. This amount is a higher expected average than MWD's 2015 estimate of 984,000 AF. For purposes of a conservative analysis, IRWD has used the 22% reduction in its supplies from MWD as the basis of IRWD's analysis.

These terms have specific meanings relating to MWD's ability to deliver water and the actions it takes. In June 2008, MWD's Board adopted a Water Supply Condition Framework to communicate the urgency of the region's water supply situation and the need for further water conservation to reduce regional demands, MWD uses the WSDM Plan and Framework to determine if a WSAP is recommended.

As an alternative means of analyzing the effect of reduced MWD supplies on IRWD, listed below are Figures provided comparing projected potable water supplies and demands in all of the five year increments, under a temporary MWD allocation scenario:

Figure 1a: Normal Year Supply and Demand (MWD Allocated) – Potable Water
Figure 2a: Single Dry-Year Supply and Demand (MWD Allocated) – Potable Water
Figure 3a: Multiple Dry-Year Supply and Demand (MWD Allocated) – Potable Water

Figures 1a, 2a, and 3a show IRWD's estimated supplies (average and single and multiple dry years) under a short-term MWD water supply allocation scenario whereby MWD declares a shortage stage under its WSAP, and a cutback is applied to IRWD's actual usage rather than its connected capacity. IRWD's evaluation of reduced MWD supplies to IRWD as shown in Figures 1a, 2a and 3a conservatively analyzes the effect of up to a MWD level 5 Regional Shortage Level. In addition, these Figures do not reflect a reduction in demands, thus representing a more conservative view of IRWD's supply capability. (see "***Recent Actions Related to Drought Conditions"*** below***)***

On April 14, 2015, MWD approved the implementation of its WSAP at a level 3 Regional Shortage Level and an effective 15% reduction in regional deliveries effective July 1, 2015, through June 30, 2016. As a result of IRWD's diversified water supplies, IRWD is reliant on MWD for only 20% of its total supplies. IRWD's evaluation of reduced MWD supplies to IRWD as shown in Figures 1a, 2a and 3a includes MWD's 2015 actions to implement a level 3 Regional Shortage Level and 15% reduction.

Under shortage scenarios, IRWD may need to supplement supplies with production of groundwater, which can exceed the applicable basin production percentage on a short-term basis, providing additional reliability during dry years or emergencies.[2]

[2] In these scenarios, it is anticipated that other water suppliers who produce water from the Orange County Basin will also experience cutbacks of imported supplies and will increase groundwater production and that Orange County Water District ("OCWD") imported replenishment water may also be cutback. The OCWD's "2021-2022 Engineer's Report on the Groundwater Conditions, Water Supply and Basin Utilization" references a report (OCWD Report on Evaluation of Orange County Groundwater Basin Storage and Operational Strategy, 2007) which recommends a basin management strategy that provides general guidelines for annual basin refill or storage decrease based on the level of accumulated overdraft. It states: "Although it is considered to be generally acceptable to allow the basin to decline to 500,000 AF overdraft for brief periods due to severe drought conditions and lack of supplemental water...an accumulated overdraft of 100,000 AF best represents an optimal basin management target. This optimal target level provides sufficient storage space to accommodate anticipated recharge from a single wet year while also providing water in storage for at least 2 or 3 consecutive years of drought." MWD replenishment water is a supplemental source of recharge water and OCWD estimates other main supply sources for recharge are available.

In addition, IRWD has developed water banking projects in Kern County, California which may be called upon for delivery of supplemental banked water to IRWD under a MWD WSAP.[3] IRWD may also convert non-potable water uses to recycled water as a way to conserve potable water. In addition, if needed, resultant net shortage levels can be addressed by demand reduction programs as described in IRWD's updated Water Shortage Contingency Plan adopted in 2021. IRWD's Water Shortage Contingency Plan provides procedures for responding to various levels of supply shortages through a combination of supply augmentation and demand management measures. As stated in IRWD's Water Shortage Contingency Plan, use of local supplies, storage and other supply augmentation measures can mitigate shortages, and are used as necessary and appropriate during declared shortage levels.

It can be noted that IRWD's above approach is conservative, in that IRWD evaluates the effect of the 16% reduction through 2045 and shows the effect of current allocation scenarios in all of the five-year increments. However, MWD reports that it has made significant progress in other water resource categories such as transfers, groundwater storage and developing other local resources, and supplies will be available from these resources over the long-term.

Climate Change. The California Department of Water Resources ("DWR") released a report "Progress on Incorporating Climate Change into Management of California's Water Resources" (July 2006), considering the impacts of climate change on the State's water supply. In 2012, DWR adopted phase 1 of its Climate Action Plan, its department-wide plan for reducing greenhouse gas emissions (GHG). In September 2018, the DWR released phase 2 of its Climate Action Plan, which is DWR's guide to addressing climate change in the programs, projects, and activities over which it has authority. Per this guidance, California's climate policy focuses on reducing GHG emissions, preparing for climate change impacts, and supporting climate-related research to inform policy responses and decision-making processes.

In MWD's 2015 IRP Update, MWD recognizes there is additional risk and uncertainty associated with climate change that may affect future supply and demands. In the 2015 IRP Update, MWD states that it plans to hedge against supply and demand uncertainties by implementing a long-term plan that recognizes the risk and provides resource development to offset the risk. Per the MWD 2020 UWMP, for longer term risks, like climate change, MWD established a Robust Decision Making ("RDM") approach that can show how vulnerable the region's reliability is to the longer-term risks such as climate change and can also establish "signposts" that can be monitored to see when crucial changes may be happening. MWD states in its 2020 UWMP that the RDM analysis was valuable in identifying vulnerabilities to its 2015 IRP approach to long-term reliability and in understanding how climate change would best be incorporated into the 2020 IRP.

Per the MWD 2020 UWMP, MWD continues to incorporate current climate change science into its planning efforts and MWD has made great efforts to implement GHG mitigation programs and policies for its facilities and operations. In 2022, MWD released a Climate Action Plan which complements MWD's IRP planning process and set reduction targets and outlined strategies to reduce emission levels by 2045. In MWD's 2020 IRP Regional Needs Assessment, MWD finds that SWP supplies are highly susceptible to varying hydrologic conditions, climate change, and regulatory restrictions. In this report, MWD assesses climate

[3] IRWD has developed water banking projects ("Water Bank") in Kern County, California and has entered into a 30-year water banking partnership with Rosedale-Rio Bravo Water Storage District to operate IRWD's Strand Ranch and Stockdale West portions of the Water Bank. The Water Bank can improve IRWD's water supply reliability by capturing lower cost water available during wet hydrologic periods for use during dry periods. The Water Bank can enhance IRWD's ability to respond to drought conditions and potential water supply interruptions.

vulnerabilities and the need for future projects such as indirect potable reuse, stormwater capture, and expanded storage capacity to mitigate and adapt to these vulnerabilities and ensure future resilience. Specific climate change impacts on regional and local water supplies and relevant information for the Orange County hydrologic basin and Santa Ana Watershed have not been sufficiently developed at this time to permit IRWD to assess and quantify the effect of any such impact on its conclusions in the Assessment.

Catastrophic Supply Interruption Planning. MWD has developed Emergency Storage Requirements (MWD 2020 UWMP) to safeguard the region from catastrophic loss of water supply. MWD has made substantial investments in emergency storage and has based its planning on a 100% reduction in its supplies for a period of six months. The emergency plan outlines that under such a catastrophe, non-firm service deliveries would be suspended, and firm supplies would be restricted by a mandatory cutback of 25 percent from normal year demand deliveries. In addition, MWD discusses DWR's investments in improvements on the SWP and the long term Delta plan in the MWD 2020 UWMP (pages 3-19 to 3-23). IRWD has also addressed supply interruption planning in its WRMP and 2020 UWMP.

Recent Actions Related to Drought Conditions. In response to historically dry conditions throughout the state of California, on April 1, 2015, Governor Brown issued an Executive Order directing the State Water Resources Control Board (SWRCB) to impose restrictions to achieve an aggregate statewide 25 percent reduction in potable water use through February 2016. The Governor's Order also included mandatory actions aimed at reducing water demands, with a particular focus on outdoor water use. On May 5, 2015, the SWRCB adopted regulations which required that IRWD achieve a 16% reduction in potable water use from its 2013 potable water use levels. On November 13, 2015, Governor Brown issued an Executive Order directing the SWRCB to extend the 2015 Emergency Regulation through October 31, 2016, if drought conditions continued. On February 2, 2016, the SWRCB adopted an extended and modified Emergency Regulation. As a result of the modification, IRWD's mandated reduction was changed from 16% to 9% effective March 1, 2016. On April 14, 2015, MWD approved actions to implement its WSAP at a level 3 Regional Shortage Level and a 15% reduction in regional deliveries effective July 1, 2015, through June 30, 2016. During this period, IRWD continued to implement actions to reduce potable water demands during the drought; however, this did not affect IRWD's long-term supply capability to meet the demands. On April 7, 2017, Governor Brown rescinded the Executive Order.

In California's most recent drought (2021-2023), in July 2021, Governor Newsom called for voluntary 15 percent reduction in potable water use from all urban suppliers. Consistent with the Governor's Executive Order, IRWD implemented Level 2 of its Water Shortage Contingency Plan, although IRWD had no projected shortages in supplies. In March 2023, Governor Newsom rescinded the Executive Order.

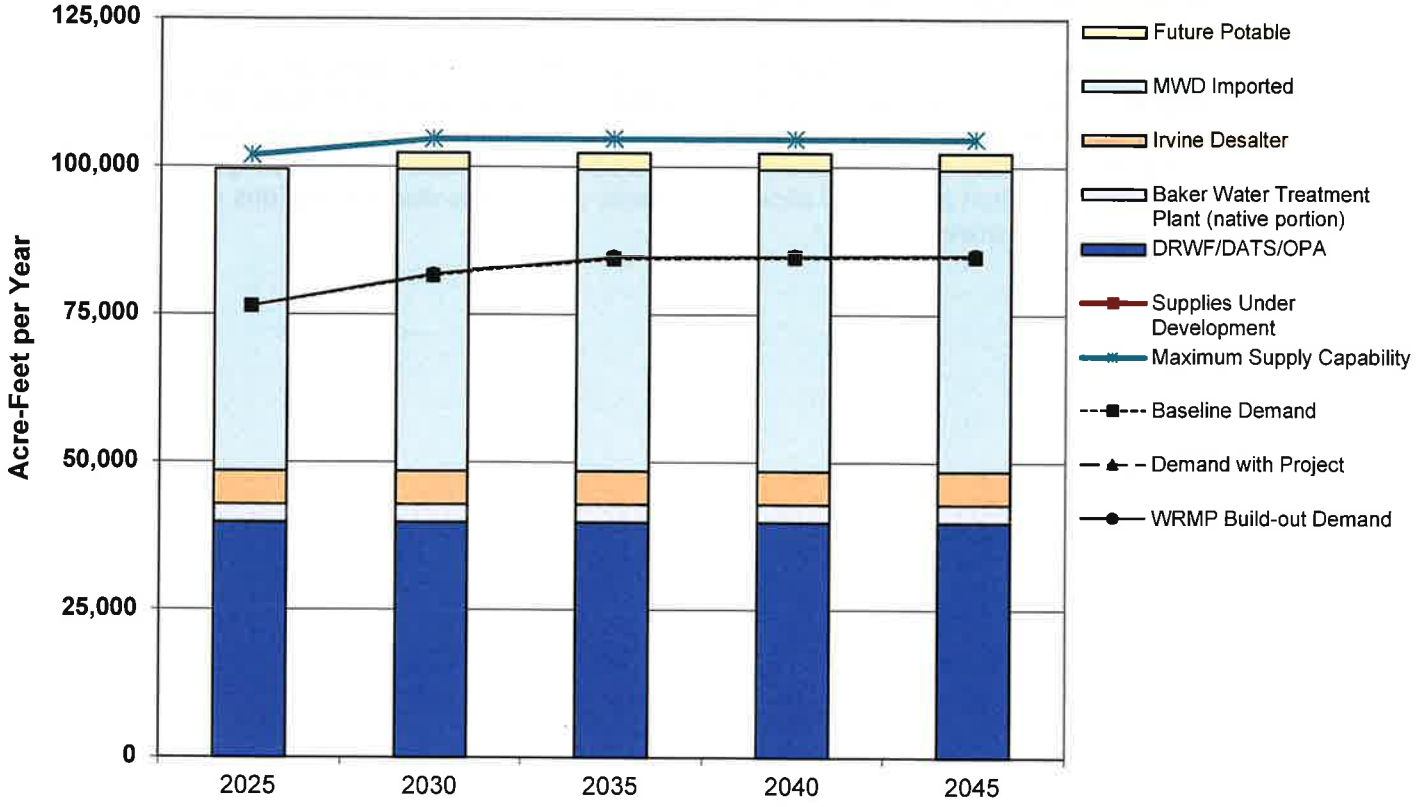
As discussed under *"IRWD's Evaluation of Effect of Reduced MWD Supplies to IRWD"* (see above), IRWD has effectively analyzed an imported water supply reduction up to a level 5 Regional Shortage Stage in Figures 1a, 2a, 3a. These Figures, however, do not reflect a reduction in demands, thus representing a more conservative view of IRWD's supply capability. In particular, the reduction in demand mandated by Senate Bill 7 in 2010, requiring urban retail water suppliers to establish water use targets to achieve a 20% reduction in daily per capita water use by 2020, has not been factored into the demands in this analysis. Similarly, notwithstanding the Governors' 2015 and 2021 orders, IRWD's conservative supply-sufficiency analysis in Figures 1a, 2a and 3a does not include the ordered reduction in potable demands.

Detailed Assessment

1. Supply and demand comparison

Comparisons of IRWD's average annual and peak (maximum day) demands and supplies, under *baseline* (existing and committed demand, without the Project), *with-project* (baseline plus Project), and *full build-out* development projections, are shown in the following Figures 1-4 (potable water), Figures 5-8 (nonpotable water) and Figures 1a, 2a, and 3a (short term MWD allocation potable water). See also the "Actions on Delta Pumping" above.

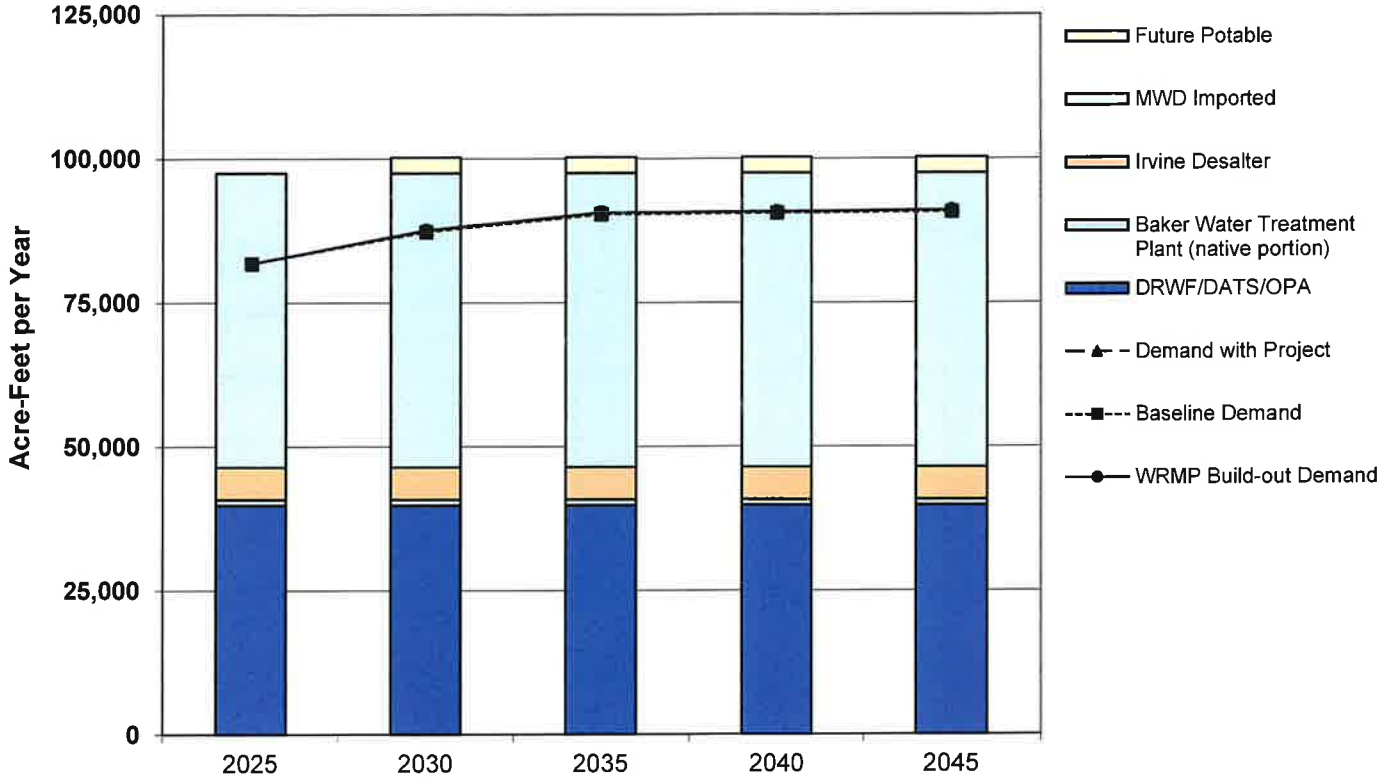
Figure 1
IRWD Normal-Year Supply & Demand - Potable Water



(in acre-feet per year)	2025	2030	2035	2040	2045
Current Potable Supplies					
MWD Imported (EOCF#2, AMP, OCF, Baker)	51,027	51,027	51,027	51,027	51,027
DRWF/DATS/OPA	39,818	39,818	39,818	39,818	39,818
Irvine Desalter	5,618	5,618	5,618	5,618	5,618
Wells 21 & 22	2,400	2,400	2,400	2,400	2,400
Baker Water Treatment Plant (native portion)	3,048	3,048	3,048	3,048	3,048
Supplies Under Development					
Future Potable	-	2,800	2,800	2,800	2,800
Maximum Supply Capability	101,911	104,711	104,711	104,711	104,711
Baseline Demand	76,459	81,603	84,434	84,645	84,857
Demand with Project	76,459	81,840	84,671	84,857	85,095
WRMP Build-out Demand	76,459	81,840	84,671	84,857	85,095
Reserve Supply with Project	25,452	22,871	20,040	19,854	19,616

Notes: By agreement, IRWD is required to count the production from the Irvine Subbasin in calculating available supplies for TIC developments.
MWD Imported Supplies are shown at 16% reduction off of average connected capacity.
Baker Water Treatment Plant is supplied untreated imported water and native water from Irvine Lake.

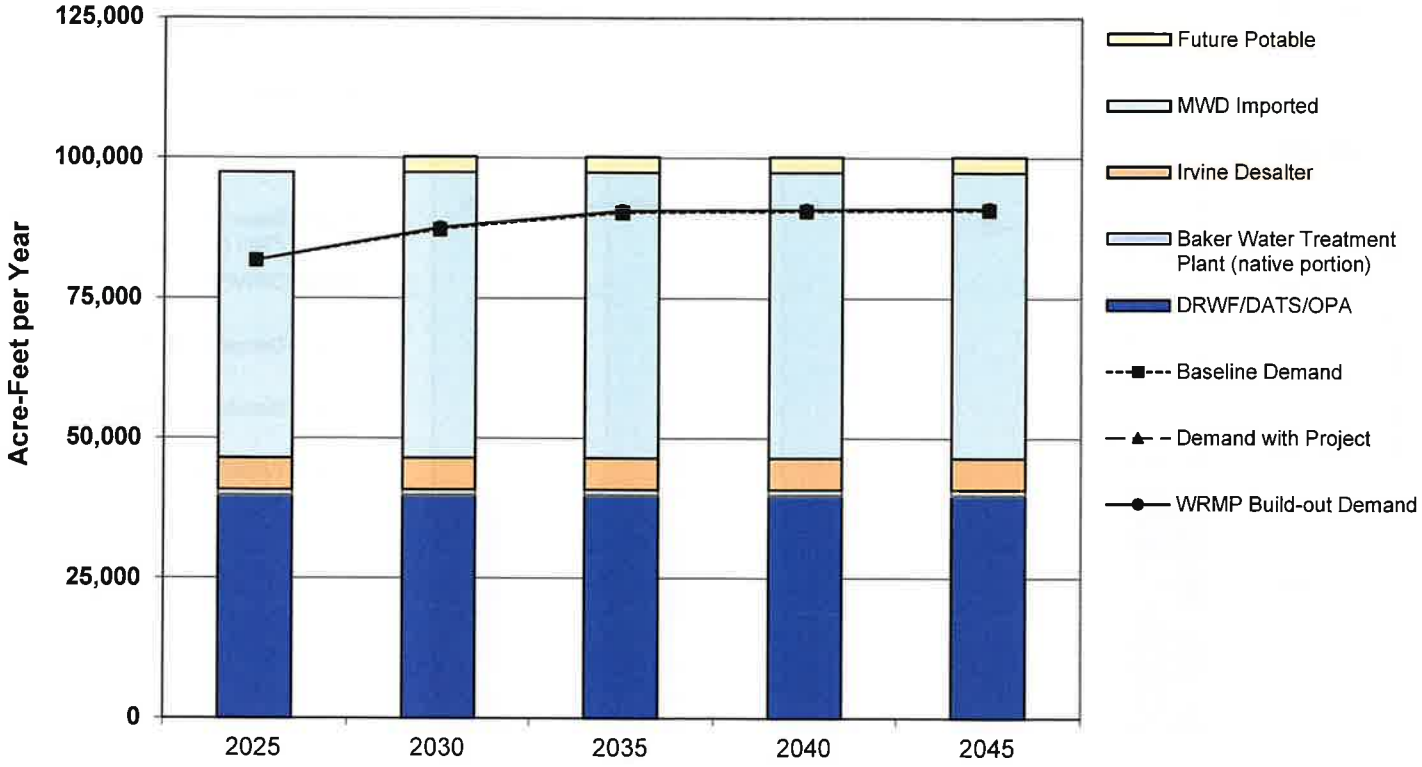
Figure 2
IRWD Single Dry-Year Supply & Demand - Potable Water



(in acre-feet per year)	2025	2030	2035	2040	2045
Current Potable Supplies					
MWD Imported (EOCF#2, AMP, OCF, Baker)	51,027	51,027	51,027	51,027	51,027
DRWF/DATS/OPA	39,818	39,818	39,818	39,818	39,818
Irvine Desalter	5,618	5,618	5,618	5,618	5,618
Wells 21 & 22	2,400	2,400	2,400	2,400	2,400
Baker Water Treatment Plant (native portion)	1,000	1,000	1,000	1,000	1,000
Supplies Under Development					
Future Potable	-	2,800	2,800	2,800	2,800
Maximum Supply Capability	99,863	102,663	102,663	102,663	102,663
Baseline Demand	81,811	87,315	90,344	90,570	90,797
Demand with Project	81,811	87,569	90,598	90,797	91,052
WRMP Build-out Demand	81,811	87,569	90,598	90,797	91,052
Reserve Supply with Project	18,052	15,094	12,065	11,866	11,611

Notes: Supplies identical to Normal-Year based on Metropolitan's Urban Water Management Plan and usage of groundwater u
drought conditions (OCWD Master Plan). Demands increased 7% from Normal-Year. By agreement, IRWD is required to count the
Notes: By agreement, IRWD is required to count the production from the Irvine Subbasin in calculating available supplies for TIC developments.
Baker Water Treatment Plant is supplied untreated imported water and native water from Irvine Lake.

Figure 3
IRWD Multiple Dry-Year Supply & Demand - Potable Water

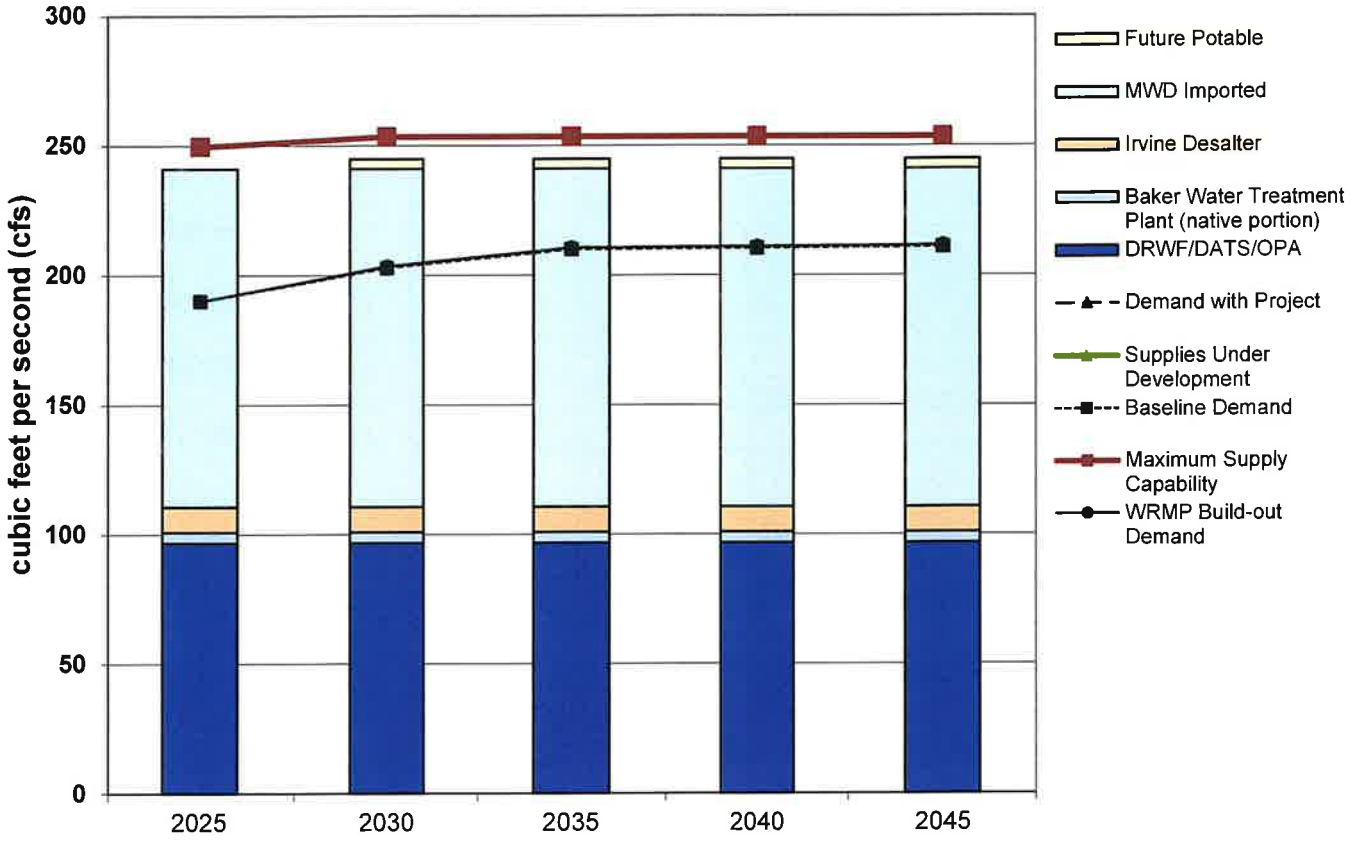


(in acre-feet per year)	2025	2030	2035	2040	2045
Current Potable Supplies					
MWD Imported (EOCF#2, AMP, OCF, Baker)	51,027	51,027	51,027	51,027	51,027
DRWF/DATS/OPA	39,818	39,818	39,818	39,818	39,818
Irvine Desalter	5,618	5,618	5,618	5,618	5,618
Wells 21 & 22	2,400	2,400	2,400	2,400	2,400
Baker Water Treatment Plant (native portion)	1,000	1,000	1,000	1,000	1,000
Supplies Under Development					
Future Potable	-	2,800	2,800	2,800	2,800
Maximum Supply Capability	99,863	102,663	102,663	102,663	102,663
Baseline Demand	81,811	87,315	90,344	90,570	90,797
Demand with Project	81,811	87,569	90,598	90,797	91,052
WRMP Build-out Demand	81,811	87,569	90,598	90,797	91,052
Reserve Supply with Project	18,052	15,094	12,065	11,866	11,611

Notes: Supplies identical to Normal-Year based on Metropolitan's Urban Water Management Plan and usage of groundwater und drought conditions (OCWD Master Plan). Demands increased 7% from Normal-Year. By agreement, IRWD is required to count the

Notes: By agreement, IRWD is required to count the production from the Irvine Subbasin in calculating available supplies for TIC developments. Baker Water Treatment Plant is supplied untreated imported water and native water from Irvine Lake.

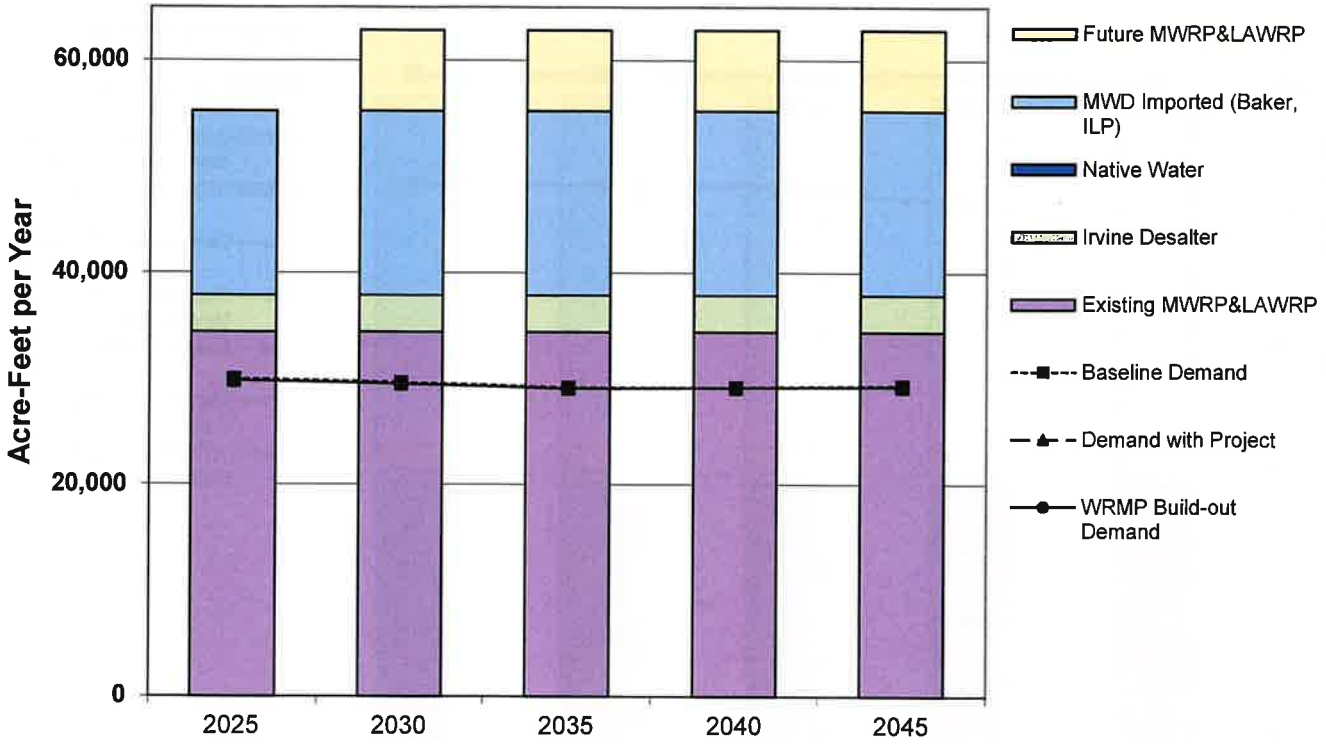
Figure 4
IRWD Maximum-Day Supply & Demand - Potable Water



(in cfs)	2025	2030	2035	2040	2045
Current Potable Supplies					
MWD Imported (EOCF#2, AMP, OCF, Baker)	130.4	130.4	130.4	130.4	130.4
DRWF/DATS/OPA	96.7	96.7	96.7	96.7	96.7
Irvine Desalter	9.7	9.7	9.7	9.7	9.7
Wells 21 & 22	8.6	8.6	8.6	8.6	8.6
Baker Water Treatment Plant (native portion)	4.2	4.2	4.2	4.2	4.2
Supplies Under Development					
Future Potable	-	3.9	3.9	3.9	3.9
Maximum Supply Capability	249.6	253.4	253.4	253.4	253.4
Baseline Demand	190.1	202.9	209.9	210.4	211.0
Demand with Project	190.1	203.5	210.5	211.0	211.6
WRMP Build-out Demand	190.1	203.5	210.5	211.0	211.6
Reserve Supply with Project	59.5	50.0	42.9	42.5	41.9

Notes: By agreement, IRWD is required to count the production from the Irvine Subbasin in calculating available supplies for TIC developments.

Figure 5
IRWD Normal-Year Supply & Demand - Nonpotable Water

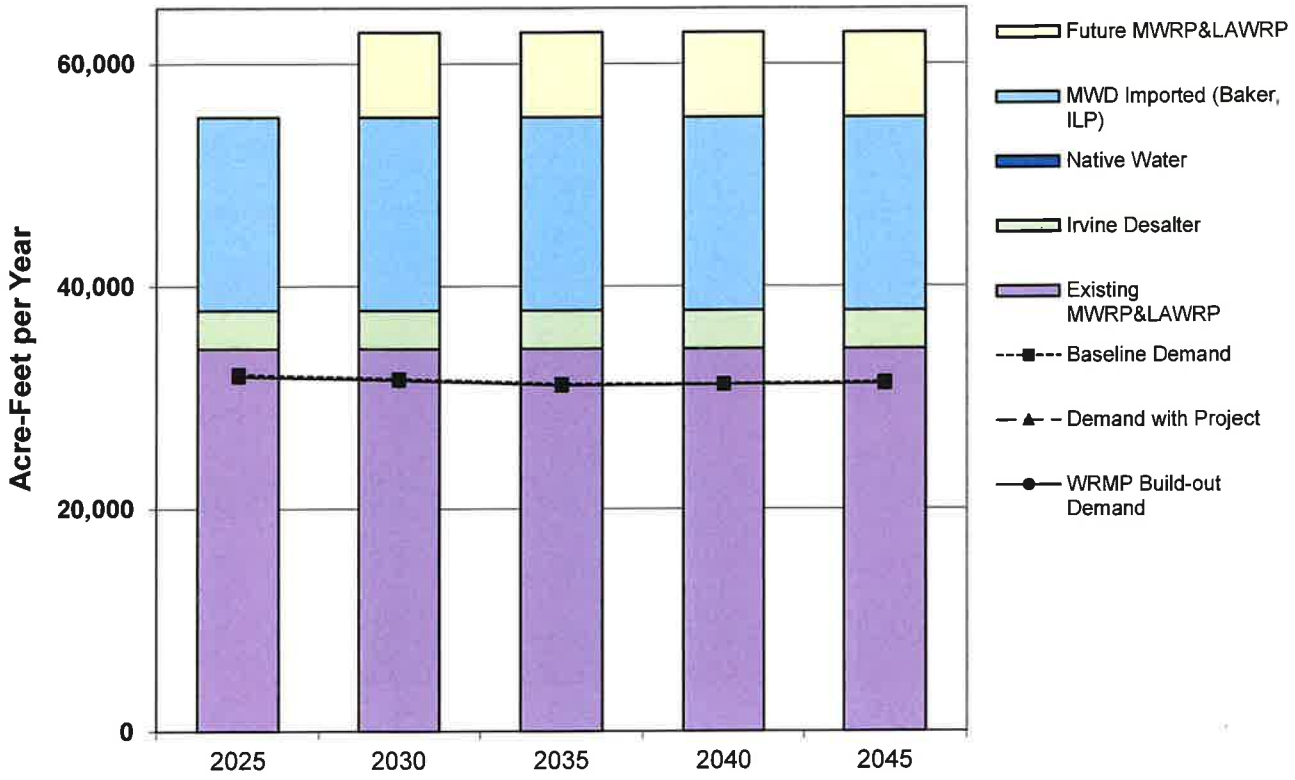


(in acre-feet per year)	2025	2030	2035	2040	2045
Current Nonpotable Supplies					
Existing MWRP&LAWRP	34,389	34,389	34,389	34,389	34,389
Future MWRP&LAWRP	-	7,623	7,623	7,623	7,623
MWD Imported (Baker, ILP)	17,347	17,347	17,347	17,347	17,347
Irvine Desalter	3,461	3,461	3,461	3,461	3,461
Native Water	-	-	-	-	-
Maximum Supply Capability	55,197	62,820	62,820	62,820	62,820
Baseline Demand	30,006	29,623	29,193	29,193	29,339
Demand with Project	29,812	29,505	29,075	29,148	29,221
WRMP Build-out Demand	29,812	29,505	29,075	29,148	29,221
Reserve Supply with Project	25,385	33,315	33,745	33,672	33,599

Note: Downward trend reflects reduction in agricultural use over time.
MWD Imported Supplies are shown at 16% reduction off of average connected capacity.

Notes: By agreement, IRWD is required to count the production from the Irvine Subbasin in calculating available supplies for TIC developments.

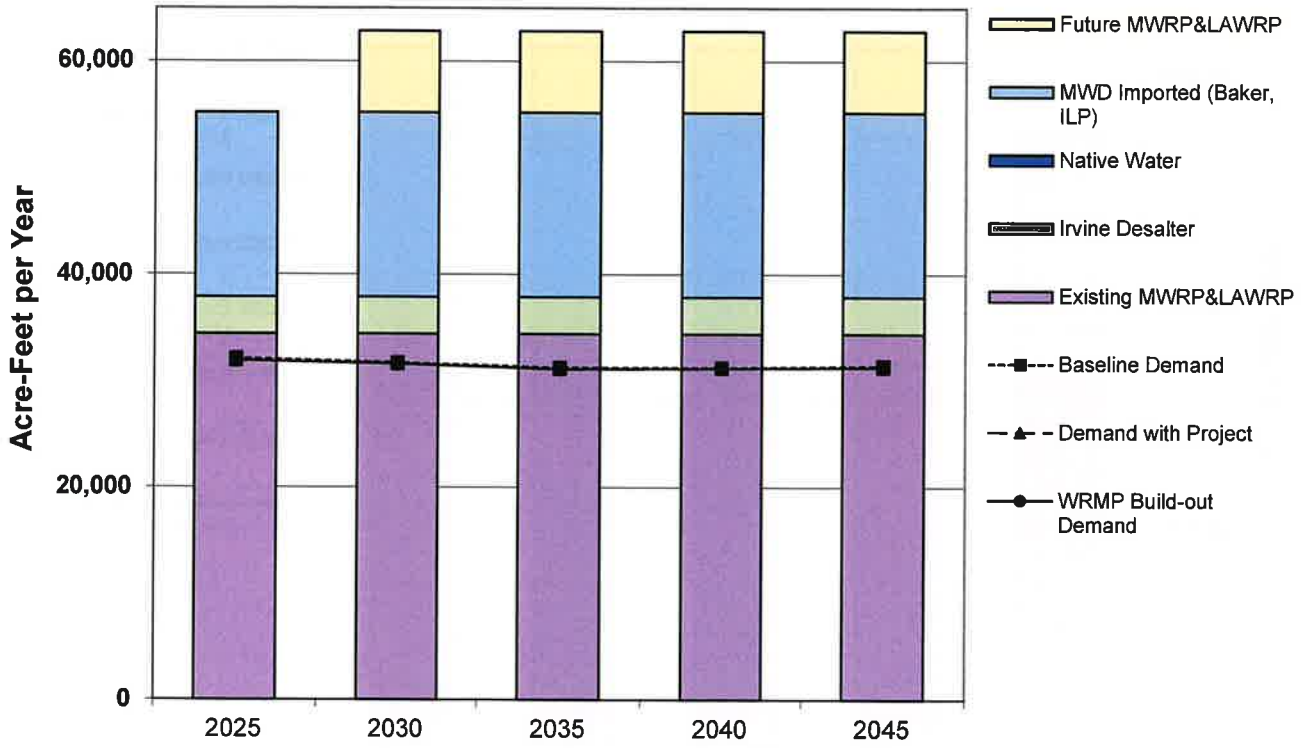
Figure 6
IRWD Single Dry-Year Supply & Demand - Nonpotable Water



(in acre-feet per year)	2025	2030	2035	2040	2045
Current Nonpotable Supplies					
Existing MWRP&LAWRP	34,389	34,389	34,389	34,389	34,389
Future MWRP&LAWRP	-	7,623	7,623	7,623	7,623
MWD Imported (Baker, ILP)	17,347	17,347	17,347	17,347	17,347
Irvine Desalter	3,461	3,461	3,461	3,461	3,461
Native Water	-	-	-	-	-
Maximum Supply Capability	55,197	62,820	62,820	62,820	62,820
Baseline Demand	32,107	31,697	31,236	31,236	31,393
Demand with Project	31,899	31,570	31,110	31,188	31,266
WRMP Build-out Demand	31,899	31,570	31,110	31,188	31,266
Reserve Supply with Project	23,298	31,250	31,710	31,632	31,554

Note: Downward trend reflects reduction in agricultural use over time.
MWD Imported Supplies are shown at 16% reduction off of average connected capacity.
Notes: By agreement, IRWD is required to count the production from the Irvine Subbasin in calculating available supplies for TIC developments.

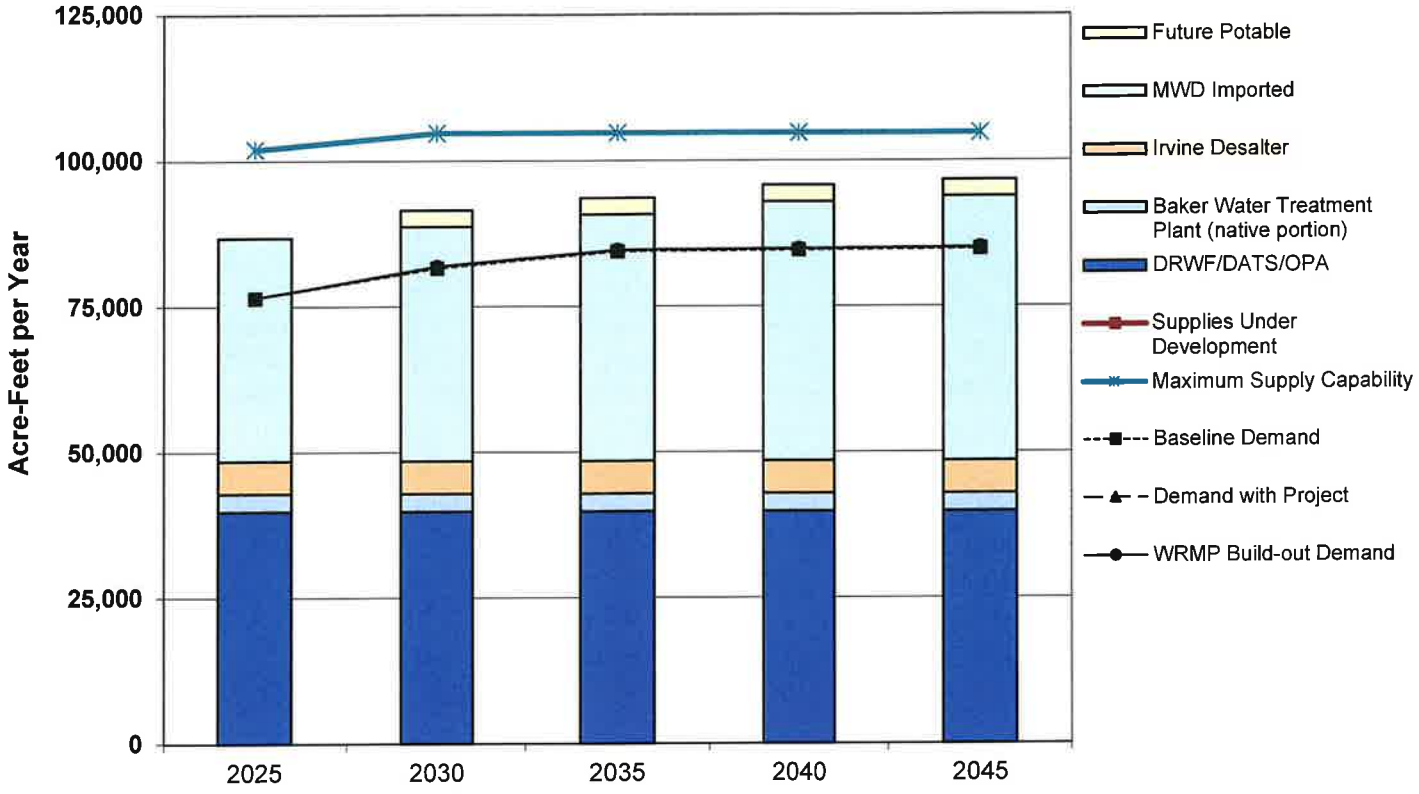
Figure 7
IRWD Multiple Dry-Year Supply & Demand - Nonpotable Water



(in acre-feet per year)	2025	2030	2035	2040	2045
Current Nonpotable Supplies					
Existing MWRP&LAWRP	34,389	34,389	34,389	34,389	34,389
Future MWRP&LAWRP	-	7,623	7,623	7,623	7,623
MWD Imported (Baker, ILP)	17,347	17,347	17,347	17,347	17,347
Irvine Desalter	3,461	3,461	3,461	3,461	3,461
Native Water	-	-	-	-	-
Maximum Supply Capability	55,197	62,820	62,820	62,820	62,820
Baseline Demand	32,107	31,697	31,236	31,236	31,393
Demand with Project	31,899	31,570	31,110	31,188	31,266
WRMP Build-out Demand	31,899	31,570	31,110	31,188	31,266
Reserve Supply with Project	23,298	31,250	31,710	31,632	31,554

Note: Downward trend reflects reduction in agricultural use over time.
MWD Imported Supplies are shown at 16% reduction off of average connected capacity.
Notes: By agreement, IRWD is required to count the production from the Irvine Subbasin in calculating available supplies for TIC developments.

Figure 1a
IRWD Normal-Year Supply & Demand - Potable Water Under Temporary MWD Allocation*

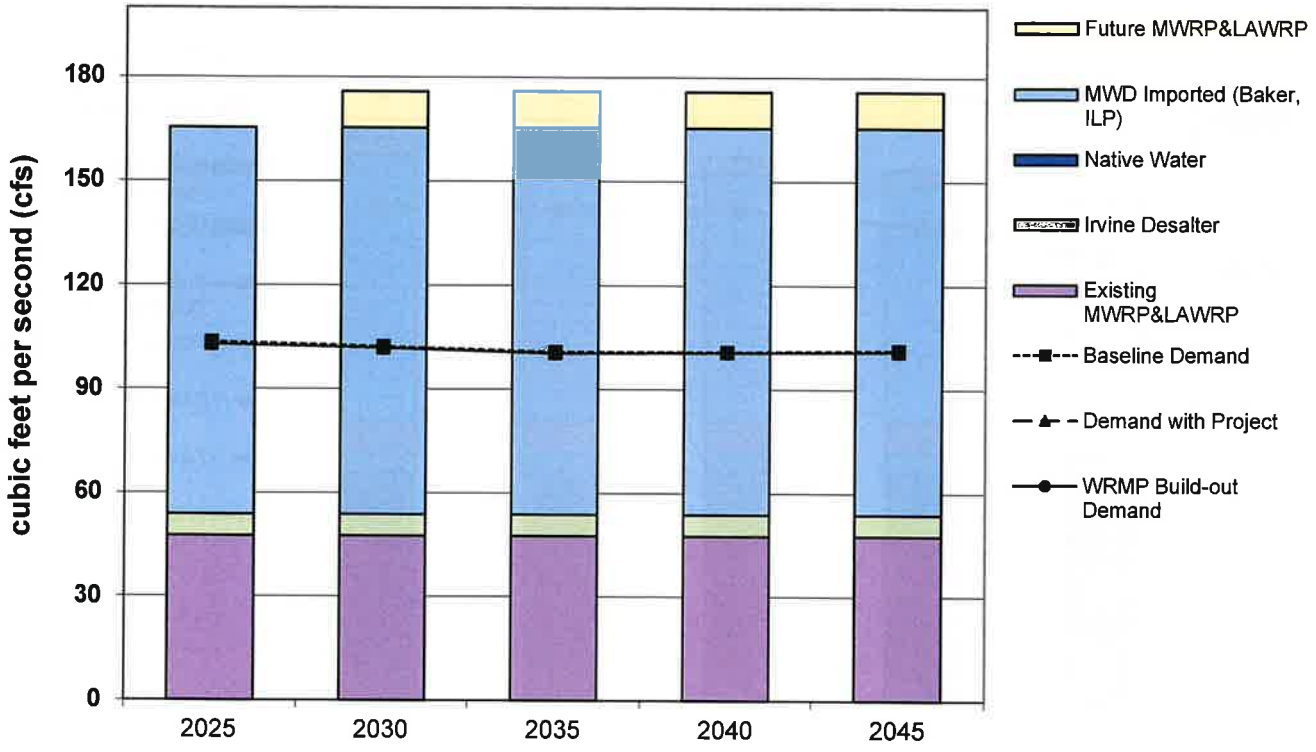


(in acre-feet per year)	2025	2030	2035	2040	2045
Current Potable Supplies					
MWD Imported (EOCF#2, AMP, OCF, Baker)	38,270	40,222	42,274	44,430	45,323
DRWF/DATS/OPA	39,818	39,818	39,818	39,818	39,818
Irvine Desalter	5,618	5,618	5,618	5,618	5,618
Wells 21 & 22	2,400	2,400	2,400	2,400	2,400
Baker Water Treatment Plant (native portion)	3,048	3,048	3,048	3,048	3,048
Supplies Under Development					
Future Potable	-	2,800	2,800	2,800	2,800
Maximum Supply Capability	89,154	93,906	95,958	98,114	99,007
Baseline Demand	76,459	81,603	84,434	84,645	84,857
Demand with Project	76,459	81,840	84,671	84,857	85,095
WRMP Build-out Demand	76,459	81,840	84,671	84,857	85,095
Reserve Supply with Project	12,695	12,067	11,287	13,258	13,912

*For illustration purposes, IRWD has shown MWD Imported Supplies as estimated under a MWD short-term allocation up to a leve in all of the 5-year increments. This does not reflect a reduction in demands, thus representing a conservative view of supply capability.

Notes: By agreement, IRWD is required to count the production from the Irvine Subbasin in calculating available supplies for TIC developments.

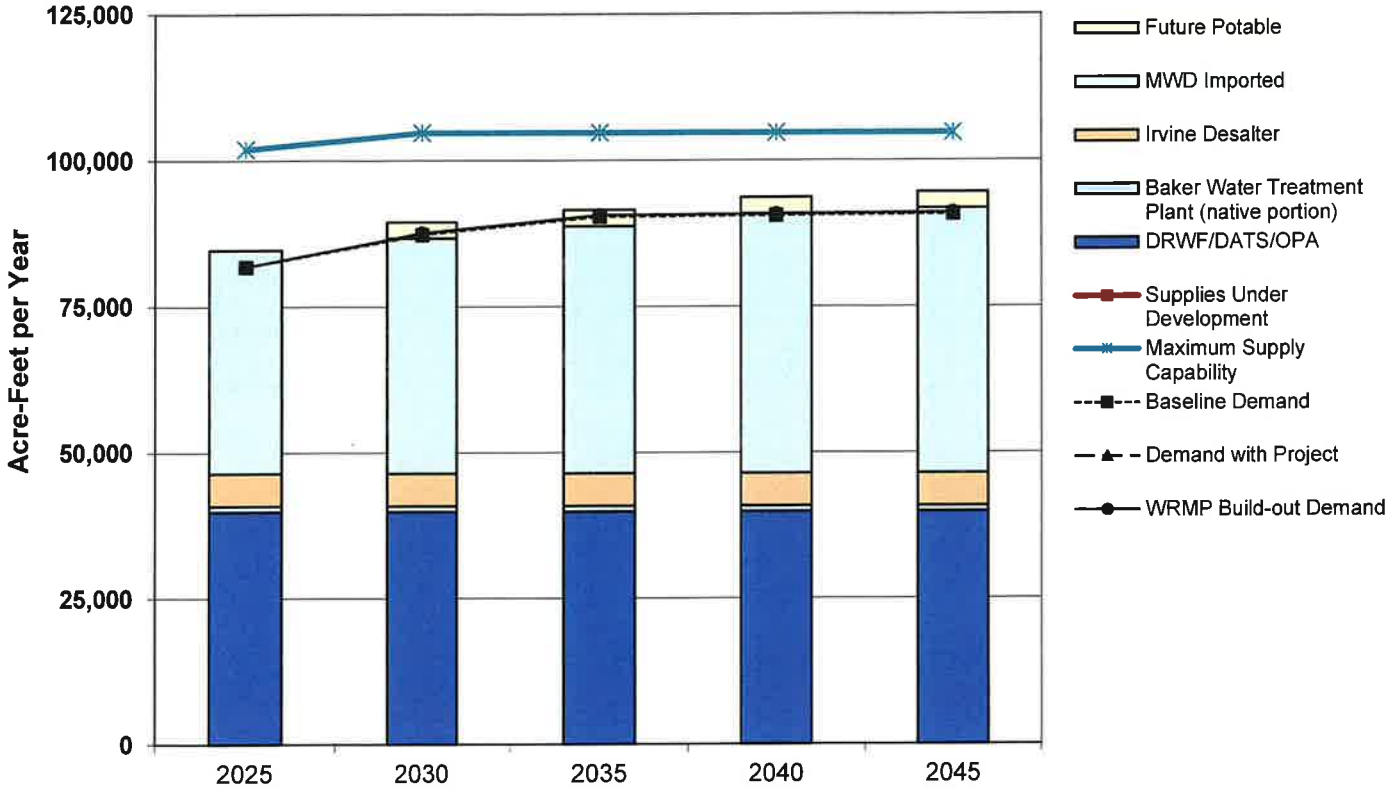
Figure 8
IRWD Maximum-Dry Supply & Demand - Nonpotable Water



(in cfs)	2025	2030	2035	2040	2045
Current Nonpotable Supplies					
Existing MWRP&LAWRP	47.6	47.6	47.6	47.6	47.6
Future MWRP&LAWRP	-	10.5	10.5	10.5	10.5
MWD Imported (Baker, ILP)	111.5	111.5	111.5	111.5	111.5
Irvine Desalter	6.2	6.2	6.2	6.2	6.2
Native Water	-	-	-	-	-
Maximum Supply Capability	165.3	175.8	175.8	175.8	175.8
Baseline Demand	103.6	102.3	100.8	100.8	101.3
Demand with Project	102.9	101.9	100.4	100.6	100.9
WRMP Build-out Demand	102.9	101.9	100.4	100.6	100.9
Reserve Supply with Project	62.4	73.9	75.4	75.2	74.9

Note: Downward trend reflects reduction in agricultural use over time.

Figure 2a
IRWD Single Dry-Year Supply & Demand - Potable Water Under Temporary MWD Allocation*

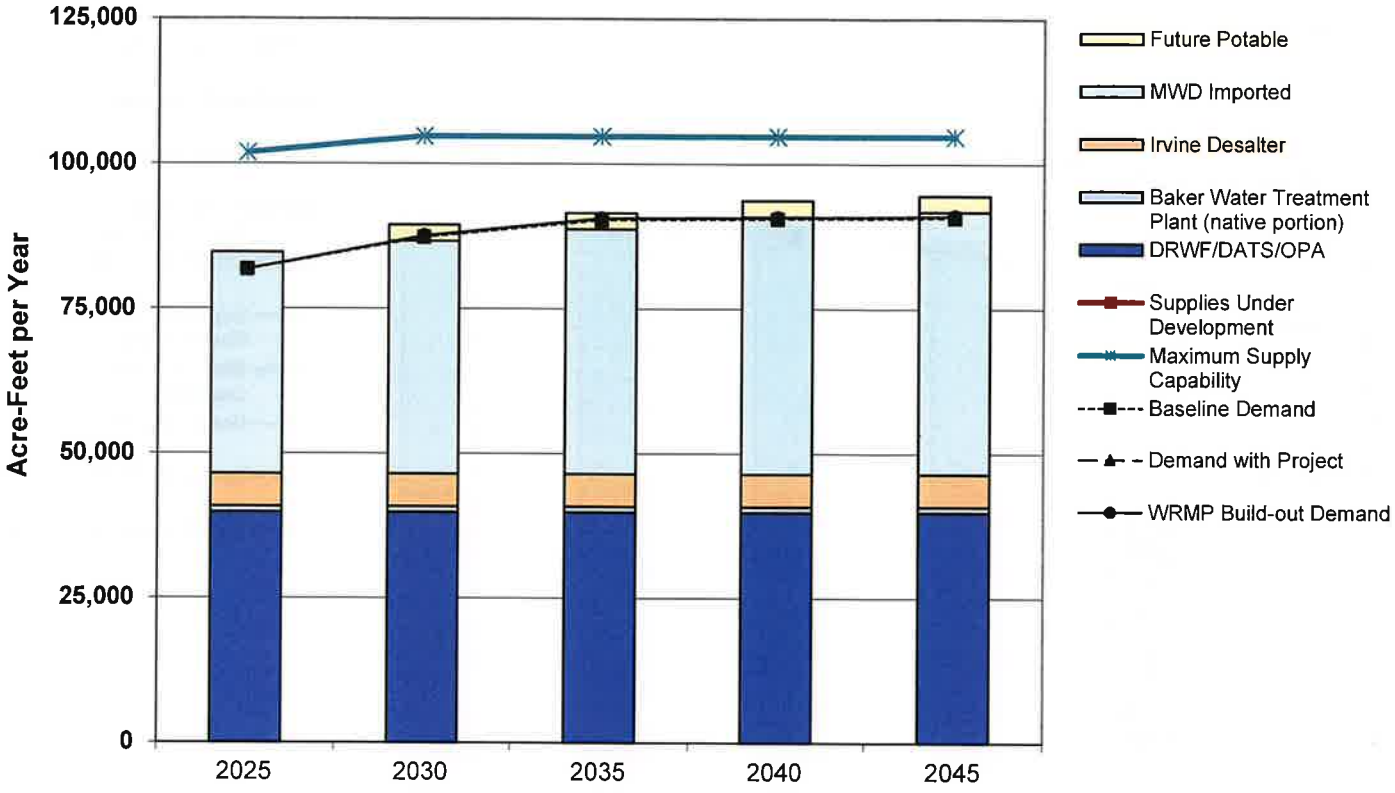


(in acre-feet per year)	2025	2030	2035	2040	2045
Current Potable Supplies					
MWD Imported (EOCF#2, AMP, OCF, Baker)	38,270	40,222	42,274	44,430	45,323
DRWF/DATS/OPA	39,818	39,818	39,818	39,818	39,818
Irvine Desalter	5,618	5,618	5,618	5,618	5,618
Wells 21 & 22	2,400	2,400	2,400	2,400	2,400
Baker Water Treatment Plant (native portion)	1,000	1,000	1,000	1,000	1,000
Supplies Under Development					
Future Potable	-	2,800	2,800	2,800	2,800
Maximum Supply Capability	87,106	91,858	93,910	96,066	96,959
Baseline Demand	81,811	87,315	90,344	90,570	90,797
Demand with Project	81,811	87,569	90,598	90,797	91,052
WRMP Build-out Demand	81,811	87,569	90,598	90,797	91,053
Reserve Supply with Project	5,295	4,290	3,312	5,270	5,908

*For illustration purposes, IRWD has shown MWD Imported Supplies as estimated under a MWD short-term allocation up to a level 5

Notes: By agreement, IRWD is required to count the production from the Irvine Subbasin in calculating available supplies for TIC developments. measures as described in the 2020 UWMP. Under a MWD Allocation, the Baker WTP would be limited to available MWD and native water.

Figure 3a
IRWD Multiple Dry-Year Supply & Demand - Potable Water Under Temporary MWD Allocation*



(in acre-feet per year)	2025	2030	2035	2040	2045
Current Potable Supplies					
MWD Imported (EOCF#2, AMP, OCF, Baker)	38,270	40,222	42,274	44,430	45,323
DRWF/DATS/OPA	39,818	39,818	39,818	39,818	39,818
Irvine Desalter	5,618	5,618	5,618	5,618	5,618
Wells 21 & 22	2,400	2,400	2,400	2,400	2,400
Baker Water Treatment Plant (native portion)	1,000	1,000	1,000	1,000	1,000
Supplies Under Development					
Future Potable	-	2,800	2,800	2,800	2,800
Maximum Supply Capability	87,106	91,858	93,910	96,066	96,959
Baseline Demand	81,811	87,315	90,344	90,570	90,797
Demand with Project	81,811	87,569	90,598	90,797	91,052
WRMP Build-out Demand	81,811	87,569	90,598	90,797	91,052
Reserve Supply with Project	5,295	4,290	3,312	5,270	5,908

*For illustration purposes, IRWD has shown MWD Imported Supplies as estimated under a MWD short-term allocation up to a level 5

Notes: By agreement, IRWD is required to count the production from the Irvine Subbasin in calculating available supplies for TIC developments. measures as described in the 2020 UWMP. Under a MWD Allocation, the Baker WTP would be limited to available MWD and native water.

2. Information concerning supplies

(a)(1) Existing sources of identified water supply for the proposed project:
IRWD does not allocate particular supplies to any project, but identifies total supplies for its service area, as shown in the following table:

	Max Day (cfs)	Avg. Annual (AFY)		Annual by Category (AFY)
Current Supplies				
Potable - Imported 10				
East Orange County Feeder No. 2	41.4	18,746	1	
Allen-McColloch Pipeline*	64.7	29,296	1	
Orange County Feeder	18.0	8,150	1	
	124.1	56,192		56,192
Potable - Treated Surface				
Baker Treatment Plant (Imported) 10	6.3	4,554	6	4,554
Baker Treatment Plant (Native)	4.2	3,048	6	3,048
Potable - Groundwater				
Dyer Road Wellfield	80.0	28,000	2	
OPA Well	4.4	3,200	11	
Deep Aquifer Treatment System-DATS	12.3	8,618	2	
Wells 21 & 22	8.6	2,400	2	
Irvine Desalter	9.7	5,618	3	49,479
Total Potable Current Supplies	249.6			113,273
Nonpotable - Recycled Water				
MWRP (25.2 mgd)	39.1	28,228	4	
LAWRP (5.5 mgd)	8.5	6,161	4	
Future MWRP & LAWRP	10.6	7,623	5	42,012
Nonpotable - Imported 10				
Baker Aqueduct	40.2	11,651	6	
Irvine Lake Pipeline	65.0	9,000	7	
	105.2	20,651		20,651
Nonpotable - Groundwater				
Irvine Desalter-Nonpotable	6.2	3,461	8	3,461
Nonpotable Native				
Irvine Lake (see Baker Treatment Plant above)	4.2	3,048	6,9	
Total Nonpotable Current Supplies (Excludes Native)	169.6			66,124
Total Combined Current Supplies	419.2			179,397
Supplies Under Development				
Potable Supplies				
Future Groundwater Production Facilities	3.9	2,800		2,800
Total Under Development	3.9	2,800		2,800
Total Supplies				
Potable Supplies	253.4			116,073
Nonpotable Supplies	169.6			66,124
Total Supplies (Current and Under Development)	423.0			182,197

1 Based on converting maximum day capacity to average by dividing the capacity by a peaking factor of 1.6. Max Day is equivalent to Treatment Plant Productior
2 Contract amount - See Assessment Potable Supply-Groundwater(iii). Due to groundwater limitations, value changed from 6,329 AF to 2,400 AF
3 Contract amount - See Assessment Potable Supply-Groundwater (iv) and (v). Maximum day well capacity is compatible with contract amount.
4 MWRP 28.0 mgd treatment capacity (28,228 AFY RW production) with 90% plant efficiency (25.2 mgd) and LAWRP permitted 5.5 mgd tertiary treatment capacity (6,161 AFY)
5 Future estimated MWRP & LAWRP recycled water production. Includes biosolids and expansion to 33 mgd
6 Since 2017, Baker Water Treatment Plant (WTP) treats imported and native water. Baker Aqueduct capacity has been allocated to Baker WTP participants an IRWD owns 46.50 cfs in Baker Aqueduct, of which, 10.5 cfs is for for potable treatment. IRWD has 36 cfs remaining capacity for non-potable uses. The nonpotabl average use is based on converting maximum day capacity to average by dividing the capacity by a peaking factor of 2.5 (see Assessment Footnote 8, page 27). 2023, IRWD executed an Agreement that sells 3 cfs to South County agencies, leaving 7.5 cfs for daily use for IRWD. However, should an emergency arise, IRWI retains the right to use the 3 cfs sold. The amount shown in the table remains 10.5 cfs
7 Based on IRWD's proportion of Irvine Lake imported water storage; Actual ILP capacity would allow the use of additional imported water from MWD through the Santiago Lateral.
8 Contract amount - See Assessment Nonpotable Supply-Groundwater (i) and (ii). Maximum day well capacity (cfs) is compatible with contract amount.
9 Based on 70+ years historical average of Santiago Creek Inflow into Irvine Lake. Since 2020, native water is treated through Baker WTP.
10 Supplies in this table are total and are not adjusted to account for any reductions in imported water.
11 Per Agreement with the City of Orange, average annual capacity increased to 3,200 acre-feet
*64.7 cfs is current assigned capacity; based on increased peak flow, IRWD can purchase 10 cfs more (see page 25 (b)(1)(iii))

(b) Required information concerning currently available and under-development water supply entitlements, water rights and water service contracts:

(1) Written contracts or other proof of entitlement.[4] [5]

•POTABLE SUPPLY - IMPORTED[6]

Potable imported water service connections (currently available).

(i) Potable imported water is delivered to IRWD at various service connections to the imported water delivery system of The Metropolitan Water District of Southern California ("MWD"): service connections CM-01A and OC-7 (Orange County Feeder); CM-10, CM-12, OC-38, OC-39, OC-57, OC-58, OC-63 (East Orange County Feeder No. 2); and OC-68, OC-71, OC-72, OC-73/73A, OC-74, OC-75, OC-83, OC-84, OC-87 (Allen-McColloch Pipeline). IRWD's entitlements regarding service from the MWD delivery system facilities are described in the following paragraphs and summarized in the above Table ((2)(a)(1)). IRWD receives imported water service through Municipal Water District of Orange County ("MWDOC"), a member agency of MWD.

Allen-McColloch Pipeline ("AMP") (currently available).

(ii) Agreement For Sale and Purchase of Allen-McColloch Pipeline, dated as of July 1, 1994 (Metropolitan Water District Agreement No. 4623) ("AMP Sale Agreement"). Under the AMP Sale Agreement, MWD purchased the Allen-McColloch Pipeline (formerly known as the "Diemer Intertie") from MWDOC, the MWDOC Water Facilities Corporation and certain agencies, including IRWD and Los Alisos Water District ("LAWD"),[7] identified as "Participants" therein. Section 5.02 of the AMP Sale Agreement obligates MWD to meet IRWD's and the other Participants' requests for deliveries and specified minimum hydraulic grade lines at each connection serving a Participant, subject to availability of water. MWD agrees to operate the AMP as any other MWD pipeline. MWD has the right to

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[4] In some instances, the contractual and other legal entitlements referred to in the following descriptions are stated in terms of flow capacities, in cubic feet per second (cfs). In such instances, the cfs flows are converted to volumes of AFY for purposes of analyzing supply sufficiency in this assessment, by dividing the capacity by a peaking factor of 1.8 (potable) or 2.5 (nonpotable), consistent with maximum day peaking factors used in the WRMP. The resulting reduction in assumed available annual AFY volumes through the application of these factors recognizes that connected capacity is provided to meet peak demands and that seasonal variation in demand and limitations in local storage prevent these capacities from being utilized at peak capacity on a year-round basis. However, the application of these factors produces a conservatively low estimate of annual AFY volumes from these connections; additional volumes of water are expected to be available from these sources.

[5] In the following discussion, contractual and other legal entitlements are characterized as either potable or nonpotable, according to the characterization of the source of supply. Some of the nonpotable supplies surplus to nonpotable demand could potentially be rendered potable by the addition of treatment facilities; however, except where otherwise noted, IRWD has no current plans to do so.

[6] See Imported Supply - Additional Information, below, concerning the availability of the MWD supply.

[7] IRWD has succeeded to LAWD's interests in the AMP and other LAWD water supply facilities and rights mentioned in this assessment, by virtue of the consolidation of IRWD and LAWD on December 31, 2000.

operate the AMP on a "utility basis," meaning that MWD need not observe capacity allocations of the Participants but may use available capacity to meet demand at any service connection.

The AMP Sale Agreement obligates MWD to monitor and project AMP demands and to construct specified pump facilities or make other provision for augmenting MWD's capacity along the AMP, at MWD's expense, should that be necessary to meet demands of all of the Participants (Section 5.08).

(iii) Agreement For Allocation of Proceeds of Sale of Allen-McColloch Pipeline, dated as of July 1, 1994 ("AMP Allocation Agreement"). This agreement, entered into concurrently with the AMP Sale Agreement, provided each Participant, including IRWD, with a capacity allocation in the AMP, for the purpose of allocating the sale proceeds among the Participants in accordance with their prior contractual capacities adjusted to conform to their respective future demands. IRWD's capacity under the AMP Allocation Agreement (including its capacity as legal successor agency to LAWD) is 64.69 cfs at IRWD's first four AMP connections, 49.69 cfs at IRWD's next five downstream AMP connections and 35.01 and 10.00 cfs, respectively at IRWD's remaining two downstream connections. The AMP Allocation Agreement further provides that if a Participant's peak flow exceeds its capacity, the Participant shall "purchase" additional capacity from the other Participants who are using less than their capacity, until such time as MWD augments the capacity of the AMP. The foregoing notwithstanding, as mentioned in the preceding paragraph, the allocated capacities do not alter MWD's obligation under the AMP Sale Agreement to meet all Participants' demands along the AMP, and to augment the capacity of the AMP if necessary. Accordingly, under these agreements, IRWD can legally increase its use of the AMP beyond the above-stated capacities but would be required to reimburse other Participants from a portion of the proceeds IRWD received from the sale of the AMP.

(iv) Improvement Subleases (or "FAP" Subleases) [MWDOC and LAWD; MWDOC and IRWD], dated August 1, 1989; 1996 Amended and Restated Allen-McColloch Pipeline Subleases [MWDOC and LAWD; MWDOC and IRWD], dated March 1, 1996. IRWD subleases its AMP capacity, including the capacity it acquired as successor to LAWD. To facilitate bond financing for the construction of the AMP, it was provided that the MWDOC Water Facilities Corporation, and subsequently MWDOC, would have ownership of the pipeline, and the Participants would be sublessees. As is the case with the AMP Sale Agreement, the subleases similarly provide that water is subject to availability.

East Orange County Feeder No. 2 ("EOCF#2") (currently available).

(v) Agreement For Joint Exercise of Powers For Construction, Operation and Maintenance of East Orange County Feeder No. 2, dated July 11, 1961, as amended on July 25, 1962, and April 26, 1965; Agreement Re Capacity Rights In Proposed Water Line, dated September 11, 1961 ("IRWD MWDOC Assignment Agreement"); Agreement Regarding Capacity Rights In the East Orange County Feeder No. 2, dated August 28, 2000 ("IRWD Coastal Assignment Agreement"). East Orange County Feeder No. 2 ("EOCF#2"), a feeder linking Orange County with MWD's feeder system, was constructed pursuant to a joint powers

agreement among MWDOC (then called Orange County Municipal Water District), MWD, Coastal Municipal Water District ("Coastal"), Anaheim and Santa Ana. A portion of IRWD's territory is within MWDOC and the remainder is within the former Coastal (which was consolidated with MWDOC in 2001). Under the IRWD MWDOC Assignment Agreement, MWDOC assigned 41 cfs of capacity to IRWD in the reaches of EOCF#2 upstream of the point known as Coastal Junction (reaches 1 through 3), and 27 cfs in reach 4, downstream of Coastal Junction. Similarly, under the IRWD Coastal Assignment Agreement, prior to Coastal's consolidation with MWDOC, Coastal assigned to IRWD 0.4 cfs of capacity in reaches 1 through 3 and 0.6 cfs in reach 4 of EOCF#2. Delivery of water through EOCF#2 is subject to the rules and regulations of MWD and MWDOC and is further subject to application and agreement of IRWD respecting turnouts.

Orange County Feeder (currently available)

(vi) Agreement, dated March 13, 1956. This 1956 Agreement between MWDOC's predecessor district and the Santa Ana Heights Water Company ("SAHWC") provides for delivery of MWD imported supply to the former SAHWC service area. SAHWC's interests were acquired on behalf of IRWD through a stock purchase and IRWD annexation of the SAHWC service area in 1997. The supply is delivered through a connection to MWD's Orange County Feeder designated as OC-7.

(vii) Agreement For Transfer of Interest In Pacific Coast Highway Water Transmission and Storage Facilities From The Irvine Company To the Irvine Ranch Water District, dated April 23, 1984; Joint Powers Agreement For the Construction, Operation and Maintenance of Sections 1a, 1b and 2 of the Coast Supply Line, dated June 9, 1989; Agreement, dated January 13, 1955 ("1955 Agreement"). The jointly constructed facility known as the Coast Supply Line ("CSL"), extending southward from a connection with MWD's Orange County Feeder at Fernleaf Street in Newport Beach, was originally constructed pursuant to a 1952 agreement among Laguna Beach County Water District ("LBCWD"), The Irvine Company (TIC) and South Coast County Water District. Portions were later reconstructed. Under the above-referenced transfer agreement in 1984, IRWD succeeded to TIC's interests in the CSL. The CSL is presently operated under the above-referenced 1989 joint powers agreement, which reflects IRWD's ownership of 10 cfs of capacity. The 1989 agreement obligates LBCWD, as the managing agent and trustee for the CSL, to purchase water and deliver it into the CSL for IRWD. LBCWD purchases such supply, delivered by MWD to the Fernleaf connection, pursuant to the 1955 Agreement with Coastal (now MWDOC).

Baker Water Treatment Plant (currently available)

IRWD recently constructed the Baker Water Treatment Plant (Baker WTP) in partnership with El Toro Water District, Moulton-Niguel Water District, Santa Margarita Water District and Trabuco Canyon Water District. The Baker WTP is supplied with untreated imported water from MWD and native Irvine Lake water

supply. IRWD owns 10.5 cfs of treatment capacity rights in the Baker WTP.[8]

•POTABLE SUPPLY - GROUNDWATER

(i) Orange County Water District Act ("OCWD"), Water Code App., Ch. 40 ("Act"). IRWD is an operator of groundwater-producing facilities in the Orange County Groundwater Basin (the "Basin"). Although the rights of the producers within the Basin vis a vis one another have not been adjudicated, they nevertheless exist and have not been abrogated by the Act (§40-77). The rights consist of municipal appropriators' rights and may include overlying and riparian rights. The Basin is managed by OCWD under the Act, which functions as a statutorily-imposed physical solution. The Act empowers OCWD to impose replenishment assessments and basin equity assessments on production and to require registration of water-producing facilities and the filing of certain reports; however, OCWD is expressly prohibited from limiting extraction unless a producer agrees to such limitation (§ 40-2(6) (c)) and from impairing vested rights to the use of water (§ 40-77). Thus, producers may install and operate production facilities under the Act; OCWD approval is not required. OCWD is required to annually investigate the condition of the Basin, assess overdraft and accumulated overdraft, and determine the amount of water necessary for replenishment (§40-26). OCWD has studied the Basin replenishment needs and potential projects to address growth in demand through 2035 in its Final Draft Long-Term Facilities Plan (January 2006), last updated November 19, 2014. The Long-Term Facilities Plan is updated approximately every five years.

(ii) Irvine Ranch Water District v. Orange County Water District, Orange County Superior Court Case No. 795827. A portion of IRWD is outside the jurisdictional boundary of OCWD. IRWD is eligible to annex the Santa Ana River Watershed portion of this territory to OCWD, under OCWD's current annexation policy (OCWD Resolution No. 86-2-15, adopted on February 19, 1986, and reaffirmed on June 2, 1999). This September 29, 1998, Superior Court ruling indicates that IRWD is entitled to deliver groundwater from the Basin to the IRWD service area irrespective of whether such area is also within OCWD.

Dyer Road Wellfield ("DWRF") / Deep Aquifer Treatment System ("DATS") (currently available)

(iii) Agreement For Water Production and Transmission Facilities, dated March 18, 1981, as amended May 2, 1984, September 19, 1990, and November 3, 1999 (the "DRWF Agreement"). The DRWF Agreement, among IRWD, OCWD and Santa Ana, concerns the development of IRWD's Dyer Road Wellfield (DRWF), within the Basin. The DRWF consists of 16 wells pumping from the non-colored water zone of the Basin and 2 wells (with colored-water treatment facilities) pumping from the deep, colored-water zone of the Basin (the colored-water portion of the DRWF is sometimes referred to as the Deep Aquifer

[8] The Baker WTP is supplied nonpotable imported water through the existing Baker Pipeline. IRWD's existing Baker Pipeline capacity (see Section 2(b)(1) NONPOTABLE SUPPLY – IMPORTED) has been apportioned to the Baker WTP participants based on Baker WTP capacity ownership, and IRWD retains 10.5 cfs of pipeline capacity through the Baker WTP for potable supply and retains 36 cfs in Reach 1U of the Baker Pipeline capacity for nonpotable supply. In 2023, IRWD executed an agreement that sells 3 cfs to South County agencies, leaving 7.5 cfs for daily use for IRWD. However, should an emergency arise, IRWD retains the right to the use of the 3 cfs sold.

Treatment System or DATS.) Under the DRWF Agreement, an "equivalent" basin production percentage ("BPP") has been established for the DRWF, currently 28,000 AFY of non-colored water and 8,000 AFY of colored water, provided any amount of the latter 8,000 AFY not produced results in a matching reduction of the 28,000 AFY BPP. Although typically IRWD production from the DRWF does not materially exceed the equivalent BPP, the equivalent BPP is not an extraction limitation; it results in imposition of monetary assessments on the excess production. The DRWF Agreement also establishes monthly pumping amounts for the DRWF. With the addition of the Concentrated Treatment System ("CATS"), IRWD has increased the yield of DATS.

Irvine Subbasin / Irvine Desalter (currently available)

(iv) First Amended and Restated Agreement, dated March 11, 2002, as amended June 15, 2006, restating May 5, 1988 agreement ("Irvine Subbasin Agreement"). TIC has historically pumped agricultural water from the Irvine Subbasin. (As in the rest of the Basin of which this subbasin is a part, the groundwater rights have not been adjudicated and OCWD provides governance and management under the Act.) The 1988 agreement between IRWD and TIC provided for the joint use and management of the Irvine Subbasin. The 1988 agreement further provided that the 13,000 AFY annual yield of the Irvine Subbasin ("Subbasin") would be allocated 1,000 AFY to IRWD and 12,000 AFY to TIC. Under the restated Irvine Subbasin Agreement, the foregoing allocations were superseded as a result of TIC's commencement of the building its Northern Sphere Area project, with the effect that the Subbasin production capability, wells and other facilities, and associated rights have been transferred from TIC to IRWD, and IRWD has assumed the production from the Subbasin. In consideration of the transfer, IRWD is required to count the supplies attributable to the transferred Subbasin production in calculating available supplies for the Northern Sphere Area project and other TIC development and has agreed that they will not be counted toward non-TIC development.

A portion of the existing Subbasin water production facilities produce water which is of potable quality. IRWD could treat some of the water produced from the Subbasin for potable use, by means of the Desalter and other projects. Although, as noted above, the Subbasin has not been adjudicated and is managed by OCWD, TIC reserved water rights from conveyances of its lands as development over the Subbasin has occurred, and under the Irvine Subbasin Agreement TIC has transferred its rights to IRWD.

(v) Second Amended and Restated Agreement Between Orange County Water District and Irvine Ranch Water District Regarding the Irvine Desalter Project, dated June 11, 2001, and other agreements referenced therein. This agreement provides for the extraction and treatment of subpotable groundwater from the Irvine Subbasin, a portion of the Basin. As is the case with the remainder of the Basin, IRWD's entitlement to extract this water is not adjudicated, but the use of the entitlement is governed by the OCWD Act. (See also, discussion of Irvine Subbasin in the preceding paragraph.) A portion of the product water has been delivered into the IRWD potable system, and the remainder has been delivered into the IRWD nonpotable system.

Orange Park Acres (currently available)

On June 1, 2008, through annexation and merger, IRWD acquired the water system of the former Orange Park Acres Mutual Water company, including its well ("OPA Well"). The well is operated within the Basin.

Wells 21 and 22 (currently available)

In early 2013, IRWD completed construction of treatment facilities, pipelines, and wellhead facilities for Wells 21 and 22. Water supplied through this project became available in 2013. The wells are operated within the Basin.

Irvine Wells (under development)

(vi) IRWD has identified four well sites in west Irvine, Tustin Legacy and Tustin Ranch. Wells 51 and 52 have been drilled and two other vacant well sites have been obtained in Tustin, but not yet drilled. Wells 51 and 52 were recently rehabilitated but have not been connected to the distribution system. The Tustin Legacy Wells will be further investigated as future groundwater needs increase. These production facilities can be constructed and operated under the Act; no statutory or contractual approval is required to do so. Appropriate environmental review has or will be conducted for each facility. See discussion of the Act under Potable Supply - Groundwater, paragraph (i), above.

•NONPOTABLE SUPPLY - RECYCLED

Water Recycling Plants (currently available)

Water Code Section 1210. IRWD supplies its own recycled water from sewage collected by IRWD and delivered to IRWD's Michelson Water Recycling Plant ("MWRP") and Los Alisos Water Recycling Plant ("LAWRP"). Under the recently completed MWRP Phase II Capacity Expansion Project, IRWD increased its tertiary treatment capacity on the existing MWRP site to produce sufficient recycled water to meet the projected demand through the year 2045. MWRP currently has a permitted tertiary capacity of 28 million gallons per day ("MGD") and LAWRP currently has a permitted tertiary capacity of 5.5 MGD. Water Code Section 1210 provides that the owner of a sewage treatment plant operated for the purposes of treating wastes from a sanitary sewer system holds the exclusive right to the treated effluent as against anyone who has supplied the water discharged into the sewer system. IRWD's permits for the operation of MWRP and LAWRP allow only irrigation and other customer uses of recycled water, and do not permit stream discharge of recycled water under normal conditions; thus, no issue of downstream appropriation arises, and IRWD is entitled to deliver all of the effluent to meet contractual and customer demands. Additional reclamation capacity will augment local nonpotable supplies and improve reliability.

•NONPOTABLE SUPPLY - IMPORTED[9]

Baker Pipeline (currently available)

Santiago Aqueduct Commission ("SAC") Joint Powers Agreement, dated September 11, 1961, as amended December 20, 1974, January 13, 1978, November 1, 1978, September 1, 1981, October 22, 1986, and July 8, 1999 (the "SAC Agreement"); Agreement Between Irvine Ranch Water District and Carma-Whiting Joint Venture Relative to Proposed Annexation of Certain Property to Irvine Ranch Water District, dated May 26, 1981 (the "Whiting Annexation Agreement"); service connections OC-13/13A, OC-33/33A. The imported untreated water pipeline initially known as the Santiago Aqueduct and now known as the Baker Pipeline was constructed under the SAC Agreement, a joint powers agreement. The Baker Pipeline is connected to MWD's Santiago Lateral. IRWD's capacity in the Baker Pipeline includes the capacity it subleases as successor to LAWD, as well as capacity rights IRWD acquired through the Whiting Annexation Agreement. (To finance the construction of AMP parallel untreated reaches which were incorporated into the Baker Pipeline, replacing original SAC untreated reaches that were made a part of the AMP potable system, it was provided that the MWDOC Water Facilities Corporation, and subsequently MWDOC, would have ownership, and the participants would be sublessees.) IRWD's original capacities in the Baker Pipeline include 52.70 cfs in the first reach, 12.50 cfs in each of the second, third and fourth reaches and 7.51 cfs in the fifth reach of the Baker Pipeline. These existing Baker Pipeline capacities have been apportioned to the Baker WTP participants based on Baker WTP capacity ownership. IRWD retains 10.5 cfs of the pipeline capacity for potable supply through the Baker WTP and retains 36 cfs in Reach 1U of the Baker Pipeline capacity for nonpotable supply (See also footnote 8, page 27). In 2023, IRWD executed an Agreement that sells 3 cfs to South County agencies, leaving 7.5 cfs for daily use for IRWD. However, should an emergency arise, IRWD retains the right to use the 3 cfs sold. Water is subject to availability from MWD.

•NONPOTABLE SUPPLY - NATIVE

Irvine Lake (currently available)

(i) Permit For Diversion and Use of Water ("Permit No. 19306") issued pursuant to Application No. 27503; License For Diversion and Use of Water ("License 2347") resulting from Application No. 4302 and Permit No. 3238; License For Diversion and Use of Water ("License 2348") resulting from Application No. 9005 and Permit No. 5202, and License For Diversion and Use of Water ("License 2349") resulting from Application No. 9314. The foregoing permit and licenses, held solely by IRWD (as successor to The Irvine Company ("TIC"), Carpenter Irrigation District ("CID"), and Serrano Water District ("SWD")), secure appropriative rights to the flows of Santiago Creek. Under Licenses 2347, 2348, and 2349 IRWD has the right to diversion by storage at Santiago Dam (Irvine

[9] See Imported Supply - Additional Information, below, for information concerning the availability of the MWD supply.

Lake) and a submerged dam, of a total of 25,830 AFY. Under Permit No. 19306, IRWD has the right to diversion by storage of an additional 3,000 AFY by flashboards at Santiago Dam (Irvine Lake), as well as 15 cfs by direct diversion. (Rights under Permit No. 19306 may be junior to an OCWD permit to divert up to 35,000 AFY of Santiago Creek flows to spreading pits downstream of Santiago Dam.) The combined total of native water that may be diverted to storage in Irvine Lake, which is solely owned by IRWD, under these licenses and permit is 28,000 AFY. A 1996 amendment to License Nos. 2347, 2348 and 2349 limits the withdrawal of water from the Lake to 15,483 AFY under the licenses. This limitation specifically references the licensed water, and doesn't reference water stored pursuant to other legal entitlements (e.g. imported water).

- NONPOTABLE SUPPLY - GROUNDWATER

Irvine Subbasin / Irvine Desalter (currently available)

(i) IRWD's entitlement to produce nonpotable water from the Irvine Subbasin is included within the Irvine Subbasin Agreement. See discussion of the Irvine Subbasin Agreement under Potable Supply - Groundwater; paragraph (iv), above.

(ii) See discussion of the Irvine Desalter project under Potable Supply - Groundwater, paragraph (v), above. The Irvine Desalter project will produce nonpotable as well as potable water.

- IMPORTED SUPPLY - ADDITIONAL INFORMATION

As described above, the imported supply from MWD is contractually subject to availability. To assist local water providers in assessing the adequacy of local water supplies that are reliant in whole or in part on MWD's imported supply, MWD has provided information concerning the availability of the supplies to its entire service area. In the MWD 2020 UWMP, MWD has extended its planning timeframe out through 2045 to ensure that the MWD 2020 UWMP may be used as a source document for meeting requirements for sufficient supplies. In addition, the MWD 2020 UWMP includes "Justifications for Supply Projections" (Appendix A-3) that details the planning, legal, financial, and regulatory basis for including each source of supply in the plan. The MWD 2020 UWMP summarizes MWD's planning initiatives over the past 15 years, which includes the Integrated Resources Plan (IRP), the IRP 2015 Update, the WSDM Plan, Strategic Plan and Rate Structure. The reliability analysis in MWD's 2015 IRP Update shows that MWD can maintain reliable supplies under the conditions that have existed in past dry periods throughout the period through 2040. The MWD 2020 UWMP includes tables that show the region can provide reliable supplies under both the single driest year (1977) and multiple dry years (1990-92) through 2045. MWD has also identified buffer supplies, including additional State Water Project groundwater storage and transfers that could serve to supply the additional water needed.

It is anticipated that MWD will revise its regional supply availability analysis periodically, if needed, to supplement the MWD 2020 UWMP in years when the MWD UWMP is not being updated.

IRWD is permitted by the statute (Wat. Code, § 10610 *et seq.*) to rely upon the water supply information provided by the wholesaler concerning a wholesale water supply source, for use in preparing its UWMPs. In turn, the statute provides for the use of UWMP information to support water supply assessments and verifications. In accordance with these provisions, IRWD is entitled to rely upon the conclusions of the MWD UWMP. As referenced above under Summary of Results of Demand-Supply Comparisons - ***Actions on Delta Pumping,*** MWD has provided additional information on its imported water supply.

MWD's reserve supplies, together with the fact that IRWD relies on MWD supplies as supplemental supplies that need not be used to the extent IRWD operates currently available and under-development local supplies, build a margin of safety into IRWD's supply availability.

(2) Adopted capital outlay program to finance delivery of the water supplies.

All necessary delivery facilities currently exist for the use of the *currently available* and *under-development* supplies assessed herein, with the exception of future groundwater wells, and IRWD sub-regional and developer-dedicated conveyance facilities necessary to complete the local distribution systems for the Project. IRWD's turnout at each MWD connection and IRWD's regional delivery facilities are sufficiently sized to deliver all of the supply to the sub-regional and local distribution systems.

With respect to future groundwater well projects (PR Nos. 11828 and 11829), IRWD adopted its fiscal year 2023-24 capital budget on April 24, 2023 (Resolution No. 2023-6) and the mid-cycle capital budget for fiscal year 2024-25 was adopted on May 28, 2024. Budgeting portions of the funds are for such projects. (A copy is available from IRWD on request.) For these facilities, as well as unbuilt IRWD sub-regional conveyance facilities, the sources of funding are previously authorized general obligation bonds, revenue-supported certificates of participation and/or capital funds held by IRWD Improvement Districts. IRWD has maintained a successful program for the issuance of general obligation bonds and certificates of participation on favorable borrowing terms, and IRWD has received AAA public bond ratings. IRWD has approximately $585.5 million (water) and $711.1 million (recycled water and sewer) of unissued, voter-approved general obligation bond authorization. Certificates of participation do not require voter approval. Proceeds of bonds and available capital funds are expected to be sufficient to fund all IRWD facilities for delivery of the supplies under development. Tract-level conveyance facilities are required to be donated to IRWD by the Applicant or its successor(s) at time of development.

See also the MWD 2020 UWMP, Appendix A.3 Justifications for Supply Projections with respect to capital outlay programs related to MWD's supplies.

(3) Federal, state and local permits for construction of delivery infrastructure.

Most IRWD delivery facilities are constructed in public right-of-way or future right-of-way. State statute confers on IRWD the right to construct works along, under or across any stream of water, watercourse, street, avenue, highway, railway,

canal, ditch, or flume (Water Code Section 35603). Although this right cannot be denied, local agencies may require encroachment permits when work is to be performed within a street. If easements are necessary for delivery infrastructure, IRWD requires the developer to provide them. The crossing of watercourses or areas with protected species requires federal and/or state permits as applicable.

See also the MWD 2020 UWMP, Appendix A.3 Justifications for Supply Projections with respect to permits related to MWD's supplies.

(4) Regulatory approvals for conveyance or delivery of the supplies.

See response to preceding item (3). Additionally, in general, supplies under development may necessitate the preparation and completion of environmental documents and/or regulatory approvals prior to full construction and implementation. IRWD obtains such approvals when required, and copies of documents pertaining to approvals can be obtained from IRWD.

See also the MWD 2020 UWMP, Appendix A.3 Justifications for Supply Projections with respect to regulatory approvals related to MWD's supplies.

3. Other users and contract holders (identified supply not previously used).

For each of the water supply sources identified by IRWD, if no water has been received from that source(s), IRWD is required to identify other public water systems or water service contractholders that receive a water supply from, or have existing water supply entitlements, water rights and water service contracts to, that source(s):

Water has been received from all listed sources. A small quantity of Subbasin water is used by Woodbridge Village Association for the purpose of supplying its North and South Lakes. There are no other public water systems or water service contractholders that receive a water supply from, or have existing water supply entitlements, water rights and water service contracts to, the Irvine Subbasin.

4. Information concerning groundwater included in the supply identified for the Project:

(a) Relevant information in the Urban Water Management Plan (UWMP):

See Irvine Ranch Water District 2020 UWMP, section 6.2.

(b) Description of the groundwater basin(s) from which the Project will be supplied:

The Orange County Groundwater Basin ("Basin") is described in the Orange County Water District Groundwater Management Plan ("GMP") 2015 Update, dated June 17, 2015[10]. The rights of the producers within the Basin vis a vis one another have not been adjudicated. The Basin is managed by the Orange County Water District ("OCWD") for the benefit of municipal, agricultural, and

[10] OCWD has also prepared a Long-Term Facilities Plan which was received and filed by its Board in July 2009, and last updated in November 2014.

private groundwater producers. OCWD is responsible for the protection of water rights to the Santa Ana River in Orange County as well as the management and replenishment of the Basin. Current production from the Basin is approximately 260,000 AFY.

The DWR has not identified the Basin as "critically overdrafted," and has not identified the Basin as overdrafted in its most current bulletin that characterizes the condition of the Basin, Bulletin 118. The efforts being undertaken by OCWD to avoid long-term overdraft in the Basin are described in the OCWD GMP 2015 Update and OCWD Master Plan Report ("MPR"), including in particular, Chapters 4, 5, 6, 14 and 15 of the MPR. OCWD has also prepared a Long Term Facilities Plan ("LTFP") which was received by the OCWD Board in July 2009 and was last updated in November 2014. The LTFP Chapter 3 describes the efforts being undertaken by OCWD to eliminate long-term overdraft in the Basin. See also following section on "***Sustainable Groundwater Management Act".***

Although the water supply assessment statute (Water Code Section 10910(f)) refers to elimination of "long-term overdraft," overdraft includes conditions which may be managed for optimum basin storage, rather than eliminated. OCWD's Act defines annual groundwater overdraft to be the quantity by which production exceeds the natural replenishment of the Basin. Accumulated overdraft is defined in the OCWD Act to be the quantity of water needed in the groundwater basin forebay to prevent landward movement of seawater into the fresh groundwater body. However, seawater intrusion control facilities have been constructed by OCWD since the Act was written and have been effective in preventing landward movement of seawater. These facilities allow greater utilization of the storage capacity of the Basin.

OCWD has invested over $250 million in seawater intrusion control (injection barriers), recharge facilities, laboratories, and Basin monitoring to effectively manage the Basin. Consequently, although the Basin is defined to be in an "overdraft" condition, it is actually managed to allow utilization of up to 500,000 acre-feet of storage capacity of the basin during dry periods, acting as an underground reservoir and buffer against drought. OCWD has an optimal basin management target of 100,000 acre-feet of accumulated overdraft provides sufficient storage space to accommodate increased supplies from one wet year while also provide enough water in storage to offset decreased supplies during a two- to three year drought. If the Basin is too full, artesian conditions can occur along the coastal area, causing rising water and water logging, an adverse condition. Since the formation of OCWD in 1933, OCWD has made substantial investment in facilities, Basin management and water rights protection, resulting in the elimination and prevention of adverse long-term "mining" overdraft conditions. OCWD continues to develop new replenishment supplies, recharge capacity and basin protection measures to meet projected production from the basin during normal rainfall and drought periods. (OCWD GMP, OCWD MPR and LTFP)

OCWD's efforts include ongoing replenishment programs and planned capital improvements. It should be noted under OCWD's management of overdraft to maximize the Basin's use for annual production and recharge operations, overdraft varies over time as the Basin is managed to keep it in balance over the

long term. The Basin is not operated on an annual safe-yield basis. (OCWD GMP, OCWD MPR, section 3.2 and LTFP, section 6). See also the following section on "***Sustainable Groundwater Management Act***".

(c) Description and analysis of the amount and location of groundwater pumped by IRWD from the Basin for the past five years:

The following table shows the amounts pumped, by groundwater source since the year 2002:

(In AFY)

Year (ending 6/30)	DRWF/DATS/ OPA/21-22	Irvine Subbasin (IRWD)	Irvine Subbasin (TIC)	LAWD[11]
2024	38,546	2,681	0	0
2023	36,558	4,692	0	0
2022	35,344	5,159	0	0
2021	38,722	3,644	0	0
2020	33,975	4,005	0	0
2019	38,603	3,961	0	0
2018	38,196	4,619	0	0
2017	39,787	4,077	0	169
2016	37,216	4,672	0	307
2015	40,656	9,840	0	336
2014	42,424	10,995	0	376
2013	38,617	8,629	0	282
2012	37,059	7,059	0	0
2011	34,275	7,055	0	0
2010	37,151	8,695	0	3
2009	38,140	7,614	0	0
2008	36,741	4,539	0	16
2007	37,864	5,407	0	6
2006	37,046	2,825	0	268
2005	36,316	2,285	628	357
2004	30,265	1,938	3,079	101
2003	24,040	2,132	4,234	598
2002	25,855	2,533	5,075	744

[11] The water produced from IRWD's Los Alisos wells is not included in this assessment. IRWD is presently evaluating the future use of these wells.

(d) Description and analysis of the amount and location of groundwater projected to be pumped by IRWD from the Basin:

IRWD has a developed groundwater supply of 35,200 AFY from its Dyer Road Wellfield (including the Deep Aquifer Treatment System), in the main portion of the Basin.

Although TIC's historical production from the Subbasin declined as its use of the Subbasin for agricultural water diminished, OCWD's and other historical production records for the Subbasin show that production has been as high as 13,000 AFY. Plans are also underway to expand IRWD's main Orange County Groundwater Basin supply (characterized as *under-development* supplies herein). (See Section 2 (a) (1) herein). IRWD anticipates the development of potential additional production facilities within both the main Basin and the Irvine Subbasin. However, such additional facilities have not been included or relied upon in this assessment. Additional groundwater development will provide an additional margin of safety as well as reduce future water supply costs to IRWD.

The following table summarizes future IRWD groundwater production from currently available and under-development supplies.

(In AFY)

Year (ending 6/30)	DRWF[12]	Future GW[13]	IDP (Potable)	IDP (Nonpotable)
2025	42,218	2,800	5,618	3,461
2030	42,218	2,800	5,618	3,461
2035	42,218	2,800	5,618	3,461
2040	42,218	2,800	5,618	3,461

(e) If not included in the 2020 UWMP, analysis of the sufficiency of groundwater projected to be pumped by IRWD from the Basin to meet the projected water demand of the Project:

See responses to 4(b) and 4(d).

The OCWD MPR and LTFP examined future Basin conditions and capabilities, water supply and demand, and identified projects to meet increased replenishment needs of the basin. With the implementation of OCWD's preferred projects, the Basin yield in the year 2025 would be up to 500,000 AF. The amount that can be produced will be a function of which projects will be implemented by OCWD and how much increased recharge capacity is created

12 See Potable Supply - Groundwater, paragraph (iii), above. DRWF non-colored production above 28,000 AFY and colored water production above 8,000 AFY are subject to contractually-imposed assessments. In addition, seasonal production amounts apply. This also includes 3,200 AFY for the OPA well and 2,800 AFY for Wells 21 & 22.

13 Under-development.

by those projects, total demands by all producers, and the resulting Basin Production Percentage ("BPP") that OCWD sets based on these factors.[14] Sufficient replenishment supplies are projected by the OCWD MPR to be available to OCWD to meet the increasing demand on the Basin. These supplies include capture of increasing Santa Ana River flows, purchases of replenishment water from MWD, and development of new local supplies. In 2008, OCWD began operating its replenishment supply project, the Groundwater Replenishment System project ("GWRS"). The GWRS currently produces approximately 100,000 AFY of new replenishment supply from recycled water (OCWD GMP).

Production of groundwater can exceed applicable basin production percentages on a short-term basis, providing additional reliability during dry years or emergencies. Additional groundwater production is anticipated by OCWD in the Basin in dry years, as producers reduce their use of imported supplies, and the Basin is "mined" in anticipation of the eventual availability of replenishment water. (OCWD MPR, section 14.6.)

See also, Figures 1-8 hereto. IRWD assesses sufficiency of supplies on an aggregated basis, as neither groundwater nor other supply sources are allocated to particular projects or customers. Under the Irvine Subbasin Agreement, IRWD is contractually obligated to attribute the Subbasin supply only to TIC development projects for assessment purposes; however, the agreement does not allocate or assign rights in the Subbasin supply to any project.

Sustainable Groundwater Management Act. Pursuant to the Sustainable Groundwater Management Act ("SGMA"), the DWR has designated the Orange County groundwater basin, Basin 8-1, as a medium priority basin for purposes of groundwater management. The SGMA specifically calls for OCWD, which regulates the Orange County groundwater basin, to serve as the groundwater sustainability agency or "GSA". The SGMA allows Special Act Districts created by statute, such as OCWD, to prepare and submit an alternative to a Groundwater Sustainability Plan ("GSP") that is "functionally equivalent" to a GSP. Basin 8-1 includes the OCWD service area and several fringe areas outside of OCWD that are within the Basin 8-1 boundary. Per the requirements of SGMA, an Alternative Plan must encompass the entire groundwater basin as defined by DWR. On January 1, 2017, OCWD and the overlying agencies within Basin 8-1, including IRWD, jointly prepared and submitted an alternative plan in compliance with SGMA (Basin 8-1 Alternative). The Basin 8-1 Alternative was updated in January 2024.

[14] OCWD has adopted a basin production percentage of 85% for 2024-25. In prior years OCWD has maintained a basin production percentage that is lower than the current percentage, and IRWD anticipates that such reductions may occur from time to time as a temporary measure employed by OCWD to encourage lower pumping levels as OCWD implements other measures to reduce the current accumulated overdraft in the Basin. Any such reductions are not expected to affect any of IRWD's currently available groundwater supplies listed in this assessment, which are subject to a contractually-set equivalent basin production percentage as described or are exempt from the basin production percentage.

5. ☒ This Water Supply Assessment is being completed for a project included in a prior water supply assessment. Check all of the following that apply:

☒ Changes in the Project have substantially increased water demand.

☐ Changes in circumstances or conditions have substantially affected IRWD's ability to provide a sufficient water supply for the Project.

☐ Significant new information has become available which was not known and could not have been known at the date of the prior Water Supply Assessment.

6. References

Water Resources Master Plan, Irvine Ranch Water District, Updated 2017

Water Shortage Contingency Plan, Irvine Ranch Water District, June 2021

2020 Urban Water Management Plan, Irvine Ranch Water District, June 2021

Proposed Framework for Metropolitan Water District's Delta Action Plan, Metropolitan Water District of Southern California, May 8, 2007

2007 IRP Implementation Report, Metropolitan Water District of Southern California, October 7, 2007

2010 Integrated Resources Plan Update, Metropolitan Water District of Southern California, October 2010

2015 Integrated Resources Plan Update, Metropolitan Water District of Southern California, January 2016

2020 Integrated Water Resources Plan Regional Needs Assessment, Metropolitan Water District of Southern California, April 2022

2020 Urban Water Management Plan, Metropolitan Water District of Southern California, June 2021

2020 Urban Water Management Plan, Municipal Water District of Orange County, May 2021

Climate Action Plan, Metropolitan Water District of Southern California, May 2022

Climate Action Plan Phase 2: Climate Change Analysis Guidance, California Department of Water Resources, September 2018

Master Plan Report, Orange County Water District, April 1999

Groundwater Management Plan 2015 Update, Orange County Water District, June 2015

Final Draft Long-Term Facilities Plan, Orange County Water District, January 2006

Long-Term Facilities Plan 2014 Update, Orange County Water District, November 2014

2022-2023 Engineer's Report on Groundwater Conditions, Water Supply and Basin Utilization in the Orange County Water District, Orange County Water District, February 2024

Basin 8-1 Alternative, Orange County Water District, January 2017

Basin 8-1 Alternative 2022 Update, Orange County Water District, January 2022

Exhibit A

Depiction of Project Area

Gateway Residential Project in PA2

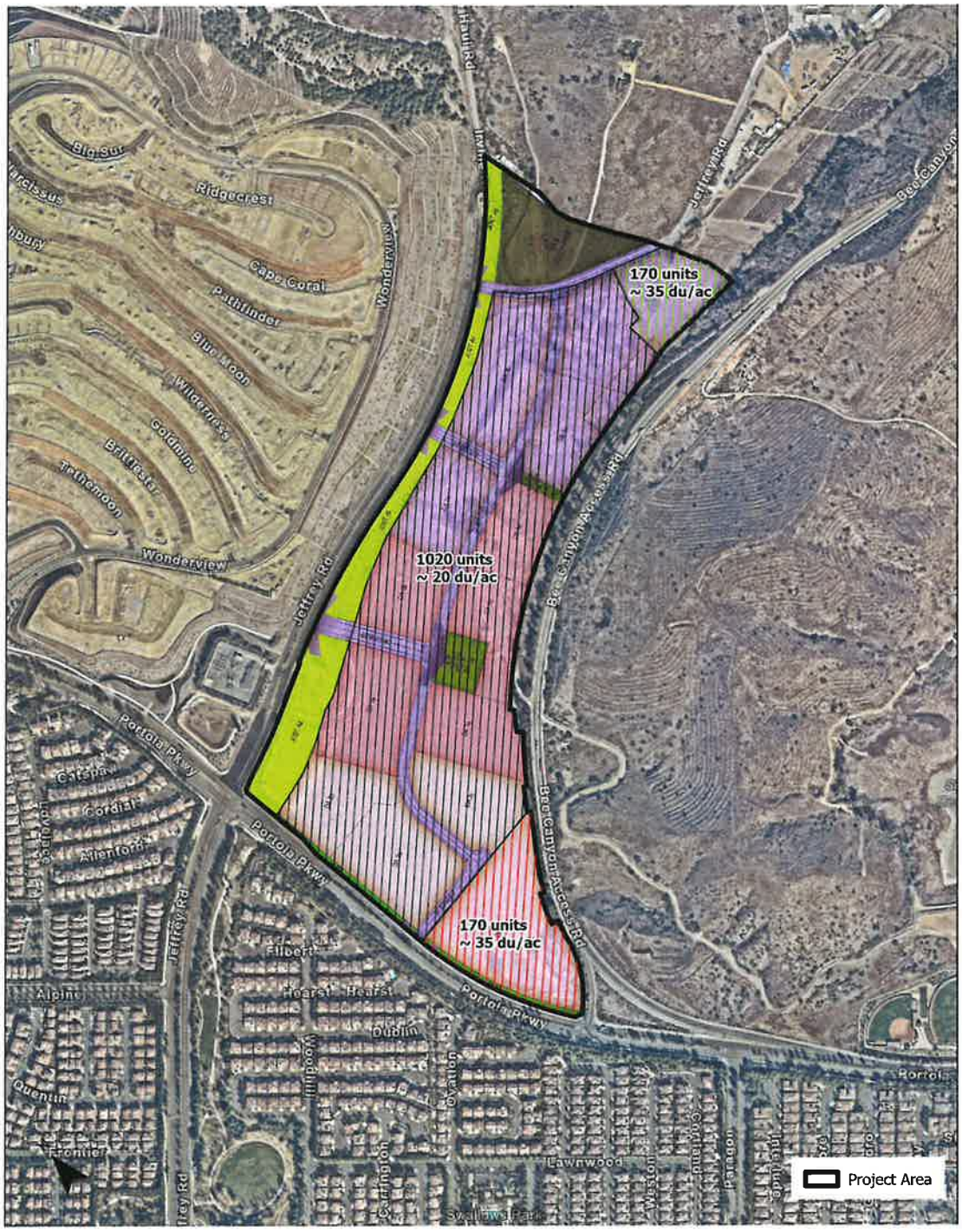

Exhibit B

Uses Included in Project

1/30/25

Irvine Ranch Water District
15600 Sand Canyon
Avenue P.O. Box 57000
Irvine, CA 92619-7000

Re: Request for Water Supply Availability Assessment (Water Code §10910 *et seq.*) for Gateway Residential Project in the City of Irvine

The City of Irvine hereby requests an assessment of water supply availability for the below-described project. The City has determined that the project is a "project" as defined in Water Code §10912, and has determined that an environmental impact report is required for the project.

Proposed Project Information

Project Title: Gateway Residential

Location of project: Northeast corner of Portola Parkway and Jeffrey Road. The site is bounded by Portola Parkway to the south, Jeffrey Road/Hicks Haul Road to the northwest, and Bee Canyon Access Road to the east. Hicks Canyon Wash is to the north.

☐ (For projects requiring a new assessment under Water Code §10910 (h).) Previous Water Supply Assessment including this project was prepared on: _____. This application requests a new Water Supply Assessment, due to the following (check all that apply):

☐ Changes in the project have substantially increased water demand

☐ Changes in circumstances or conditions have substantially affected IRWD's ability to provide a sufficient water supply for the project

☐ Significant new information has become available which was not known and could not have been known at the date of the prior Water Supply Assessment

(Enclose maps and exhibits of the project)

Type of Development:

☒ *Residential*: No. of dwelling units: 1, 360 dwelling units

☐ *Shopping center or business*: No. of employees N/A Sq. ft. of floor space N/A

☐ *Commercial office*: No. of employees N/A Sq. ft. of floor space N/A

☐ *Hotel or motel*: No. of rooms N/A

☐ *Industrial, manufacturing, processing or industrial park:* No. of employees N/A
No. of acres N/A Sq. ft. of floor space N/A

☐ *Mixed use* (check and complete all above that apply)

☐ *Other*: N/A

Total acreage of project: 120 gross acres

Acreage devoted to landscape:
Greenbelt approx 35 acres golf course N/A parks approx 6.7 acres
Agriculture N/A other landscaped areas approx 1.2 acres

Number of schools N/A Number of public facilities 4.9 acre public park & 9.5 acre trail

Other factors or uses that would affect the quantity of water needed, such as peak flow requirements or potential uses to be added to the project to reduce or mitigate environmental impacts:

1.4 acre neighborhood park with resident amenities such as swimming pools

What is the current land use of the area subject to a land use change under the project?
Current use is vacant land with a seed farm. Project site is currently designated in the General Plan as Recreation but a general plan amendment will be requested for residential development.

Is the project included in the existing General Plan? No If no, describe the

The project site is currently designated for Recreation. A Genereal Plan Amendment will be requested for residential development

The City acknowledges that IRWD's assessment will be based on the information hereby provided to IRWD concerning the project. If it is necessary for corrected or additional information to be submitted to enable IRWD to complete the assessment, the request will be considered incomplete until IRWD's receipt of the corrected or additional information. If the project, circumstances or conditions change or new information becomes available after the issuance of a Water Supply Assessment, the Water Supply Assessment may no longer be valid. The City will request a new Water Supply Assessment if it determines that one is required.

The City acknowledges that the Water Supply Assessment shall not constitute a "will-serve" or in any way entitle the project applicant to service or to any right, priority or allocation in any supply, capacity or facility, and that the issuance of the Water Supply Assessment shall not affect IRWD's obligation to provide service to its existing customers or any potential future customers including the project applicant. In order to receive service, the project applicant shall be required to file a completed Application(s) for Service and Agreement with the Irvine Ranch Water District on IRWD's forms, together with all fees and charges, plans and specifications, bonds and conveyance of necessary easements, and meet all other requirement as specified therein.

CITY OF IRVINE

By: Erica S. Hong

Erica S. Hong
Senior Planner, Community Development

REQUEST RECEIVED:

Date: 3-19-25

By: [signature]
Irvine Ranch Water District

REQUEST COMPLETE:

Date: 4-15-2025

By: [signature]
Irvine Ranch Water District