

OAKDALE IRRIGATION DISTRICT WATER RESOURCES PLAN — A CALIFORNIA WATER MANAGEMENT CASE STUDY

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ABSTRACT

In response to a range of internal and external drivers and the need to protect the district's pre-1914 water rights, Oakdale Irrigation District (OID) developed a long-term Water Resources Plan (WRP). The 100-year-old irrigation district provides irrigation and domestic water service to over 55,000 acres in California's San Joaquin Valley.

The study effort created a strategic roadmap for the implementation of a \$170 million capital program focused on protecting OID's water rights while meeting the changing needs of its constituency and serving the region. The second phase included programmatic environmental documentation, which is being followed by design and construction of facility improvements.

This multi-disciplined effort included detailed land use modeling, water balance modeling, on-farm surveys, a comprehensive infrastructure assessment, and the development of a phased infrastructure plan to rehabilitate and modernize an out-of-date system. The approach also integrated water right evaluations, groundwater studies, development and evaluation of program alternatives, financial analyses, environmental compliance, and public outreach.

Key benefits resulting from WRP implementation include protecting the district's water rights, increasing reliability during droughts, and modernizing a century-old system to meet the needs of its current and future customer base. Implementation includes a balanced effort of water transfers and expansion of service into OID's sphere of influence while keeping water rates affordable. OID's infrastructure will be rebuilt, modernized, and expanded, and customer service and water use efficiency will be enhanced.

INTRODUCTION AND BACKGROUND

Purpose and Scope of the Water Resources Plan

Oakdale Irrigation District (OID) is a nonprofit, local public agency that operates as a political entity of the State under the California Water Code. This is the district's mission:

To protect and develop Oakdale Irrigation District water resources for the maximum benefit of the Oakdale Irrigation District community by providing excellent irrigation and domestic water service.

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The complexity of water issues, both locally and at the state level, necessitated a rethinking of OID's current practices and priorities in order to guarantee full protection of the district's and region's water supplies into the future. The District's Board of Directors and management commissioned CH2M HILL to explore the issues facing OID and develop a comprehensive plan to respond to these issues. These were the principal objectives of the Water Resources Plan (WRP).

In the development of the WRP, the OID Board of Directors developed the following five goals that they agreed to be key to developing water management strategies and alternatives:

- Provide long-term protection to OID's water rights
- Address federal, state, and local challenges
- Rebuild and modernize an out-of-date system to meet changing customer needs
- Involve the public in the planning process
- Develop affordable ways to finance improvements

The WRP evaluates the district's water resources, delivery system, and operations, and examines land use trends to determine how future changes in these areas will impact water supply and demand during the next two decades. The plan also provides specific, prioritized recommendations for OID facility improvements that will comply with the California Environmental Quality Act (CEQA) and accommodate available financial resources.

General Background

OID is located in the northeast portion of the San Joaquin Valley, about 30 miles southeast of Stockton and 12 miles northeast of Modesto, as shown in Figure 1. The OID service area consists of 72,500 acres between the Sierra Nevada and the Central Valley along the San Joaquin–Stanislaus county line, surrounding the city of Oakdale and bordering the cities of Riverbank and Modesto. The district's sphere of influence (SOI)—land that the district is permitted by law to annex, but to which it has not yet provided service—extends 86,290 acres farther to the north and east into Calaveras County. The Stanislaus River flows from the east through the center of the district service area and SOI.

Situated near the base of the Sierra Nevada foothills, OID's topography varies from gently rolling hills to the east and south of Oakdale to nearly flat around Riverbank. Approximately 75 percent of the land within the OID service area consists of irrigated agriculture. Native vegetation and rangeland dominates the land immediately outside the OID service area to the north, south, and east.

OID experiences mild, moderately wet winters and warm, dry summers typical of the Central Valley. Average temperatures range from the mid-forties in winter to the mid-nineties in summer. Precipitation averages about 12 inches annually, over 85 percent of which occurs between November and March. Average evapotranspiration (ET) is approximately 46 inches seasonally (April through October). Climate conditions are generally uniform throughout the district.

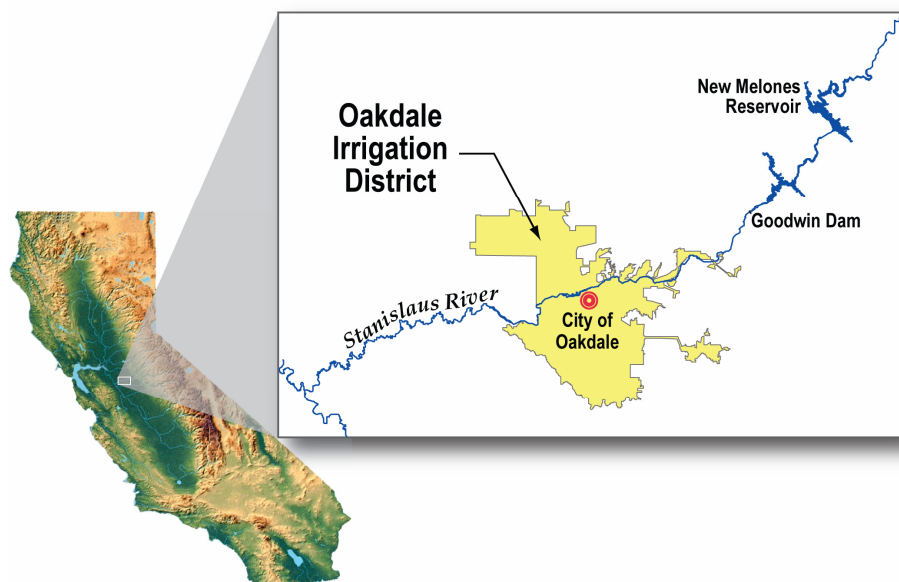


Figure 1. Location of Oakdale Irrigation District

History of OID

In 1909 OID was organized under the California Irrigation District Act by a majority of landowners within the district in order to legally acquire and construct irrigation facilities and distribute irrigation water from the Stanislaus River. In 1910 OID and the neighboring South San Joaquin Irrigation District (SSJID) purchased Stanislaus River water rights and some existing conveyance facilities from previous water companies. The districts continued to expand their facilities and infrastructure over the next several decades.

Since their creation, OID and SSJID have constructed dams and reservoirs to regulate surface water storage and deliveries. Most dams were constructed in the 1910s and 1920s, including Goodwin Dam (1913), Rodden Dam (1915), and Melones Dam (1926), which provided 112,500 acre-feet (ac-ft) of shared capacity. To provide supplemental water storage for OID and the SSJID, the Tri-Dam Project was created in the 1940s. Sites were approved in 1948 for Donnells Dam and Beardsley Dam on the Middle Fork Stanislaus River, and Tulloch Dam above Goodwin. The two districts entered a joint agreement to carry out the proposed project and now jointly own and operate the three storage reservoirs for a combined storage capacity of 230,400 ac-ft.

In the early 1970s Reclamation replaced the Melones Dam with the larger New Melones Dam and Reservoir. The districts have an operations agreement with Reclamation to utilize the federally owned New Melones Reservoir.

Significant capital investment has led to a stable, plentiful water supply for the district. Over the last 50 years, the district has focused its financial resources on paying off these capital investments; as a result, few new facilities have been constructed during that time, despite changing demographics and land use in the surrounding area that have influenced demand for OID's services.

Budget and Sources of Revenue

The OID Board of Directors strives to distribute water equitably to the water users at cost. The budget is set annually by the Board.

Revenues District revenues totaled \$8.8 million in 2004 and are budgeted to reach approximately \$10 million in 2005. The sources of these revenues are shown in Figure 2. Revenues generated from normal district operations total between \$3.6 and \$3.9 million, while non-operating and joint-venture revenues contribute the remaining funds. On average, the Tri-Dam Power Project contributes approximately \$4.4 million to OID's annual revenue, depending on water year type.

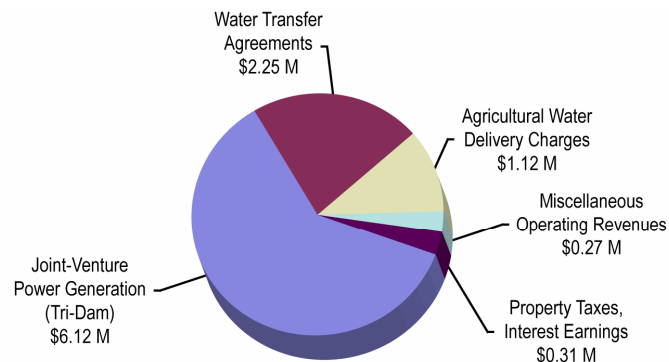


Figure 2. 2005 OID Budget Revenues

Power generation from both the Tri-Dam Power Project and the Tri-Dam Power Authority accounts for over 60 percent of the district's total revenue. Water transfer agreements and agricultural water delivery charges also contribute approximately one-third of net revenue. Domestic water charges and taxes provide only a slight contribution to total revenue.

Expenditures Budgeted expenditures for 2005 total approximately \$11.9 million. Expenditures consist mainly of operations, maintenance, and administrative activities, as shown in Figure 3. About one-fifth of all expenditures consist of capital purchases and projects. Capital replacement projects make up 82 percent of capital expenditures, while capital improvements and purchases make up 10 and 8 percent, respectively.

In the past the district focused on meeting maintenance needs as they arose, because the financial means were not available for significant modernization of facilities. The district's financial position has recently improved as a result of the payment completion on a large bond issue. The district also anticipates increases in revenues from its power generation facilities following relicensing. As a result, the district plans to invest a much greater percentage of its revenues in facilities and organizational improvements.

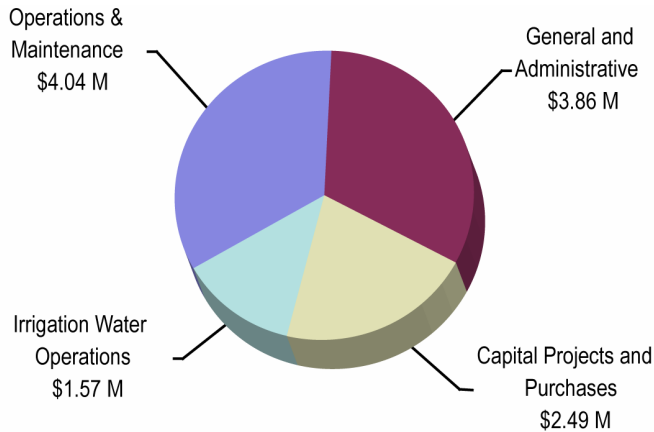


Figure 3. 2005 OID Budgeted Expenditures

The District Today

Currently, the district maintains over 330 miles of laterals, pipelines, and tunnels, 29 production wells, and 43 reclamation pumps to serve local customers. In general, the district’s facilities, system operations, political organization, and administration have not changed significantly over the last several decades. Nearly all water supply canals were constructed more than 50 years ago. In recent years, however, the district’s customers, land use, and financial resources have developed in a direction that may influence the way OID provides services and conducts business.

OAKDALE IRRIGATION DISTRICT FACTS	
Year OID was organized:	1909
Cost to OID and SSJID for existing irrigation system and water rights in 1910:	\$650,000
Total district acreage:	72,500
Total irrigated acres:	55,600
Annual diversion right:	300,000 acre feet
Diversion point:	Goodwin Dam
Maximum diversion rate from Goodwin Dam:	910 cfs
Total distance of water delivery system:	330 miles of canals (open, lined, and buried pipelines)
Number of agricultural wells:	24
Number of agricultural and domestic water accounts:	3,500
Percent of OID agricultural customers who farm parcels of 10 acres or less:	60 percent, constituting 12 percent of OID land
Percent of OID agricultural customers who farm parcels of 40 acres or more:	4 percent, constituting 60 percent of OID land
The combined storage capacity for Tulloch, Beardsley, and Donnels Reservoirs:	230,400 ac-ft
Combined power generation by the Tri-Dam Power Project:	81,000 kilowatts

Analyses and Findings

Analyses conducted for the WRP included detailed land use modeling, water balance modeling, on-farm surveys, a comprehensive infrastructure assessment, and the development of a phased infrastructure plan to rehabilitate and modernize an out-of-date system. The integrated approach also included water right evaluations, groundwater studies, development and evaluation of program alternatives, financial analyses, environmental compliance, and public outreach. The following discussion summarizes some of the key analyses conducted in the study.

Land Use

OID currently serves 2,800 agricultural customers on approximately 55,600 acres of serviceable land. The district also provides water to 700 domestic accounts primarily east of the City of Oakdale.

Agriculture dominates the lands in and surrounding OID, as shown in Figure 4. Within the district service area, pasture makes up approximately half of the total land use, or about 32,000 acres. The other half of the district consists of orchards, corn and oat crops, and municipal land in relatively even proportions. Only a small percentage of the land in the district's service area consists of native vegetation.

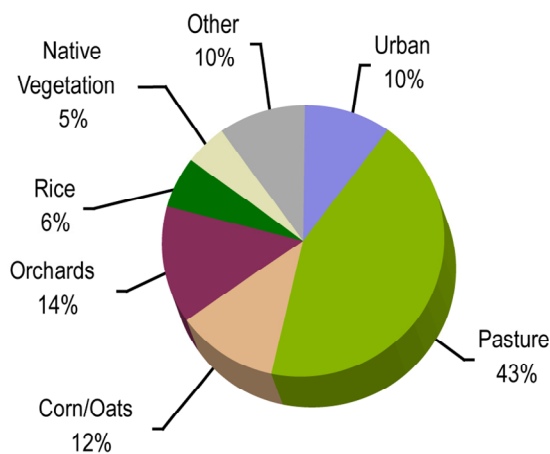


Figure 4. Land Use Distribution in OID

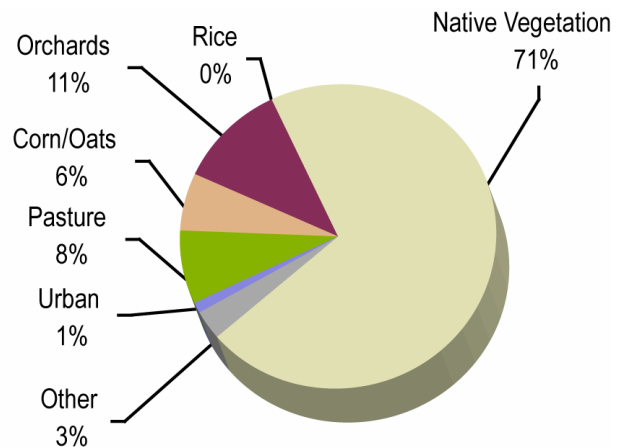


Figure 5. Land Use Distribution within OID Sphere of Influence

Outside the OID service area but inside the district's SOI, native vegetation dominates three-quarters of the land, or approximately 47,000 acres, as shown in Figure 5. Orchards and pasture crops make up 11 percent and 9 percent, respectively. Corn and oats make up 6 percent. Rice and urban/industrial areas make up 1 percent or less of the district SOI outside the service area.

Land use within the OID service area has shifted in recent years, and these trends point to continued change in the future. Some agricultural land around the cities is urbanizing. The City of Oakdale is experiencing steady population growth. It is forecasted that over the next 20 years, 6,000 acres of agriculture in OID will be replaced by municipal land, resulting in fewer irrigated acres and a lower demand for OID water.

Many OID customers are also changing the types of crops they are growing. Across the region, higher-value tree crops are replacing pasture. Orchards use less water and require a more intensive, responsive level of irrigation service than is currently provided by the district. Land ownership is also changing as large parcels are subdivided, leading to increased ranchette-type development in some areas. All these factors may necessitate changes to the level of services the district can currently provide.

Of particular note is that orchard acreage outside OID’s existing service boundaries has more than doubled in the past decade. This is the result of accelerated market conditions for nut crops. The irrigation water source for orchards outside OID is almost exclusively groundwater. The majority of orchard development has occurred immediately adjacent to OID’s eastern boundary. This development offers significant opportunity for expansion of service by OID.

Forecasted Trends As shown in Figures 6 and 7, forecasted land use inside and adjacent to the current OID service area is expected to continue changing substantially.

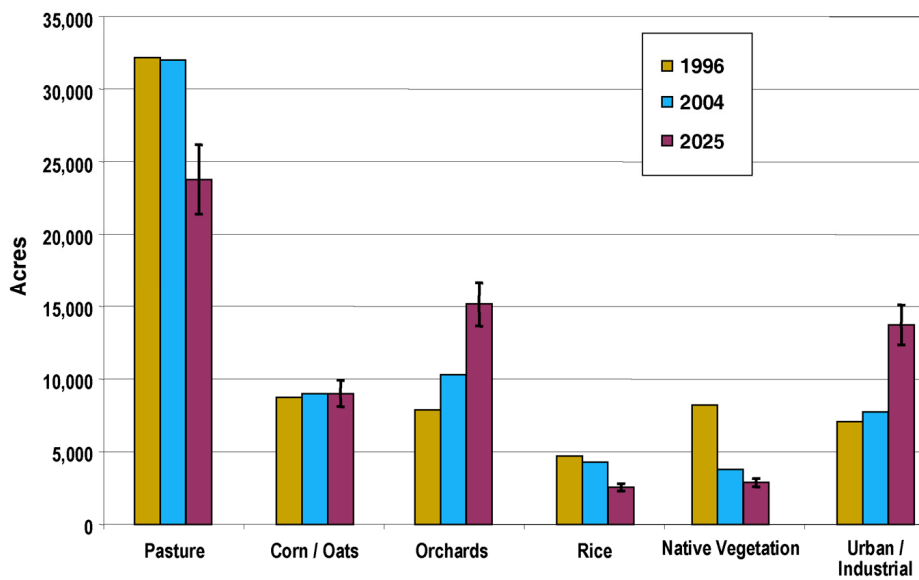


Figure 6. Historical and Forecasted Trends Inside OID Service Area

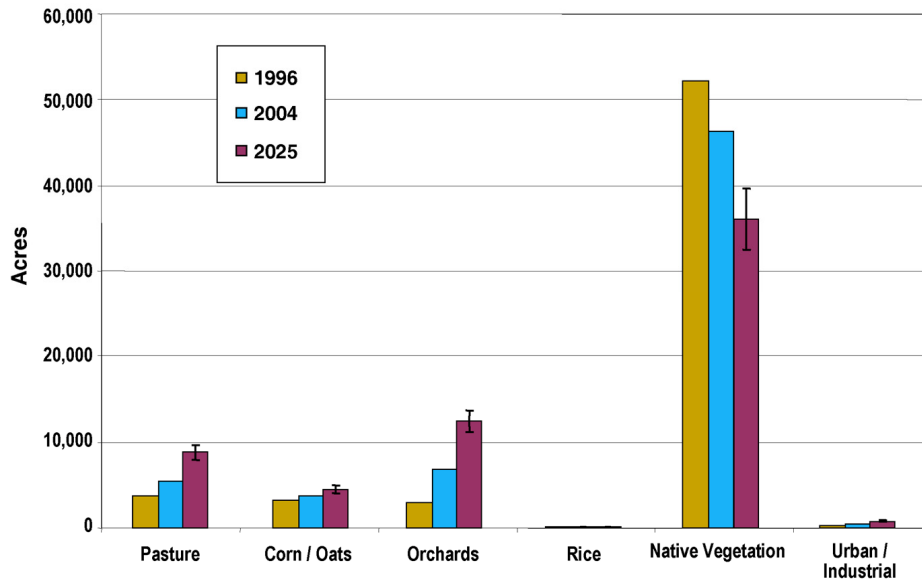


Figure 7. Historical and Forecasted Trends Outside OID Service Area

While pasture is generally projected to decrease within OID, orchards are expected to increase nearly 50 percent to approximately 15,000 acres in 2025. Nearly all these orchards are expected to implement fairly efficient irrigation systems (such as microsprinklers), resulting in significant water savings. It is expected that most orchards (average applied water approximately 3 ac-ft per acre) will be planted on ground that was previously pasture (average applied water approximately 6 ac-ft per acre). This will result in the applied water demand being essentially cut in half. Also, the efficiency of the irrigation systems will result in other water savings, including reduced—and in many cases eliminated—tailwater production.

The forecasted 2015 City of Oakdale population is 29,000. Actual holding capacity of the 2015 boundary area, if completely built out, would be about 39,000. New residential growth through 2015 is forecasted to occur in all directions around the city, and will likely fill in four primary areas within the 2015 growth boundary. Accounting for additional urbanization between 2015 and 2025, 10 percent of total current OID lands, most of which is currently irrigated agriculture, will likely be lost to urbanization by 2025.

Land Use Conclusions Historical land use and forecasted changes will significantly influence the future of OID and service to its customers. Forecasted land use is a fundamental element of the WRP and has significant influence over the suggested recommendations for the future.

Infrastructure Assessment

As part of the WRP, a detailed infrastructure assessment was conducted and concluded that major vulnerabilities exist with the OID primary water delivery system and that a large proportion of the system has significantly deteriorated. Additionally, changing customer needs

and service conditions require that OID modernize its system to provide more responsive and reliable service. Assessments were conducted for these areas of the OID water delivery system:

- Joint Main Canal, North Main Canal, and South Main Canal
- Regulating reservoirs
- Primary distribution system
- Groundwater wells
- Drainwater and reclamation facilities
- Supervisory Control and Data Acquisition System (SCADA)
- OID's standards for providing irrigation service to its customers

Water Balance Modeling

The WRP documented water supplies available to OID, described efforts to assess the current OID infrastructure system and level of service, classified current land uses and forecast future uses within and surrounding the district, and summarized current on-farm practices. This information was integrated into the plan to develop and project the current and future use of water within the district. To facilitate this analysis, a systemwide operational water balance model (WBM) was developed. The WBM provides a flexible analytic tool for simulating a range of long-term operating scenarios and overall WRP alternatives.

The WBM is designed for systemwide analysis of water supply operations and accounts for the primary water balance components of the OID service area. The OID supply, conveyance, and drainage systems are represented via a "flow-path" schematic. Consistent with the infrastructure assessment and the land use analysis, the basic unit of analysis is the lateral service area (LSA), which is the geographic area supplied by a given supply lateral. The model uses a "demand-driven" water balance simulation, starting with the determination of on-farm water supply requirements (farm turnout delivery) for each LSA. The on-farm demand is determined by climate parameters, crop type, acreage, irrigation method, and average slope and soils properties. Supply sources such as surface water (Stanislaus River diversions), groundwater, and drainwater reclamation are used in a prioritized manner to meet the on-farm demands. Conveyance system losses, such as seepage and operational spills, are estimated for each LSA and included in the overall water balance accounting. Drainage basin inflows, reclamation pumping, and net outflows are tracked. The model runs on a weekly time-step for approximately a 30-week irrigation season.

The OID WBM runs on a general simulation commercial software platform called EXTEND. The model platform is used to develop "objects," or elements of the system making up the water balance. Examples of the model objects are the LSAs, groundwater wells, main canals, and drainage basins. Each component has user inputs to define system parameters, and linkages to other components that make up the overall flow-path of water through the OID service area. The model provides a graphical user interface based on a schematic flow path representation of the OID water system components.

The primary water balance unit of analysis is the LSA. Each LSA represents the portion of the OID service area supplied by a specific distribution lateral. Water supply into the LSA is provided by a combination of surface water, groundwater from wells, and reclamation pumps (drainwater). Water leaves the LSA through ET, deep percolation, tailwater spills to drains, and operational spills to drains. The drainage basin is the object in the WBM for tracking the supply, reuse, and outflow of drainwater. Each LSA overlaps one or more drainage basins, into which its tailwater and operational spills flow.

A baseline operations water balance was created to simulate the primary water components of OID's overall system under existing land use and varying hydrologic and climatic conditions. The baseline model was developed using 2004 land use information (which represents the most recent land use survey data available), irrigation efficiencies developed from an on-farm survey at OID, available outflow data from OID's boundary outflow program, and average- and drought-period climatic (ET and precipitation) records. Land use was developed using geographic information system coverage for OID's assessed parcels combined with California Department of Water Resources land use survey data. By starting with a baseline model that reasonably represents existing conditions, the model can then be used to evaluate the net impacts of key factors influencing OID's long-term water demand and supply, such as crop shifting and changes in farm efficiency levels, annexation of new service areas, varying levels of drainwater reclamation, groundwater pumping, and distribution system improvements.

The WBM was used to evaluate key water balance components for the OID system based on projected 2025 land use and assuming various climatic and hydrologic conditions. These analyses supported the evaluation of programmatic alternatives for system modernization, service area expansion, and water transfers.

Alternative Development and Evaluation

The WRP evaluated the district's water resources, delivery system, and operations. It surveyed on-farm water use and practices. The needs and perceptions of OID customers, OID Board of Directors, OID staff, local and regional elected officials, and neighboring jurisdictions were surveyed and assessed. In conjunction with this comprehensive assessment, the WRP examined land use trends to project how future land uses will impact water supply and demand over the next two decades. Lastly, the water balance efforts provided insight on projected water use in and surrounding the district.

Under all likely scenarios for future land uses and demand for water within OID, the district's water supplies are more than sufficient to accommodate future in-district needs (provided that the WRP's suggested infrastructure repair and modernization and service recommendations are implemented). To address the expected changes in future OID customers' needs and to reasonably and beneficially use the district's water supplies, several alternatives were developed and evaluated.

Summary Description of Programmatic Alternatives Four distinct programmatic alternatives were developed based on extensive interaction with OID staff, the Board of Directors, and the

public. These alternatives encompass a range of reasonable options available to the district in response to the land use, regulatory, resources, and customer-driven issues presented in the WRP. The term *programmatic* is used to emphasize that the alternatives evaluated in the WRP are broad-based and strategic, and represent policy-level options for OID's consideration. Highlights of the four programmatic alternatives are provided in the following sidebars.

ALTERNATIVE 1: CONTINUE PRESENT PRACTICES

Over recent years, OID has initiated several important efforts to improve management, operations, facility replacement, and long-term planning. OID has been engaged in several regional efforts related to water quality and groundwater management, has been conducting a moderate level of capital improvements to address the highest risks to the water delivery system, and has entered into three water transfer agreements to put its supplies to beneficial use and create additional revenue to fund improvements.

Alternative 1 generally consists of the following:

- Maintain existing level of service to OID customers.
- Implement an infrastructure plan that addresses high-priority improvements and major service liabilities but does not include any system enhancements to improve service or better manage system surface water outflow.
- Do not expand service to growers within the district SOI (no annexation or out-of-district water sales).
- Continues current level of water transfers.
- Participate in regional activities such as cooperative programs for groundwater management and water quality.
- Take only minimal action to improve OID system efficiency or customer on-farm water use efficiency.

ALTERNATIVE 2: MAXIMIZE SERVICE IMPROVEMENTS WITHIN DISTRICT BOUNDARIES

This programmatic alternative is similar to Alternative 1, but has the following significant differences:

- Improve level of service to customers (consists of operational, policy, management, and infrastructure improvements).
- Provide improved drought protection.
- Construct facilities to better manage OID surface water outflow.
- Establish new and/or revised water transfer agreements.

ALTERNATIVE 3: MAXIMIZE SERVICE IMPROVEMENTS WITHIN DISTRICT BOUNDARIES AND MODERATE EXPANSION OF SERVICE WITHIN OID'S SOI

Similar to Alternative 2, this variation allows for the moderate expansion of service into the district's SOI. This is the most balanced of all alternatives because it provides for service expansion while allowing water transfers as necessary to fund required improvements.

ALTERNATIVE 4: MAXIMIZE SERVICE WITHIN OID'S SOI

This alternative would maximize the use of available water for expanding service to growers within the district's SOI. Under this alternative, no water is available for transfer because all district water supplies are used to facilitate an expanded customer base.

Evaluation Process The WRP programmatic alternatives were developed and comprehensively evaluated using analytic and qualitative methods. From this analysis emerged the Best Apparent Alternative: the package of recommended facilities and actions for the district to advance as the basis for programmatic environmental documentation.

Elements Common to Multiple Alternatives With the exception of Alternative 1, all alternatives contain several common components and elements. For example, each alternative is predicated on the philosophy that OID must first provide dependable irrigation and domestic service to users within its service area before it considers either expanding service outside district boundaries or transferring water to other agencies. Other common features are the following:

- Revised service standard
- WRP recommendations implemented within district boundaries
- Uniform projections for land use
- Conservative projections for on-farm water use efficiency
- Improved water supply reliability

Evaluation Methodology Applying these common assumptions uniformly, a detailed methodology was employed to determine key water balance components for projected 2025 conditions for each programmatic alternative.

Next, decisions regarding the provision of service to customers outside OID but inside the SOI (annexation) and water transfers were made for each alternative. Lastly, a Financial Model was used to analyze various strategies for viably supporting each alternative.

The four alternatives, combined with the viable financial strategies for implementation, results in a set of 13 distinct options, all of which are financially and technically feasible. Following the evaluation, a matrix summarizing each alternative was then compared to the WRP goals. From this comparison emerged the Best Apparent Alternative. The results of the water balance analysis for each programmatic alternative are summarized in Table 1.

Table 1. Water Balance/Reliability Analysis: Summary of 2025 Transfer and/or Annexation Opportunities by Programmatic Alternative

Alternative	Description	Key Components
1	Continue Present Practices	Present practices consist of a minimum transfer obligation of 30,000 ac-ft up to a maximum of 41,000 ac-ft.
2	Maximize Service Improvements within District Boundaries	2025 firm transfer of 50,000 ac-ft Additional variable transfer of 17,000 ac-ft
3	Maximize Service Improvements within District Boundaries and Moderate Expansion of Service within OID's SOI	2025 firm transfer of 50,000 ac-ft 4,250 acres of expanded service in SOI to utilize 17,000 ac-ft
4	Maximize Expansion of Service within OID's SOI	16,750 acres of expanded service in SOI to utilize 67,000 ac-ft of available supplies

In multiple programmatic alternatives, an initial and final level of firm and variable water transfers are identified. A firm water transfer is defined as the quantity of water provided in every year, including droughts. Variable transfers are reduced during dry years as Stanislaus

River supplies to OID are curtailed. OID currently transfers water to a neighboring special district and to the federal Bureau of Reclamation. These existing transfers total 41,000 ac-ft. Of that volume, 30,000 ac-ft are firm and 11,000 ac-ft are variable. Over the course of WRP implementation, the quantities of firm and variable supplies available for transfer were forecast to increase to 50,000 ac-ft and 17,000 ac-ft, respectively. In Alternative 2, these supplies are assumed to be transferred. Alternative 4 assumes that these supplies support expansion of service into the SOI. Alternative 3 assumes that the firm quantity is transferred, and the variable quantity supports expansion of service into the SOI.

Evaluation Results The detailed Financial Model analyzed various strategies for viably supporting each programmatic alternative. This analysis, in conjunction with significant public and Board interaction, led to the selection of Alternative 3 as the Best Apparent Alternative. This alternative maximized improvements in the district, provided for moderate expansion into the SOI, most strongly supported all the WRP's goals, and kept water rates at a favorable level. Following Board endorsement, Alternative 3 was termed the Proposed Program.

THE PROPOSED PROGRAM

The Proposed Program included numerous specific components, including OID policy, organization, and facility improvements. To comply with the California Environmental Quality Act (CEQA), OID prepared a Programmatic Environmental Impact Report (PEIR) to address the potential environmental impacts resulting from implementation of the Proposed Program. The PEIR provided a broad, programmatic analysis of the potential physical and biological consequences of implementing the Proposed Program. The PEIR also identified mitigation where determined necessary to reduce the level of impact from actions associated with the Proposed Program. The Proposed Program components consist of the following:

- Flow control and measurement projects
- Canal Reshaping and Rehabilitation Program
- Groundwater Well Program
- Main Canals and Tunnels Improvements Program
- Pipeline Replacement Program
- Regulating Reservoir and Woodward Reservoir Intertie
- Turnout Replacement Program
- Drainwater Reclamation Program
- Surface water outflow management projects
- Water transfers
- Expansion into the SOI

CONCLUSION

The WRP was a comprehensive study of the district and surrounding region. The plan identified critical areas for improvements and practical funding options. During development of the WRP, several data sources were reviewed, and significant analysis was completed. Key components of the WRP development included public outreach and involvement, a water resources inventory of

current operations, an infrastructure assessment of existing infrastructure, an assessment of the current level of service, an assessment of on-farm irrigation systems, and an evaluation of land use trends and land use forecasting. The information obtained from these studies was used to develop and project current and future water use within the district. To facilitate this analysis, a systemwide operational water balance model was developed to simulate the primary water components of OID's overall system. Information derived from the WBM was used to develop alternatives to address changes in land use, regulatory changes, available resources, and customer-driven issues and concerns. The outcome from the alternative evaluation process is the Proposed Program, which provides the following expected benefits:

- Protects OID's water rights
- Enhances customer service
- Rebuilds, modernizes, and expands OID's system infrastructure
- Protects the future water supply needs of local urban areas
- Keeps water rates affordable through a balanced effort of water transfers and expansion into OID's SOI
- Enhances local water supplies by 30,000 ac-ft
- Provides 17,000 ac-ft of supplies to new customers in the SOI
- Allows 50,000 ac-ft of water transfer
- Substantially increases water supply reliability and meets OID service needs in worst-case drought