Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT



Fiscal Year 2013/14 Operating and Capital Program Budget
Volume 2: Ten-Year Capital Improvement Plan

INLAND EMPIRE UTILITIES AGENCY

OPERATING AND CAPITAL PROGRAM BUDGET FISCAL YEAR 2013/14, VOLUME II

TEN-YEAR CAPITAL IMPROVEMENT PLAN

Inland Empire Utilities Agency

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EXECUTIVE SUMMARY

I E U A

TYCIP

TEN-YEAR CAPITAL IMPROVEMENT PLAN

INTRODUCTION

Each year, the Board of Directors of the Inland Empire Utilities Agency (the Agency) adopts a Ten-Year Capital Improvement Plan (TYCIP) based on the growth and regulatory requirements, existing asset management needs, and comments and recommendations from the Regional Technical and Policy Committees. Pursuant to the terms of the Regional Sewage Service Contract, the TYCIP includes wastewater flow forecasts and a description of planned capital projects, including any necessary facility expansions, major asset repair and rehabilitation, and major capital equipment purchases. The TYCIP also provides a summary of the capital costs and capital financing plans associated with the following Agency programs:

- Regional Wastewater Capital (RC)
- Regional Wastewater Operations (RO)
- Recycled Water (WC)
- Non-reclaimable Wastewater (NC)
- Groundwater Recharge (RW)
- General Services (GG)

These programs correspond to the Agency's major budgetary funds. Encompassed within the RC and RO funds are the Agency's programs for energy management and organics management. This TYCIP also describes the Agency's major planning efforts and water resources management programs, including water supply and water efficiency programs. Project expenses associated with the planning and water resources management programs are usually charged as special projects within the Agency's budget, rather than as capital projects.

The Fiscal Year (FY) 2013/14 TYCIP covers FY 2013/14 through FY 2022/23. It comprises Volume 2 of the Agency's Adopted Budget for FY 2013/14. Volume 1 of the Adopted Budget provides additional details on the Agency's capital programs and also details the projected operating and financing costs.

Two major themes of the FY 2013/14 TYCIP are: (1) the need for maintenance, repair and replacement (R&R) of aging equipment and facilities; and (2) the need for expansion of the Regional System to meet future growth. Considering the age and condition of the Agency's facilities and infrastructure, appropriate funding of R&R as well as routine preventive maintenance is critical to ensure the reliability and quality of the services that the Agency is committed to provide to its customers. Therefore, of the $415 million in projected expenditures in the TYCIP, a major portion is for R&R. At the same time, the Agency is preparing for future growth and has budgeted funds for expansion of facilities and capacity in the southern service area, where growth is expected to be the highest.

The combination of these needs has resulted in a proposed FY 2013/14 TYCIP of $415 million, which is approximately 82 percent higher than the FY 2012/13 TYCIP of $228 million. Program budgets and additions to the proposed FY 2013/14 TYCIP are listed by fund in Table ES-1 (below).

TABLE ES-1: FY 2013/14 – FY 2022/23 TYCIP BUDGET BY FUND

FUND	TOTAL
General Services (GG)	**$10,692,006**
Existing Projects	$7,730,006
New Projects	$2,962,000
Groundwater Recharge (RW)	**$610,000**
Existing Projects	$150,000
New Projects	$460,000
Non-Reclaimable Wastewater (NC)	**$23,589,120**
Existing Projects	$18,583,120
New Projects	$5,006,000
Recycled Water (WC)	**$108,005,383**
Existing Projects	$76,960,383
New Projects	$31,045,000
Regional Wastewater Operations (RO)	**$115,172,280**
Existing Projects	$24,844,780
New Projects	$90,327,500
Regional Wastewater Capital (RC)	**$156,826,225**
Existing Projects	$29,012,225
New Projects	$127,805,000
Total FY 13/14 TYCIP Budget	**$414,895,014**

Beginning in FY 2008/09, the Agency implemented several cost-reduction initiatives in response to the region's economic downturn. As part of the cost-containment effort, R&R projects deemed to be non-critical at that time were deferred. Since the deferment, there has been an increase in the number of failures and emergency repairs. The costs of emergency projects are generally higher than the costs of scheduling and carrying out R&R through an Asset Management Program.

Operational reliability is a cornerstone for meeting the Levels of Service (LOS) the Agency has committed to provide to its customers. Therefore, over the next ten years, approximately $115 million in R&R projects have been budgeted in the RO fund to uphold the operational reliability of the Agency's regional facilities. Approximately $10 million is included in budget for the first year. Table ES-2 (below) lists some of the major R&R projects in the proposed TYCIP.

The strengthening of local economic conditions makes it even more important for the Agency to proactively improve existing facilities in order to continue to meet the LOS commitments. A rise in new development activity increased new equivalent dwelling unit (EDU) connections in FY 2011/12. As of April 2013, the number of new EDU connections in FY 2012/13 was 1500 units,

which already exceeds the annual budget expectations. The total new EDU connections are projected to reach 1,700 units by the end of FY 2012/13.

TABLE ES-2: FY 2013/14 RO FUND MAJOR CAPITAL PROJECTS

Project Name	Total TYCIP Cost $Thousands	FY 2013/14 Cost $Thousands
SCADA Enterprise System Upgrade	$9,850	$850
RP-1 Secondary Clarifier Asset Rehab	$5,300	$800
Montclair Lift Station Upgrades	$2,184	$1,600
RP-2 Dome Replacement	$1,800	$1,800
CCWRF Secondary Clarifier Rehab	$650	$650
RP-1 Asset Replacement	$500	$500

This trend is expected to continue, with member agencies projecting 33,495 new connections over the next ten years. Nearly half, or 16,050, new EDU connections are expected to occur in the southern service area within the City of Ontario, primarily as a result of the New Model Colony development. The Agency is committed to ensuring adequate facilities and capacity to treat the wastewater for the projected number of new EDUs. However, historically, the member agencies projections have tended to be higher than actual development. Therefore, for budgeting and financing purposes, the Agency has used a more conservative estimate of 21,700 new EDUs to align with the economic outlook in the service area.

Even using the more conservative budgetary estimates of EDU growth, the wastewater flow tributary to the southern service area is expected to exceed 80 percent of the available liquids and solids treatment capacity by the end of the ten years. To meet the future capacity needs, the FY 2013/14 TYCIP includes costs for the relocation of the solids handling facility from Regional Water Recycling Plant No. 2 (RP-2) to Regional Water Recycling Plant No. 5 (RP-5) and the expansion of the liquids and solids processing at RP-5.

OVERVIEW OF THE INLAND EMPIRE UTILITIES AGENCY

The Inland Empire Utilities Agency is a wholesale distributor of water and recycled water, and provides regional wastewater treatment services for a 242-square-mile area of western San Bernardino County, serving approximately 830,000 people.

The Agency has four regional water recycling plants (RWRPs): Regional Water Recycling Plant No. 1 (RP-1), Regional Water Recycling Plant No. 4 (RP-4), Regional Water Recycling Plant No. 5 (RP-5), and Carbon Canyon Water Recycling Facility (CCWRF). In addition, the Agency has three facilities where the biosolids produced at the water recycling plants are handled: RP-1 Solids Handling Facility, RP-2 Solids Handling Facility, and the Inland Empire Regional Composting Facility.

WATER RESOURCES MANAGEMENT

Chino Basin, one of the largest groundwater basins in Southern California, is located within the Agency's service area. Groundwater is the predominant source of water for domestic, industrial and agricultural use, accounting for 60 to 70 percent of the total water supplies for the Agency's service area. Additional water supplies come from imported water purchased from the Metropolitan Water District of Southern California (MWD) (20-30 percent), surface water from the San Gabriel Mountains (5-12 percent), and recycled water and desalted groundwater (1-13 percent combined).

As a regional wholesaler, the Agency is involved in regional planning activities with numerous local, regional, and state entities, including the Chino Basin Watermaster (CBWM), San Bernardino County Flood Control District, Chino Basin Water Conservation District, local water and wastewater retail agencies, Santa Ana Watershed Project Authority, MWD, the Regional Water Quality Control Board, and the Department of Water Resources. The planning documents that have emerged from these groups have been used to create an integrated water resources management program which encompasses the Agency's imported water, wastewater, recycled water, energy generation, salinity management, groundwater recharge, groundwater conjunctive use, stormwater management, water use efficiency, and organics recycling programs.

Despite the tremendous growth in the region over the previous ten years, total water demand for urban and agricultural uses in FY 2012/13 was virtually the same as demand in FY 2002/03, with water use increasing by only 1,000 acre-feet per year (AFY), from 252,000 AFY to 253,000 AFY[1]. About 90 percent of the water demand was for urban use (residential, commercial, industrial and institutional) and 10 percent for agricultural use. However, based on the 2010 Urban Water Management Plans (UWMPs) of the Agency's individual member agencies, future water demand within the Agency's service area over the next ten years is expected to increase by approximately 9 percent, from 253,000 AFY to about 277,000 AFY[2].

Based on the member agencies' UWMPs, under their current growth and demand projections, future available water supplies are projected to meet the anticipated demands. Urban water supplies within the service area are projected to increase up to 83,000 AFY-- from 272,000 AFY in FY 2012/13 to 355,000 AFY in FY 2022/23. Based on the UWMPs of the member agencies, the increase in supplies is expected to come from a number of areas:

- Groundwater production is expected to increase by approximately 52,000 AFY (pumping from Chino Basin, including desalters, and other local groundwater basins).
- Recycled water is expected to increase by approximately 16,000 AFY.

[1] An acre-foot of water is approximately the amount of water that would cover a football field one foot deep and represents the amount of water a family of four is estimated to consume in one year.
[2] The water demand forecasts used in preparation of the Agency's 2010 UWMP are based upon information provided by the respective member agencies.

- Future use of imported water is expected to increase as much as 29,000 AFY, although the availability of imported water supply is uncertain as a result of Delta cutbacks and shifting state legislation.
- Water Use Efficiency (WUE) programs are expected to play an increasing role in meeting future water supply needs.

WUE programs are a significant part of the Agency's Water Resources Program. Based on the Agency's Long-Term Water Use Efficiency Business Plan (2010), the water use reduction goal for the Agency's service area is 5,157 acre-feet by the year 2015 and 15,020 acre-feet by 2020. The Agency expects to exceed both the 2015 and 2020 targets through regional and local actions utilizing:

- WUE Active Programs – offering customers a program portfolio with cost-effective water efficiency measures;
- WUE Passive Policy Initiatives – including building codes and landscape ordinances; and
- Recycled Water Supply – augmenting potable water demand by increasing the use of recycled water.

WASTEWATER FLOW PROJECTIONS

The Agency performs an annual ten-year wastewater flow survey of its member agencies in order to ensure that there is adequate treatment plant capacity and to anticipate the need for future expansion projects. As described in Chapter 3, in FY 2011/12 and the first half of FY 2012/13, the average raw wastewater flow treated was 53.2 million gallons per day (MGD). Since FY 2006/07, the Agency's wastewater flows have declined by approximately 10 percent. However, the number of new connections to the system is increasing as building activity continues to rise. By FY 2022/23 the Contracting Agencies are expecting an additional 33,495 connections, increasing utilization of existing facilities by 65 million gallons per day. Approximately half of this increase is anticipated to come from the New Model Colony development in the City of Ontario, which will increase sewage production in the RP-5 service area by approximately 4.6 MGD. The RP-1 and RP-4 service areas are projected to have increased flows of about 2.7 MGD and 1.1 MGD respectively, while the CCWRF service area is projected to experience a marginal increase of approximately 0.6 MGD.

As a result, at the end of the ten years, the overall treatment plant capacity utilization may reach as high as 76 percent based on the member agencies' growth projections and the 270 gallons per day per equivalent dwelling unit (gpd/EDU) capacity requirement in the Agency's Regional Sewer Service Contract. This is viewed as a high-end estimate as explained in Chapter 3. Therefore, the Agency's treatment plant capacity is expected to be adequate for the projected flows for the next ten years. However, per Regional Water Quality Control Board (RWQCB) order, if capacity utilization exceeds 75 percent, the Agency is required to develop an expansion plan which must be approved by the Agency Board of Directors and submitted to the RWQCB.

The Agency will update the 2002 Wastewater Facilities Master Plan in FY 2013/14. This effort will be integrated with plans for recycled water and energy management. The Wastewater Facilities

Master Plan Update will consider regional growth patterns and make recommendations on future plans for liquids and solids treatment capacity at RP-5 and RP-2. It will also address improvements at RP-1, CCWRF and RP-4 to provide adequate nutrient removal and odor control necessary to meet current and future needs.

REGIONAL PROGRAM CAPITAL IMPROVEMENT PLAN

The Agency's Regional Program encompasses the activities associated with construction and replacement of the Agency's wastewater, energy generation, and solids handling facilities. It includes the Regional Sewerage System consisting of the sewage collection trunk lines and pump stations, the wastewater treatment and disposal facilities, the recycled water production facilities, and also the facilities for generating energy and recycling biosolids. As mentioned in the introduction, the repair and replacement of aging equipment and facilities were deferred beginning in FY 2008/09 as part of the Agency's cost containment efforts. However, escalating numbers of failures and emergency repairs has prioritized R&R in the FY 2013/14 TYCIP.

The recent increase in building activity and new connections has also introduced the need for expansion and improvement of existing facilities to meet the anticipated higher future wastewater flows. The raw wastewater flows tributary to RP-5 and CCWRF are projected to reach 80 percent of available liquids treatment capacity within ten years even under a conservative growth scenario. Besides triggering the need for liquids capacity expansion, this will impact the RP-2 facility which handles the solids from both RP-5 and CCWRF. RP-2 is an aging facility where reliability issues have increased in recent years and equipment repair, replacement, and rehabilitation costs are likely to escalate. With the plant approaching its capacity limit, the Agency is examining the possibility of relocating the solids handling facilities to RP-5 rather than investing substantial capital at RP-2 for equipment replacement and expansion. As a "placeholder" in the budget for the needed capital projects to address the RP-5 liquids and solids processing expansion, the TYCIP includes $90.5 million in FY 2018/19 through FY 2022/23.

COMPREHENSIVE ENERGY PLAN

As described in Chapter 5, the Agency's comprehensive Energy Management Plan has a specific focus on energy independence from the electrical power grid during the peak energy use/pricing period (noon to 6:00 PM) by the year 2020 or earlier. The FY 2013/14 TYCIP is focused on maximizing existing energy generation, as well as identifying and implementing new energy efficiency programs at the Agency's facilities. The Agency currently uses approximately 75,000 Megawatt hours (MWh) of electrical energy annually at its regional water recycling plants and other facilities at an annual cost of about $10,000,000. Currently, energy costs for these facilities account for approximately 25 percent of the non-labor operation and maintenance (O&M) costs.

The Agency has developed an Energy Management Plan which provides planning and implementation guidelines to reduce reliance on the commercial power grid. The cornerstones of the plan are energy conservation and efficiency, renewable energy, energy purchasing, project financing, and regulatory and legislative advocacy.

Key components of energy conservation and efficiency planning include energy usage evaluation, such as sub-metering; operational optimization through energy auditing to identify energy intensive processes; capital upgrades to install high-efficiency pumps and motors, and extensive use of variable frequency drives; and demand response.

The Agency has made significant strides by investing in renewable energy. In an effort to diversify and maximize renewable energy generation, the Agency installed 3.5 megawatts (MW) of solar power in 2008, a 1 MW wind turbine in 2011 and a 2.8 MW biogas fuel cell in 2012. Combined, these projects have provided more than 50% of peak energy demand Agency wide, net-zero energy consumption at RP-1 during winter months, potential net-zero energy consumption at RP-4 during winter months, and energy export at RP-2. From 2009 to 2012, the Agency's renewable installations have generated approximately 31,300 MWh of clean energy, reducing greenhouse gas emissions by 34,300 metric tons; the equivalent of removing 7,100 passenger vehicles from the road for one year.

To fulfill the energy purchasing part of the plan, the Agency has entered into a Direct Access service and power purchase agreement at RP-1, RP-2, RP-4, and the CCWRF. Direct Access services provide stabilized energy prices, allowing for greater price predictability and providing considerable savings to the Agency, especially during the summer months.

RECYCLED WATER PROGRAM

The Agency's regional recycled water system consists of a looped pipeline system connecting all four RWRPs. To provide a fully-integrated recycled water distribution, the Agency's Recycled Water Master Plan (January 2002) identified plans for construction of over 50 separate projects consisting of pipelines, pump stations, and reservoirs. These projects were grouped into priorities and categorized into four project areas: the Northeast, Northwest, Central, and Southern Areas. Highlights of the implementation status are as follows: The Northeast Area projects (Phase I) were completed in September 2010; the Northwest Area projects were completed in the spring of 2012; the Southern Area projects are under construction and scheduled for completion in August 2014; and the Central Area/Wineville Recycled Water Pipeline Extension Project is in the final design stage and scheduled for completion in the winter of 2014. Construction of a recycled water turnout to Turner Basins Groundwater Recharge Facility is also in construction and is scheduled to be complete in September 2013.

A key initiative for the Agency continues to be to optimize the beneficial reuse of recycled water and provide a cost-effective and reliable alternative to imported water for the region. The Agency has tripled recycled water connected demand since FY 2006/07. As of February 2013, the Agency has achieved a connected recycled water demand of 43,839 AFY. Total recycled water sales have tripled as well. As of FY 2011/12, recycled water sales were 29,240 AFY, consisting of 20,606 AFY for direct use and 8,634 AFY for groundwater recharge. Based on current planning estimates, recycled water sales should reach 53,600 AFY by FY 2019/20, consisting of 32,600 for direct use and 21,000 AFY for recharge. The proportion of recycled water used for recharge is expected to increase from approximately 30% in FY 2011/12 to 40% by FY 2019/20.

The Agency has had outstanding success in securing state and federal grants and loans for the recycled water program. However, income to the Agency from sales of recycled water has not been high enough to support the recycled water program for the last five years. Therefore, dependence on RC fund loans has been required to maintain adequate funding and fund balances in the recycled water fund. Consequently, the role the recycled water program plays in the regional water management portfolio has to be re-evaluated and a revised, robust financial model needs to be developed to meet the future goals of the region. An updated Recycled Water Program Plan is currently under development that will be part of the Agency's FY 2013/14 Integrated Water Resources Plan.

GROUNDWATER RECHARGE SYSTEM

The joint recharge program partnership between CBWM and the Agency is described in the Optimum Basin Management Program (OBMP) Recharge Master Plan, Phase II Report (August, 2001). It is a comprehensive plan to increase artificial groundwater recharge within Chino Basin using stormwater, recycled water, and imported water. In July 2010, the original Recharge Master Plan was updated as part of CBWM's Peace II agreement. The updated plan evaluated potential methods of increasing groundwater recharge to the Chino Basin and categorized them based on relative cost per acre-foot of water. Since then, past infiltration rates have been used to update the potential recycled water recharge capacity.

Reuse of recycled water for groundwater recharge is a critical component of the OBMP and water supply plans for the region as it will increase the reliability of water supplies during dry years, and save $6 million to $9 million per year in imported water costs. The recharge of high-quality recycled water and high-quality imported and stormwater sources will play a key role in ensuring that Chino Basin groundwater quality objectives are met. Improvements in groundwater quality through recharge will also ultimately lower groundwater treatment costs throughout the region.

The capital project costs identified in the FY 2013/14 TYCIP for the Recharge Capital Program mainly involve capacity improvements and refurbishment at selected basins such as Turner and San Sevaine Basins for a total of approximately $3 million over ten years. CBWM is currently updating the Recharge Master Plan and Agency staff is working closely with CBWM staff to ensure that planning efforts are coordinated and appropriate for the Agency's service area.

NON-RECLAIMABLE WASTEWATER SYSTEM

The Agency's 2002 Salinity Action Plan showed the benefits of operating a Non-Reclaimable Wastewater System (NRWS) to export highly-saline industrial wastewater from the Agency's service area, rather than collecting it in the sewer system and treating it at the RWRPs. The cost savings to the Agency was estimated at approximately $43 million per year due to avoided treatment facilities. As a result, the Agency formed agreements with the County Sanitation Districts of Los Angeles County and the Santa Ana Watershed Project Authority (SAWPA) to utilize their brine lines to export high-strength and saline wastes to the coastal wastewater treatment plants that ultimately discharge to the Pacific Ocean.

The wastewater discharged to the NRWS consists mainly of industrial and groundwater treatment brines. Diverting saline wastewater to the NRWS instead of collecting it in the regional wastewater system has reduced the TDS levels in the Agency's recycled water by approximately 250 milligrams per liter (mg/L). Brine from the Chino Basin groundwater desalter facilities is also discharged to the NRWS. The NRWS exported approximately 36,674 tons of salt to the ocean in FY 2012/13 alone.

In order to keep additional salt from the wastewater systems, the Agency developed an *Automatic Water Softener Removal Rebate Program* that was launched in September 2008. As of February 2013, over 575 residents have participated in the Self-Regenerating Water Softener Rebate Program keeping approximately 132 tons of salt per year out of the Regional system. As a result of this program, an estimate of 11 AF of water has been saved each year. The Agency expects to avoid an estimated $430 million in future costs over the next ten years as a result of the full implementation of the NRWS.

In the FY 2013/14 TYCIP, the ten-year projected cost for capital projects to maintain and improve the NRWS is $26.7 million. Annual capital expenditures are relatively low as a result of the good condition of the NRWS, which allows for improvements to be completed quickly. In addition, on-going cleaning efforts will be supplemented with closed-circuit television inspection of the pipe after cleaning, reducing the amount of emergency repairs or failures that the system may have, and will help ensure that the State-mandated Wastewater Discharge Requirements are met.

1.0 INTRODUCTION

1.1 Background

The Inland Empire Utilities Agency (Agency) supplies imported and recycled water and provides wastewater treatment services for a 242-square-mile region of western San Bernardino County. Industrial and municipal wastewater collections are provided through regional wastewater interceptors and two non-reclaimable wastewater pipeline systems. Recycled water is produced at four regional water recycling plants: Regional Water Recycling Plant No. 1 (RP-1), Regional Water Recycling Plant No. 4 (RP-4), Regional Water Recycling Plant No. 5 (RP-5), and Carbon Canyon Water Recycling Facility (CCWRF).

In addition, the Agency has three facilities where the biosolids produced at the water recycling plants are handled: RP-1 Solids Handling Facility, RP-2 Solids Handling Facility, and the Inland Empire Regional Composting Facility (IERCF)[1]. The Agency also produces energy from biogas, solar, and wind generation at its regional facilities and produces biosolids compost the IERCF.

> "The mission of the Agency is to supply imported and recycled water; collect, treat,and dispose of wastewater; and provide other utility-related (renewable electrical energy, compost) services to the communities it serves.The Agency strives to provide these services in a regionally planned, managed, and cost-effective manner."

The Agency provides sewage utility services to seven Contracting Agencies under the Regional Sewer Service Contract:

1. City of Chino
2. City of Chino Hills
3. Cucamonga Valley Water District (CVWD)
4. City of Fontana
5. City of Montclair
6. City of Ontario
7. City of Upland

Figure 1-1 on the following page depicts each Contracting Agency's sphere of influence within the Agency's service area.

[1] The Agency also has a solids handling facility at RP-5, which will provide future capacity when wastewater flows increase and biosolids production exceeds the current capacity at RP-1 and RP-2 (in approximately 10 years). In the interim, the RP-5 Solids Handling Facility is being used to recycle other forms of organic waste, such as manure and food wastes, to generate biogas that will be used to produce energy.

FIGURE 1-1: CONTRACTING AGENCIES

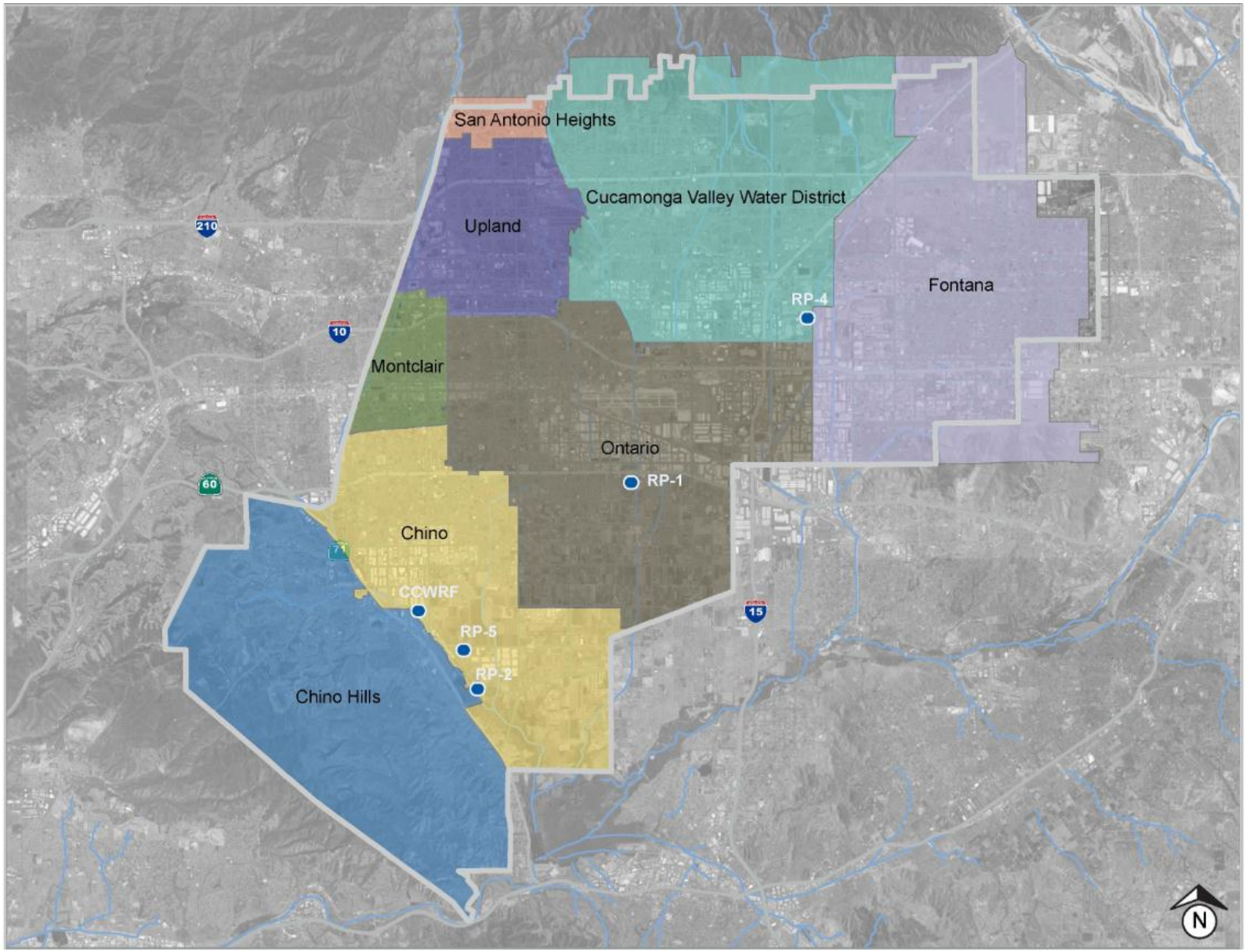


Figure 1-1 depicts the Agency's service area, each Contracting Agency's sphere of influence, and the Agency's regional water recycling facilities.

In addition to the Contracting Agencies, the Agency provides wholesale imported water from the Metropolitan Water District of Souther California(MWD) to seven retail agencies[2]:

1. City of Chino
2. City of Chino Hills
3. Cucamonga Valley Water District (CVWD)
4. Fontana Water Company
5. Monte Vista Water District (MVWD)
6. City of Ontario
7. City of Upland

1.2 The Inland Empire Utilities Agency's Mission

The Agency, its Board of Directors, and staff strive to provide reliable, cost-effective water utility services which protect and enhance the environment while fostering economic development. The Agency is focused on providing three key products at its wastewater facilities: (1) recycled water to drought-proof the service area; (2) high-quality compost made from recycled materials; and (3) electrical energy generated from renewable sources. The Agency provides these services in close coordination with its member agencies and strives to maintain a high level of public awareness. This Ten-Year Capital Improvement Plan, beyond being a requirement of the Regional Sewage Service Contract between the Agency and its Contracting Agencies, is an additional means of communicating with the public concerning priorities for future projects and capital spending requirements needed to meet future demands in the service area.

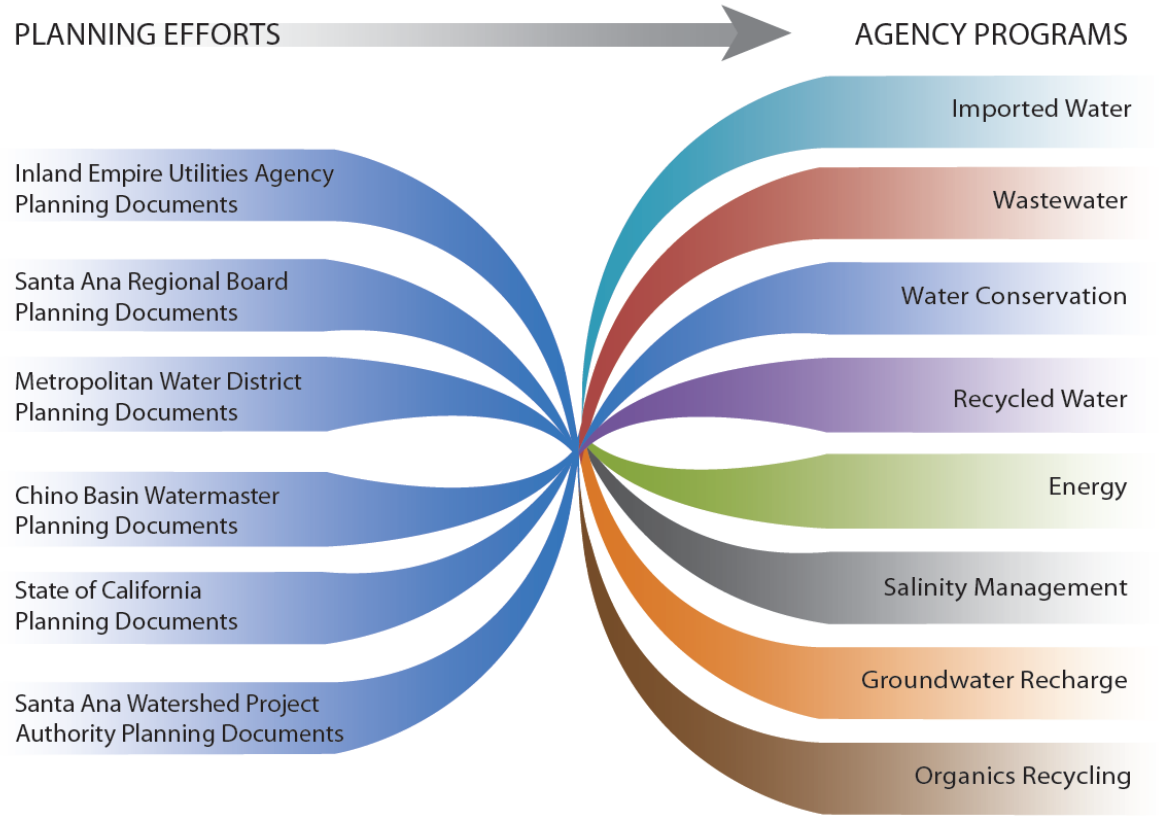
The residents of the Chino Basin area voted to form the Agency (originally incorporated as the Chino Basin Municipal Water District) in June 1950 to bring imported water to the region. The Agency is governed by a five-member Board of Directors (Board), elected to represent individual areas or Divisions. To bring imported water to the region, the Agency became a member of MWD in 1950. The Agency joined the Santa Ana Watershed Project Authority (SAWPA) in 1972 to participate in regional watershed-scale planning. The Agency also currently sits on the Board of Directors for MWD, SAWPA, and Chino Basin Watermaster (CBWM).

1.3 Integrated Water Resources Management

The Agency collaborates with SAWPA, MWD, and the Regional Water Quality Control Board to develop regional planning documents. The Agency also works with state agencies, such as the Department of Water Resources and CalEPA, in the development of State of California planning documents. The water resources management program in the Chino Groundwater Basin is closely coordinated with the CBWM, the San Bernardino County Flood Control District, the Chino Basin Water Conservation District, and local water and wastewater retail agencies. Figure 1-2 below illustrates how the various regional and state planning documents are tied to the Agency's capital and operational programs. Water resources management strategies are discussed in further detail in Chapter 2.

[2] San Antonio Water Company is often referred to as a member agency even though they do not purchase water from IEUA because they fall within the Agency's service area and also participate in regional water conservation programs and task forces with the other listed agencies.

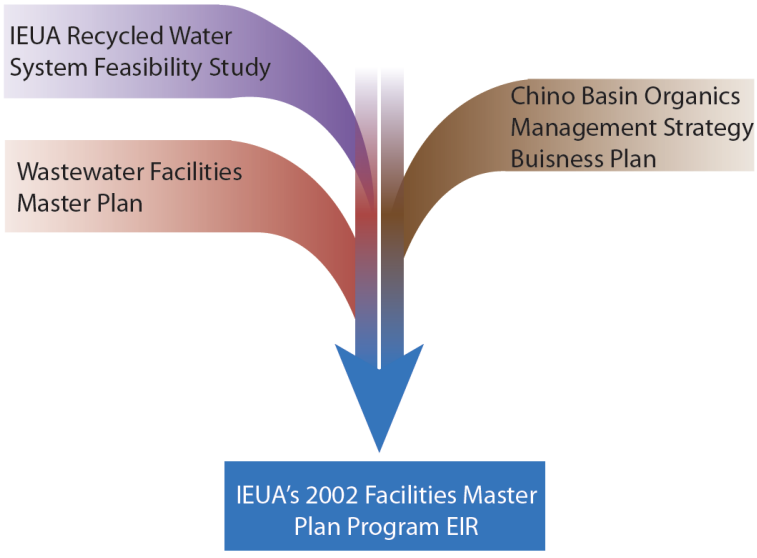
FIGURE 1-2: COORDINATED REGIONAL PLANNING PROCESS



1.4 Facilities Master Planning

The Agency adopted its Facilities Master Plan Program Environmental Impact Report (FMP PEIR) on June 28, 2002. As illustrated in Figure 1-3, the FMP PEIR links together three major, fundamental master planning documents: the Recycled Water System Feasibility Study (dated January 2002, adopted August 2002), the Chino Basin Organics Management Strategy (dated May 2001, adopted August 2002), and the Wastewater Facilities Master Plan (dated April 2002, adopted August 2002). These plans are often referred to as the Recycled Water Master Plan, the Organics Management Master Plan and the Wastewater Facilities Master Plan, or collectively as the Facilities Master Plans. In addition, the Chino Basin Watermaster completed the Optimum Basin Management Plan

FIGURE 1-3: FACILITIES MASTER PLAN EIR PROCESS

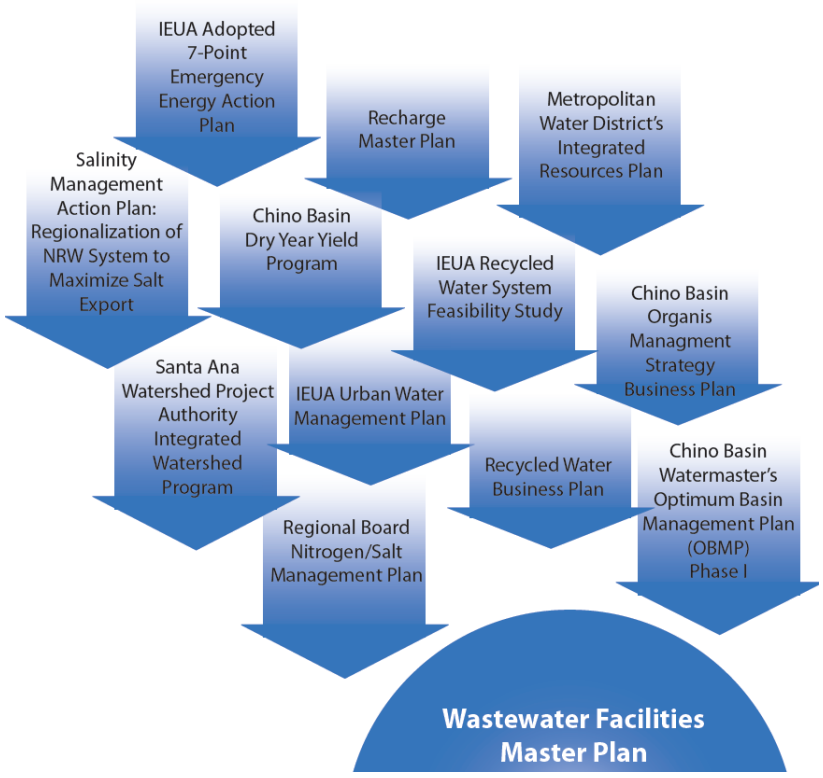


(OBMP) Phase I report in August 1999 and the IEUA Board certified the OBMP Program Environmental Impact Report (OBMP PEIR) in July 2000. Together with the Facilities Master Plans, these documents make up the foundation for the Agency's major programs.

1.4.1 Wastewater Facilities Master Plan

The Agency's Wastewater Facilities Master Plan (WFMP) was adopted in August of 2002 with the approval of the Regional Technical and Policy Committees. The WFMP integrated all of the Agency's related planning activities into one comprehensive document in order to address the overall effects of the projects contemplated by the Agency. This comprehensive planning process is illustrated in Figure 1-4.

FIGURE 1-4: WASTEWATER FACILITIES MASTER PLAN DEVELOPMENT



Some of the 2002 WFMP's goals were to: (1) identify facilities that need to be replaced or expanded in the near and long-term to meet projected growth and wastewater flow needs; (2) develop a cost-effective, phased implementation plan; (3) determine space and location needs for additional or expanded treatment facilities; (4) develop strategies for flow diversion between service areas to optimize existing treatment capacity utilization; and (5) maximize water recycling, energy efficiency, and organics recycling. The WFMP included plans for the expansion of wastewater facilities to meet the needs of growth within the service area through 2050.

Some of the major projects identified in the 2002 WFMP which have subsequently been implemented include:

- Expansion of wastewater capacity at RP-4 from 7 to 14 million gallons per day (MGD);
- A new, 16-MGD wastewater facility at RP-5;
- Elimination of wastewater treatment at RP-2, leaving RP-2 as a solids-handling facility only;
- A state-of-the art composting facility adjacent to RP-4 that handles biosolids and green waste;
- A new, LEED-Platinum administration building and adjacent wetlands educational park;
- Organics management facilities for handling biosolids, manure, and food waste in the southern service area;
- Numerous upgrades and odor control facilities at RP-1 and CCWRF; and
- Expansion of the recycled water system to include additional recycled water pump stations, pipelines, and reservoirs in the northeast, northwest and central service areas.

1.4.2 Organics Management Master Plan

The Chino Basin Organics Management Business Plan (Organics Management Master Plan) developed a strategy to manage the organics in the Chino Basin, including biosolids, dairy animal manure, and composting of local community green waste material. The Organics Management Master Plan was published in May 2001, along with a Project Report containing ten Technical Memoranda which provided the background and basis for the recommendations in the Business Plan. The Agency's Board of Directors certified the Programmatic EIR for the Organics Plan in June 2002 and adopted the Organics Management Master Plan together with the Wastewater Facilities Master Plan and Recycled Water Master Plan in August 2002. The Organics Management Master Plan presented specific short-term and long-term recommendations as well as outlined the steps and considerations that must be addressed when implementing projects consistent with the Agency's goals and mission.

The Organics Management Master Plan, as an integral tool for implementing the CBWM's Optimum Basin Management Plan (OBMP) includes two key initiatives. The first is a comprehensive renewable energy reliability program, and the second is a local organics recycling program. Implementation of these initiatives advances one of the paramount goals of the Organics Management Master Plan: protection of the Chino Groundwater Basin from infiltrating salts and nitrogen compounds from agricultural wastes. By implementing these programs, the Agency will be able to avoid the costly removal of those contaminants from groundwater.

As a major milestone for implementing the Organics Management Master Plan was the completion of the Inland Empire Regional Composting Facility (IERCF) in 2007. The IERCF allows the Agency to be self-sufficient regarding biosolids disposal, rather than being subjected to the uncertainties of other options. Alternative options, such as land application of biosolids, are unreliable as a result of shifting public opinion and the need to haul biosolids farther distances for disposal. Additionally, many alternatives are increasingly expensive because of increasing contract costs, high energy costs, air pollution regulations, and the lack of nearby disposal facilities or markets.

The IERCF is designed to process over 200,000 tons-per-year of recycled wood wastes and biosolids producing over 250,000 cubic yards of high-quality compost each year. The facility began daily operations in April 2007 and ramped up to full capacity in late 2008 receiving nearly 600 tons per day

of biosolids and recycled wood waste products. Compost, which is created and marketed as SoilPro® Premium Compost, is sold as a soil conditioner that improves water retention, resulting in better plant growth and reduces water requirements. In order to receive biosolids year-round, a compost storage facility was constructed to store compost during the winter season when compost demand is low.

1.4.3 Recycled Water Master Plan

The Agency prepared a Recycled Water Feasibility Study (Recycled Water Master Plan), adopted by the Board of Directors in August 2002, which delineated the Agency's recycled water program through the year 2020. In 2004, the Agency initiated development of the Regional Recycled Water Program Implementation Plan, which updated information from the 2002 Recycled Water Master Plan. In 2005, the Implementation Plan identified additional future recycled water demand, primarily in the developing areas of the cities of Chino and Ontario. The Agency recognizes that water recycling is a critical component of an effective water resources management strategy. Over the years, recycled water has, and will continue to become a larger proportion of the overall water resources supply portfolio in the Chino Basin by "drought proofing" the Basin and providing a lower-cost water supply to residents.

The 2002 Recycled Water Master Plan and the 2005 Implementation Plan confirmed that interconnection of all four of the Agency's regional treatment plants in a looped distribution system would maximize beneficial uses of recycled water, increase system reliability and flexibility, and provide other operational and cost-reducing benefits. As discussed in Chapter 6, major portions of the looped system have been completed and other portions are under design and construction. The looped system both allows more customers to be served, and provides the flexibility to release surplus recycled water to spreading basins throughout the Chino Basin for groundwater recharge.

According to the 2002 Recycled Water Master Plan, ultimately the use of recycled water would exceed 70,000 acre-feet per year (AFY) and over 1,700 customers will be connected to the regional recycled water distribution system. The 2005 Implementation Plan later identified plans for phased construction of a backbone distribution system over the course of ten years to serve 93,000 AFY of recycled water to 1,200 of the largest customers, including 33,000 AFY for recharge. The current, revised expectations for recycled water use, based on the Agency's 2010 Urban Water Management Plan, are discussed in Chapter 7. The Agency's goal is to use as much recycled water for local beneficial uses as is economically achievable and replenish the Chino Groundwater Basin.

During FY 2007/08, in response to potential water supply shortages and reductions in MWD imported water supplies, the Agency accelerated implementation of the recycled water program deliveries by committing to a Recycled Water Business Plan. The Recycled Water Business Plan (adopted in December 2007) was intended to be a "short-term" action-oriented document that would be updated periodically to adjust the goals, timelines, and projects to expand the use of recycled water. It also addressed program funding, which was to be accomplished by a combination of state and federal grants, State Revolving Fund Financing and MWD rebates. The Recycled Water Business Plan had an initial goal of increasing the total recycled water connected demand to 50,000 AFY. The Agency now anticipates reaching that goal in FY 2019/20. The Agency intends to complete an update of the Recycled Water Business Plan in FY 2013/14.

1.5 Optimum Basin Management Plan

The Optimum Basin Management Plan (OBMP) for the Chino Basin was prepared by the court-appointed Chino Basin Watermaster (CBWM) to address groundwater quality problems and identify groundwater management opportunities that should be pursued to maximize basin resources. The OBMP Phase I Report was completed by Wildermuth Environmental, Incorporated for CBWM on August 19, 1999 and the OBMP Recharge Master Plan Phase II Report was completed by CBWM in August 2001. The OBMP reports recommended studies, programs and facilities to further the development of long-term, cost-effective, reliable potable water supplies while enhancing and protecting the Basin yield, quality of the Basin groundwater aquifers, and downstream uses. The OBMP provided a framework for developing a cooperative groundwater management program among agencies which use, manage or regulate water resources in the Basin. To facilitate implementation of the OBMP, an agreement (referred to as the "Peace Agreement") was signed by CBWM, IEUA, Orange County Water District, and various other stakeholders on June 29, 2000. The OBMP Program EIR was certified on July 12, 2000, with the IEUA acting as the lead agency.

1.5.1 Optimum Basin Management Plan Phase I Report

The purpose of the OBMP was to develop a water quality and quantity based management plan for the Chino Groundwater Basin. The OBMP was intended to allow continued reliance on groundwater for beneficial uses within the basin, while minimizing demand for imported water, and encourage the beneficial use of the large, available storage space in the aquifer system. The OBMP Phase I Report addressed the need to develop additional water sources within the Chino Basin to meet future demands through water quality treatment, groundwater recharge, groundwater desalination, and water recycling programs. It has resulted in the design and construction of the looped pipeline recycled water system, storage reservoirs, and pump stations that connect the Agency's recycled water production facilities to customers and groundwater recharge basins. Construction and improvement of 18 groundwater recharge basins has also been completed, allowing for the conservation of stormwater, recycled water, and imported water in the Chino Basin Aquifer. The OBMP Phase I Desalter program has also been implemented and provides an additional 12 MGD of new groundwater desalination capacity. In addition, the MWD Dry Year Yield Program funded six new groundwater treatment facilities.

1.5.2 Recharge Master Plan

The OBMP included a comprehensive plan to increase artificial groundwater recharge within the Chino Basin using stormwater, recycled water, and imported water. As a component of the OBMP, the recharge program is described in the Recharge Master Plan, Phase II Report (August, 2001). In January of 2002, the IEUA Board of Directors approved the Recharge Master Plan Implementation Memorandum of Agreement between CBWM, Chino Basin Water Conservation District, San Bernardino County Flood Control District (SBCFCD), and the Agency. Members of these four agencies formed a Groundwater Recharge Coordinating Committee to implement the initial $40-million program entitled the Chino Basin Facilities Improvement Project (CBFIP).

In July 2010, CBWM completed and submitted the Chino Basin Groundwater Recharge Master Plan Update (Update) to the court. Two years later, in July 2012, CBWM completed and submitted the Implementation Plan of the Update to the court. The Implementation Plan included a revised assessment of demand, recharge capacity, and safe yield. It also identified preliminary opportunities for enhancing stormwater, recycled water, and imported water recharge through low impact development, new recharge projects, and integrated stormwater and supplemental water facilities. As part of the Implementation Plan, a Steering Committee was formed to further evaluate and refine the list of potential projects and develop a funding and execution plan. The Steering Committee is preparing an amendment to the 2010 Update with supplemental information and recommendations which will be submitted to the court by October, 2013.

1.5.3 Peace Agreements

To facilitate implementation of the OBMP, an agreement referred to as the "Peace Agreement" was signed by CBWM, IEUA, Orange County Water District, and various other stakeholders on June 29, 2000. The original Peace Agreement was updated to redefine future programs and actions required to implement the OBMP, based on nine years of experience and accomplishments. The "Peace II Agreement" was approved by the Court on December 21, 2007. The Agency served as the lead agency under CEQA for a focused Subsequent EIR for the OBMP, called the "Peace II SEIR." The Peace II SEIR was adopted in October 2010.

The Peace II Agreement provides, among other things, for "re-operation" and attainment of "hydraulic control" in the groundwater basin. Re-operation means the gradual increase in controlled overdraft of the Chino Groundwater Basin from 200,000 AF to 600,000 AF. Hydraulic control[3] ensures that the water management activities in the Chino North Management Zone will not impair the beneficial uses of the Santa Ana River downstream of Prado Dam. Both of these objectives will be achieved by expansion of the desalter program so that the groundwater pumping for the desalters will reach 40,000 acre-ft/yr and pumping for hydraulic control will occur in amounts and at various locations for the strategic reduction in groundwater storage (re-operation).

The final expansion of the desalter program will be accomplished with the installation and operation of the Chino Creek well field. This expansion will produce an additional 10,000 acre-ft/yr from the Desalter II facility. The new product water developed at Desalter II will be conveyed to the Jurupa Community Services District, the City of Ontario, and/or Western Municipal Water District.

1.6 Metropolitan Water District Integrated Resources Plan

The Integrated Resources Plan (IRP) is a long-term water resources strategy for MWD's six-county service area. The IRP is the blueprint that guides MWD's efforts to increase water supplies and lower demands through 2035. MWD's first IRP was developed in 1996 and updated in 2004.

MWD completed another IRP Update in 2010 which set a new course for water supply planning. The 2010 IRP Update built upon MWD's core resources and programs, added a supply buffer, and took an

[3] Hydraulic control is defined as the reduction of groundwater discharge from the Chino North Management Zone to the Santa Ana River to *de minimis,* or virtually safe quantities.

adaptive management approach to address the challenge of uncertainty. Inherent in the adaptive management approach is the ability to effectively respond to unforeseen water supply disruptions through cost-effective strategies that ensure water supplies and facilities are in place when needed.

The 2010 IRP Update:

- Maintained a core resource strategy that will meet demands through 2035 under foreseeable hydrologic conditions;
- Committed to additional resource actions as part of a supply buffer to ensure reliability under uncertain circumstances beyond foreseeable hydrologic conditions;
- Increased the regional goals for water-use efficiency, including recycling, in order to account for future uncertainty; and
- Established foundational, preparatory actions necessary to further develop options for alternative resources that may be needed in the future.

1.7 Metropolitan Water District Dry Year Yield Program

In accordance with the goals of the OBMP, in 2003, the Agency entered into an agreement with MWD, CBWM, and Three Valleys Municipal Water District to provide up to 100,000 acre-feet of groundwater storage in the MWD Storage Account in the Chino Basin as part of the Dry-Year Yield Program (DYY). The program provided for the extraction of up to 33,000 AFY. The Operating Parties under this Agreement were: City of Chino, City of Chino Hills, Cucamonga Valley Water District, City of Ontario, City of Upland, Monte Vista Water District, and Jurupa Community Services District. As part of the Program, MWD helped fund ion exchange plants that treat well water for removal of nitrate and salinity.

In June 2007, MWD agreed to fund $1.5 million for technical and environmental studies to expand the DYY Program beyond 100,000 acre-feet. The technical studies looked at the DYY program objectives and Chino Basin capabilities. The Chino Basin DYY Project Development Report, published by CBWM in December 2008, identified the facilities needed to expand the program, provided conceptual designs, and costs estimates for potential facilities development. The IEUA Board of Directors adopted a CEQA Mitigated Negative Declaration for the DYY Expansion Project on December 17, 2008. Due to cost and funding considerations, the facilities that would be needed to expand the program have not been built and the program remains at 100,000 acre-ft of storage capacity.

Since 2003, the DYY storage account has been filled and emptied in conjunction with MWD's surplus and shortage conditions. Although the storage account is currently empty, once the performance requirements of the existing agreement have been clarified, it is anticipated that the storage account will be filled and emptied at least twice more prior to the end of the agreement in 2023. This 200,000 AF will be a critical component to the region's water supply portfolio and reliability.

1.8 Metropolitan Water District Water Supply Allocation Plan

In 2008, MWD worked jointly with its member agency to develop a Water Supply Allocation Plan (WSAP). The WSAP includes the specific formulas for calculating member agency supply allocations

and the key implementation elements needed for administering an allocation should a shortage be declared. Ultimately, the WSAP has become the foundation for the urban water shortage contingency analysis required under Water Code Section 10632 and has been incorporated into MWD's Regional Urban Water Management Plan.

On April 14, 2009, the MWD Board implemented the WSAP, effective July 1, 2009. This decision came at a time when California was facing its third consecutive year of drought, the State Water Project 2009 Table A allocation was 20 percent and Governor Schwarzenegger had proclaimed a statewide water shortage emergency (February 26, 2009). The WSAP was in effect for two years before a relatively wet 2010 rainy season brought the region out of shortage and out of the WSAP. Since then, MWD has been able to put more water in storage than ever before (almost 3-million AF), helping to keep the region out of another shortage and WSAP in the near future.

1.9 Inland Empire Utilities Agency Drought Plan

Working together in response to MWD's WSAP, the Agency, its member agencies, Chino Basin Watermaster and the Chino Basin Water Conservation District, prepared the IEUA Drought Plan. The purpose of the IEUA Drought Plan is to implement the MWD WSAP according to these goals:

- Ensure equity and fairness throughout the Agency's service area;
- Avoid any payment of MWD WSAP or Dry Year Yield penalties to MWD;
- Recognize the Agency and/or MWD's investments in local supplies to "drought proof" the Agency's service area;
- Encourage additional local investments to further drought proof the economy, such as:
    - Enhanced Conservation
    - Recycled Water – Connect parks, schools and other landscapes
    - Interconnections to promote flexibility (Azusa Pipeline)
    - Increase Chino Desalter deliveries to the maximum
    - Groundwater Recharge (recycled water and capture of stormwater when available)
- Coordinate communication efforts throughout the service area; and
- Implement consistent with MWD WSAP and DYY contracts.

If and when the Agency is forced to implement its drought plan again, the service area is well-prepared for an extended period of water shortages as the result of earlier investments in recycled water, the Chino Basin Desalter, groundwater, and water use efficiency programs.

1.10 Comprehensive Energy Plan

In response to the uncertainty in energy pricing and supply experienced in the winter of 2000, the Agency adopted a Seven-Point Emergency Energy Action Plan in the early 2000's. Some of the goals of this plan were to:

- Maximize the efficiency and self-sufficiency of existing office and plant operations;
- Generate new local sources of energy and minimize external energy/fuel costs;

- Maximize operational flexibility of plants to "roll off" the electric grid and natural gas sources, particularly during peak usage periods; and
- Promote regional energy and water conservation programs.

Through this plan, the Agency has made major strides in becoming self-sufficient and gaining local control over long-term energy supplies, assisting both the region and California in meeting their energy needs.

The Agency's energy management strategy is evolving in response to both the volatility of the energy market and the new legislation (AB 32) governing greenhouse gas emissions. The Agency completed a Solar Power Project in 2008 which will account for up to about nine percent of its energy needs from renewable, non-polluting energy sources. The Agency's goal is to maximize the amount of power that is self-generated from renewable sources, which will help the Agency in its goal of peak power independence. To accomplish these goals, the Agency updated and expanded the Seven-Point Emergency Energy Action Plan into a Comprehensive Energy Plan (first presented to the Board on 11/12/08). The Comprehensive Energy Plan includes optimizing energy consumption at Agency facilities; increasing the production and use of digester gas; increasing self-generation capacity utilization; pursuing new technologies; and utilizing effective energy procurement strategies. The Comprehensive Energy Plan also addresses new regulations such as the South Coast Air Quality Management District Rule 1110.2 governing the ability to blend natural gas and biogas in engines.

1.11 Salinity Management Plan

The Agency and its contracting agencies are implementing a regional recycled water distribution system to serve recycled water for non-potable reuse and groundwater recharge. Salinity is a critical element of recycled water quality for recharge and many other uses. Reduced salinity will enhance the marketability of recycled water and help the Agency meet the goals of the OBMP and meet the groundwater quality objectives in the Regional Water Quality Control Board Basin Plan for the Santa Ana Region. Reduced wastewater salinity will also help the Agency to comply with effluent limitations for TDS in its wastewater discharge permits. The Agency developed a Salinity Management Action Plan in 2002. Some of the strategies that were identified included:

- Maximizing the use of the Agency's non-reclaimable wastwater (NRW) system by connecting more industries;
- Reducing the use of water softeners in the area to decrease saline flows into the regional water recycling plants; and
- Reducing the salt contributions from the Agency's treatment plant operations by optimizing the use of chemicals at the facilities.

As an outgrowth of the Salinity Management Plan, the Agency also developed an NRW Action Plan with extensive coordination and discussion with the Agency's Regional Technical and Policy Committees, the CBWM, and the Regional Board. The Agency has achieved substantial avoided costs and valuable benefits for the region as a result of implementation of the NRW Action Plan.

1.12 Regional Board Nitrogen/Salt Management Plan and Maximum Benefit Basin Plan Amendment

The Regional Water Quality Control Board, Santa Ana Region, (Regional Board) adopted amendments to the Water Quality Control Plan for the Santa Ana River Basin (Basin Plan) on January 22, 2004 incorporating a "maximum benefit" proposal recommended by the Agency and CBWM. The Maximum Benefit Basin Plan establishes new groundwater Total Dissolved Solids (TDS) and Total Inorganic Nitrogen (TIN) water quality objectives and waste load allocations that allow the use of recycled water for groundwater recharge while providing reasonable protection of the groundwater quality in the region. The Basin Plan amendment followed several years of technical work by the SAWPA TIN/TDS Task Force which showed that the new objectives were technically sound.

Reuse of recycled water for groundwater recharge is a critical component of the OBMP and water supply plans for the region. As part of the Maximum Benefit Basin Plan, the Agency and CBWM have committed to a specific set of projects and requirements in order to demonstrate that the water quality of the groundwater basin is protected and that the plan provides the maximum benefit to the users of the groundwater basin. These commitments include:

- Surface water and groundwater monitoring programs;
- Chino Desalters (consistent with OBMP requirements of 40 MGD by 2020);
- Recharge facilities/conjunctive use program;
- Recycled water quality management (through industrial waste source control and optimum utilization of the Agency's non-reclaimable waste (NRW) system); and
- Hydraulic control to protect the Santa Ana River quality (consistent with the Orange County Water District and IEUA Memorandum of Understanding).

If the Agency and CBWM achieve timely and appropriate implementation of these commitments, then the Basin Plan's "maximum benefit" water quality objectives will be applied instead of more restrictive historical "anti-degradation" objectives. This will result in significant savings to the Agency for outside water imports and wastewater treatment costs.

1.13 Urban Water Management Plan

In June 2011, the Agency's Board adopted the completed 2010 Urban Water Management Plan (2010 UWMP). The 2010 UWMP outlines the plan for the region's water management needs and complies with the California Urban Water Management Planning Act. The 2010 UWMP updated the current Urban Water Management Plan, adopted by the Board in December 2005. It covers the following topics:

- Population and Land Use
- Water Supplies
- Water Use Efficiency Program
- Wastewater Flows
- Recycled Water Program
- Regional Groundwater Management Programs
- Alternative Water Supplies

- Water Shortage Contingency Plan
- Water Quality Impacts on Reliability
- Water Service Reliability
- UWMP Adoption and Implementation

Important additions to the Agency's 2010 UWMP, compared to the 2005 UWMP, are Wastewater Flows and Projections, Climate Change, Stormwater Management and development of a Regional Water Use Efficiency Plan that meets the new 20 percent reduction in per capita water use by 2020 mandate and other conservation related requirements that have been adopted by the legislature since 2005.

Staff also prepared the 2010 UWMP's for consideration and adoption by the Water Facilities Authority and the Chino Basin Desalter Authority, using the Agency's UWMP as a basis. This approach ensured continuity among the Urban Water Management Plans within our service area and provided an important cost-saving service to both of these agencies.

The 2010 UWMP was prepared in coordination with the regional planning efforts of the Chino Basin's Optimum Basin Management Plan (OBMP), the Chino Basin Groundwater Recharge Master Plan Update, the SAWPA One Water One Watershed (OWOW) Plan and MWD's IRP.

The 2010 UWMP was prepared in close coordination with the retail agencies within the Agency's service area as well as with the MWD, SAWPA, Chino Basin Watermaster, Water Facilities Authority, the Chino Basin Desalter Authority and other cities and agencies within the watershed.

1.14 Long Term Water Use Efficiency Business Plan

In FY 2010, the Agency developed a Long Term Water Use Efficiency Business Plan that created a pathway to a more collaborative and coordinated approach for implementing regional water use efficiency programs. Long Term Water Use Efficiency Business Plan provided an assessment of current activities and an in-depth technical analysis of new, cost-effective water use efficiency (WUE) programs that target limited program resources on activities with the highest water savings potentials. A second function of the plan was to design a blueprint that would ensure that the Agency's retail members were able to meet compliance with the 2010 Urban Water Management Planning Act, the California Urban Water Conservation Council's Best Management Practices, Assembly Bill 1420 (mandatory implementation of Demand Management Measures Statute), the Water Conservation Act of 2009 (SBX 7-7), and State grant and loan eligibility requirements.

Prior to 2010, staff and member agencies developed the Interim Regional Water Use Efficiency Business Plan to provide a limited assessment of existing conditions and to build a work plan for implementing short-term initiatives while the long term plan was under development. Completed in June 2010, the Long Term Water Use Efficiency Business Plan provided both expertise and an in-depth technical evaluation of programs to be considered for implementation. In addition, the plan included detailed sector analyses based on end-use data, assessed regional saturation of locally implemented WUE programs, identified active and passive water savings within the region, provided a cost-benefit analyses for existing and new proposed WUE programs, and identified potential water savings opportunities.

Based on the Long Term Water Use Efficiency Business Plan, the water use reduction goal for the Agency's service area is 5,157 AF by the year 2015 and 15,020 AF by 2020. The Agency expects to exceed the 20 percent reduction by 2020 goal for both the 2015 and 2020 targets through regional and local actions utilizing:

- **WUE Active Programs** – offering customers a program portfolio with cost-effective water efficiency measures;
- **WUE Passive Policy Initiatives –** including building codes and landscape ordinances; and
- **Recycled Water Supply** – augmenting potable water demand by increasing the use of recycled water.

1.15 Santa Ana Watershed Project Authority Integrated Watershed Program

Since its formation in 1967, SAWPA has been a water resource planning agency for the Santa Ana River Watershed region. In 2002, SAWPA acted as a coordinator for the stakeholders of the region to produce the Santa Ana Integrated Watershed Program (SAIWP). It consisted of seven major elements:

- Water storage to drought-proof the watershed by storing up to 1.3 million AF of new water underground throughout the Santa Ana River Basin
- Water quality improvement to mitigate negative impacts from past agricultural, industrial and residential point and non-point source pollutants
- Implementation of water recycling as a means of reducing the area's overall need for imported water
- Development of flood protection along the main stem of the Santa Ana River
- Enhancement of wetlands environment and habitat to restore the Pacific Flyway
- Recreation and conservation to bring additional recreational opportunities and increase public awareness of the Santa Ana River's environmental needs and purposes
- Use of the Santa Ana Regional Interceptor (SARI) brine disposal pipeline to carry saline wastes to the ocean in order to protect the long-term beneficial uses of the groundwater basins

SAWPA has pursued those elements simultaneously based on the availability of state grant funding and the aggregated needs of SAWPA member agencies, including the Agency, water districts, cities, counties, and several environmental groups. The success of this planning effort provided $235 million of Proposition 13 grant funding for the watershed. In 2005, SAWPA updated the SAIWP to include the urban water management plans of the member agencies and provide an updated summary of the many planning processes underway and priority projects of the stakeholders of the watershed. As a result of this effort, SAWPA received a $25 million integrated planning grant (Proposition 50) from the Department of Water Resources and provided a $4.9 million grant to the Agency for recycled water projects during FY 2008/09.

In early 2009, SAWPA completed a new integrated water management plan for the region known as "One Water One Watershed," or OWOW. Part of the impetus for starting the OWOW planning process was the passage of Proposition 84 by the California voters in 2006. Proposition 84 allocated $1 billion

to regions with qualifying integrated watershed plans. The OWOW plan provides the basis for seeking Proposition 84 grant funds from DWR and will help to address the significant water supply crisis which has arisen throughout the state. The goal of OWOW is a sustainable watershed that is drought-proofed, salt-balanced, and supports economic and environmental vitality.

The SAWPA region conducted Round 2 of the competitive Prop 84 funding process in FY 2012/13. A total of 52 projects were submitted by various agencies within the watershed to SAWPA for consideration. The Agency has been pre-approved to receive funding for three projects: $1,000,000 for the Wineville Regional Recycled Water Pipeline and Groundwater Recharge System Upgrades; $750,000 for the San Sevaine Groundwater Recharge Basin; and $500,000 for the Regional Residential Landscape Retrofit Program. It is anticipated that funding will be confirmed by September 2013. Prop 84 funds will complement funding from other sources, including other grants and SRF loans.

1.16 Santa Ana Watershed Project Authority Planning Work Groups

SAWPA is a joint powers agency which conducts water-related investigations and planning studies, and builds physical facilities where needed for water supply, wastewater treatment or water quality remediation. Since the early 1970's, SAWPA has played a key role in the development and update of the Basin Plan for the Santa Ana Region. Several task forces have been formed to address complex technical and regulatory issues and resolve inter-Agency conflicts. These task forces generally include staff of the Regional Water Quality Control Board-Santa Ana Region as active members or advisors, and may seek buy-in from other state and federal regulatory bodies.

The Maximum Benefit Basin Plan Amendment described above was an outgrowth of SAWPA's Nitrogen/Total Dissolved Solids (N/TDS) Task Force. The task force, which met between 1996 and 2003, included the Agency and 21 other water supply and wastewater agencies from the region as well as the Regional Board. Coordinated by SAWPA, the task force completed multimillion dollar studies to review groundwater TDS and nitrogen objectives, groundwater sub-basin boundaries, the TIN and TDS waste load allocations and other components of the Regional Board's nitrogen and TDS management plans. The purpose of this study was to develop more scientifically defensible water quality objectives and avoid any unnecessary constraints on water recycling opportunities. The original scope of work of the N/TDS Task Force included conducting a nitrogen loss coefficient monitoring program for Santa Ana River, Reach 3, which was completed in 2005.

The Agency is currently participating in SAWPA's Basin Monitoring Program Task Force (BMPTF). This task force was an outgrowth of the N/TDS Task Force study and the 2004 Basin Plan amendments. The group is tasked with executing some of the monitoring and reporting commitments of the Maximum Benefit Basin Plan Amendment, such as a triennial compilation of ambient groundwater quality data and an annual report of Santa Ana River water quality.

The BMPTF also funds updates to the Santa Ana River Wasteload Allocation model that was developed by Wildermuth Environmental, Inc., and uses the model to evaluate different discharge scenarios and the impacts on Orange County groundwater. In late 2009, the Basin Monitoring Task Force proposed an amendment to the task force's founding agreement. The amendment to the agreement includes the new task of conducting Santa Ana River wasteload allocations and other related studies to be used for

new Basin Plan Amendments. Recent activities include wasteload allocation modeling for the Chino South groundwater sub-basin to update the N/TDS Management Plans; and drafting the Declaration of Conformance with the Recycled Water Policy.

Another SAWPA work group in which the Agency is an active participant is the Emerging Contaminants (EC) Work Group. The EC Workgroup was formed in 2007 to develop a characterization program for emerging constituents. The workgroup is comprised of imported water agencies and publicly-owned treatment works. The EC Work Group study effort was separated in two phases:

- Phase 1 covered current water quality monitoring programs, regulatory issues, stakeholder concerns, analytical methods, and the state-of-the-science with respect to potential public health & environmental impacts. This phase culminated in a written report submitted to the Regional Board in December 2008 characterizing the workgroup's preliminary findings.

- Phase 2 defines the Emerging Constituents Investigative Plan based on ongoing characterization studies and other related evaluations. The work plan was approved by the RWQCB during the December 2009 Regional Board meeting as Resolution No. R8-2009-0071.

In accordance with the adopted work plan, each participating wastewater agency samples and pays for their own analyses. Two rounds of sampling have been completed for a list of emerging constituents identified during the characterization phase of the study. The results were summarized in a report to the Regional Water Quality Control Board and released to the public.

1.17 California Water Plan

In March 2009, California's Department of Water Resources published the latest update to the California Water Plan (Update 2009). The five-volume report is a comprehensive reference document on California water conditions, challenges and water resource management. It is a blueprint for sustainable water management in a condition of uncertainty and vulnerability due to climate change and changing ecosystem needs. Update 2009 came on the heels of a historic water legislation package passed by the California State Legislature and signed by the Governor in November 2009.

Updates of the 1957 California Water Plan are required by law every five years. These reports have evolved from statistical summaries of water supply and demand to expert analyses of complex issues of hydrology, water use, conservation, and emerging trends in water resource management, flood safety and climate change adaptation. The Plan also provided broadly supported strategic recommendations to guide future investments and inform resource management policy-making.

1.18 Delta Plan

The Sacramento-San Joaquin River Delta in California is the hub of the state's major water supply systems. The Delta is crossed east to west and north to south by channels, aqueducts, and pipelines to convey water to the majority of Californians to the south to sustain one of the world's largest economies. The Delta itself is home to half a million people and is also the largest estuary on the West Coast and supports a vast array of birds, fish, and wildlife.

In 2009, the California Legislature declared that the Delta Watershed and California's water infrastructure are in crisis. The Delta Stewardship Council was created to develop the Delta Plan which addresses the need to reconcile the competing goals of ecosystem restoration and water supply reliability in the Delta. After a two year process which involved nearly one hundred public meetings and thousands of public comments the plan resulting Delta Plan provides a mix of legally enforceable policies and essential recommendations to prioritize actions and strategies for improved water management, ecosystem restoration, and levee maintenance. It also restricts actions that may cause harm, and provides regulatory guidance for significant plans, projects, and programs in the Delta.

Key initiatives and recommendations in the Delta Plan are:

- **Improve California's water supply reliability** by calling for more regional water supply development and setting a deadline for successful completion of the BDCP, which is intended to improve water conveyance through the Delta and improve habitat for threatened and endangered species.

- **Protect and enhances the Delta ecosystem** by identifying and protecting high-priority restoration areas and setting a deadline for the State Water Resources Control Board to take actions that support the coequal goals by updating water quality objectives, including flow objectives, for the major rivers and tributaries of the Delta.

- **Protect and enhances the Delta as a place** by recognizing that all actions must be achieved in a manner that protects and enhances the values and unique but "evolving" characteristics of the Delta. The Delta Plan defines a role for local input in decision making about major projects and minimizes interference with local land use planning. It also supports designation as a National Heritage Area and encourages economic development through agriculture and recreation.

- **Improve water quality** by prioritizing State and regional actions to deal with high-priority Delta-specific water quality problems.

- **Reduce risk** by requiring new development in and around the Delta to have adequate flood protection, protects and preserves floodplains, and promotes setback levees to increase habitat and reduce flood damage.

- **Set an example by using the "best available science"** and adaptive management and requires that others do the same so that projects can move forward in a way that is efficient and allows decision making in the face of uncertain conditions.

1.19 Bay-Delta Conservation Plan

The Bay-Delta Conservation Plan (BDCP) is being prepared through a collaboration of state, federal, and local water agencies, state and federal fish agencies, environmental organizations, and other interested parties. These organizations have formed the BDCP Steering Committee. The plan will identify a set of water flow and habitat restoration actions to contribute to the recovery of endangered

and sensitive species and their habitats in California's Sacramento-San Joaquin Delta. The goal of the BDCP is to provide for both species/habitat protection and improved reliability of water supplies.

As the BDCP evaluates habitat, physical and operational alternatives necessary to restore the Delta ecosystem while providing water supply reliability, state and federal agencies are developing a joint Environmental Impact Report/Statement (EIR/EIS) under the Delta Habitat Conservation and Conveyance Program (DHCCP). The EIR/EIS will determine the potential environmental impacts of the proposed BDCP.

Lead agencies for the EIR/EIS are the California Department of Water Resources, the Bureau of Reclamation, the U.S. Fish and Wildlife Service, and NOAA's National Marine Fisheries Service, in cooperation with the California Department of Fish and Game, the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers. A draft EIR is currently available for public review and comments.

The BDCP is being developed in compliance with the Federal Endangered Species Act (ESA) and the California Natural Communities Conservation Planning Act (NCCPA). When completed, the BDCP would provide the basis for the issuance of endangered species permits for the operation of the state and federal water projects. The plan would be implemented over the next 50 years. Draft chapters 1 through 7 of the BDCP are currently available for public review and comments.

1.20 Environmental Documentation

To comply with the California Environmental Quality Act (CEQA), the Agency certified a Programmatic Environmental Impact Report (PEIR) on June 28, 2002. It encompassed the Agency's Wastewater Facilities Master Plan, Organics Management Strategy Business Plan and the Recycled Water Feasibility Study. This CEQA document is known as the Facilities Master Plan Programmatic Environmental Impact Report (FMP PEIR). The FMP PEIR integrated all of the Agency's related planning activities into one comprehensive document in order to address the environmental concerns of the overall effects of the projects contemplated by the Agency. The Agency also served as the lead Agency under CEQA for preparation of the Program EIR for the CBWM's OBMP, certified on July 12, 2000.

This TYCIP is consistent with the Agency's approved FMP PEIR. Supplements to the Programmatic EIRs have been prepared as necessary, when specific project elements were better defined during each project design. For example, for the Inland Empire Regional Composting Facility, the Agency prepared a CEQA Initial Study and Finding of Consistency with the FMP PEIR. Similarly, for several of the recycled water projects, the Agency prepared Addenda to the FMP PEIR as well as NEPA documents to comply with federal funding requirements. The Agency also served as the lead agency for coordination and preparation of a focused Subsequent EIR for the updated OBMP or "Peace II Agreement" and adopted it in October 2010. Furthermore, in December 2008, the Agency certified a Mitigated Negative Declaration for the Dry Year Yield Expansion Project.

1.21 Agency Levels of Service

In 2009, as part of the process of developing a solid foundation for a modern Asset Management Program, the Agency began to define business objectives, called Levels of Service. The Levels of Service are intended to guide the Agency's capital improvement planning and operation and maintenance programs. The Levels of Service tie together the Agency's mission and values with its strategic plans. The Levels of Service standards identified in August of 2012 included the following:

- Provide customers with sufficient capacity to process 100% of discharge;
- Meet 100% of peak hourly demands and low rate of interruptions for recycled water customers;
- Expand recycled water use from 30,000 to 50,000 AFY by 2022;
- Actively participate in developing enhanced groundwater recharge in Chino Basin;
- Partner with local agencies to optimize stormwater capture and conjunctive use;
- Implement energy management strategies so that the Agency can be self-sufficient by 2020;
- Recycle 100% of biosolids and achieve complete utilization of the IERCF;
- Support, promote, and participate in local and regional water conservation programs; and
- Take a leadership role in the development and management of bringing imported water supplies into the Chino Basin.

The Levels of Service Standards are currently being refined in close collaboration with the Regional Technical and Policy Committees. Final recommendations will be presented to the Agency's Board of Directors for possible adoption in June or July of 2013.

The Agency is dedicated to maintaining a high level of service in all areas of water and wastewater treatment. The plans and projects described in the subsequent chapters will detail how the Agency intends to continue to do this over the course of the next ten years.

2.0 WATER RESOURCES MANAGEMENT

2.1 Introduction

There has been a profound shift in California water supply planning as a response to regulatory restrictions on pumping of imported water from the Bay-Delta coupled with prolonged periods of water shortage. California's most recent water crisis (2007-2010) resulted in former Governor Arnold Schwarzenegger's 2008 declaration of a water emergency. This led to the development of Senate Bill X7-7 which requires a 20% reduction in urban per capita water use, state-wide by 2020. During 2009, MWD prepared and implemented a Water Supply Allocation Plan (WSAP), while the Agency, in collaboration with its member agencies, prepared and implemented a Drought Response Plan in response to MWD's WSAP.

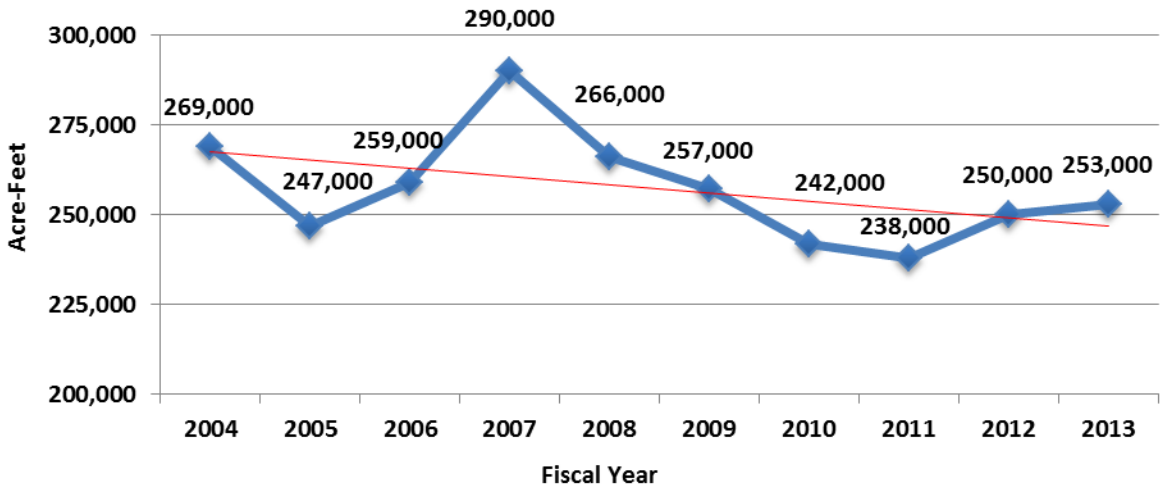
Fortunately, the Agency's service area was well prepared to handle the 2007-2010 California water crisis as a result of a well-executed Integrated Water Resources Management Plan. However, the Agency and its member agencies recognize the need to continue to integrate the Chino Basin's overall water supply management strategy. Water use efficiency and conservation are the most cost-effective new source of water. The Agency's recognition of this and goal, as outlined in the 2005 Urban Water Management Plan, forecasts that conserved water will account for at least 10% of annual demand of the Agency's future water portfolio and will be an important component of local resource development. The Agency is dedicated to continuing to work with local stakeholders to enhance and expand existing programs that improve imported and local water supply availability and reliability, including:

- Imported Water Program
- Recycled Water Program
- Groundwater Recharge Program
- Desalter Program
- Groundwater Conjunctive Use Programs
- Stormwater Management Programs
- Water Use Efficiency Programs
- Conservation Programs

2.2 Current Water Use Trends

FY 2012/13 has proven to be another dry year, similar to FY 2011/12. This follows a very cool and wet FY 2010/11 that had brought the region out of a three-year drought. Although water use in the Agency's service area declined for four years in a row, over the last two years demands have increased by approximately 15,000 acre-feet per year. The service area's overall water use is still approximately 13% (37,000 acre-feet) lower than the peak water use year, FY 2006/07. This sustained reduction in water use can be largely attributed to the economic downturn as well as the Agency and its member agencies' public education, water use efficiency programs, and ordinance enforcement.

FIGURE 2-1: SERVICE AREA OVERALL WATER USE TREND



Despite the recent increase in water demand, the ten year downward trend in water use is an excellent indicator of how well member agencies continue to respond to current water supply challenges. The Agency and its member agencies have made aggressive efforts to diversify and maximize local resources and water conservation. These efforts have better prepared the service area to cope with the current and future water supply constraints. Notable examples of these efforts are listed below:

- The Recycled Water Program expanded its connected demand from 13,000 AFY (FY 2006/07) to just over 43,000 AFY (FY 2011/12). The Agency continued to maximize recycled water deliveries with sales of approximately 29,000 AF in FY 2011/12 (this includes direct reuse and recharge);
- The Chino Desalters continued to maximize production, as they produced just over 25,000 acre-feet, of which the Agency member agencies used approximately 14,200 acre-feet;
- Since the completion of the Long-Term Water Use Efficiency Business Plan, the Agency and the member agencies have exceeded water savings plan projections with lower program costs. In FY 2010/11 the projected water savings was 452 acre-feet per year with actual

water savings of 546 acre-feet. In FY 2011/12 projected water savings was 232 acre-feet per year with actual water savings of 611 acre-feet. The actual avoided cost benefit of implementing conservation programs over the two year period was $28 per acre-foot versus the plan projection of $83 per acre-foot;

- Over the last four years, for every dollar that the Agency and member agencies have invested in regional water use efficiency programs, they have received an average return of $4 from outside funding through a variety of sources. This trend continues to grow with the award of additional grants and increased funding from MWD for locally implemented programs; and

- The Agency and the member agencies have collaborated on the preparation and submission of several grant opportunities over the last two years securing close to $750,000 in outside funding for the water use efficiency programs.

To ensure adequate water supplies in the future, the Agency and its member agencies have completed several water supply management plans that outline all current and future efforts to diversify and maximize imported resources, local resources and water use efficiency.

- The Agency and its member agencies will continue working to implement and expand the Recycled Water Program, which will give the Agency the ability to deliver 50,000 AFY of recycled water;

- In coordination with Chino Basin Watermaster, the Agency and its member agencies will complete the implementation plan to the Chino Basin Recharge Master Plan during FY 2013/14. This Plan outlines required recharge facilities and replenishment water needed to meet the projected water demands;

- In coordination with the Chino Desalter Authority, the Agency and its member agencies will continue working towards completing the Phase III expansion of the Chino Desalters, which will increase capacity from 24,600 AFY to 40,000 AFY;

- The Agency and its member agencies will implement the water use efficiency programs outlined in the Long Term Regional Water Use Efficiency Business Plan, completed in FY 2009/10. This document provides the blueprint for the implementation of existing programs and the development of new cost-effective water use efficiency programs;

- In coordination with member agencies, and other local agencies, the Agency completed its 2010 Regional Urban Water Management Plan, summarizing the projected water demands and supplies through the year 2035; and

- In coordination with its member agencies, the Agency will be developing an Integrated Water Resources Management Plan during FY 2013/14 – FY 2014/15. This plan will not only focus on the development of new local and supplemental supplies, but it will also review the financial and operational opportunities and limitations for each respective water resource supply or program.

TABLE 2-1: TOTAL WATER PRODUCTION IN THE AGENCY'S SERVICE AREA (AFY)

Water Source	Fiscal Year Ending June 30					
	2003	2004	2005	2006	2007	2008
Chino Basin Groundwater	92,501	89,103	84,551	77,195	90,032	87,908
Other Basin Groundwater	43,024	42,377	36,198	48,780	53,830	43,401
Surface Water	9,554	9,058	18,060	18,756	21,184	18,411
Imported Water	61,027	80,170	67,694	68,456	69,453	68,951
Recycled Water	4,498	5,408	5,396	8,847	13,029	13,493
Desalter	6,499	4,696	3,904	6,449	12,904	15,301
Agricultural Groundwater Use	35,168	38,192	31,505	30,253	29,653	23,539
Total	**252,271**	**269,004**	**247,308**	**258,736**	**290,085**	**265,452**

Water Source	Fiscal Year Ending June 30				
	2009	2010	2011	2012	2013[1]
Chino Basin Groundwater	66,351	68,277	61,808	62,150	63,250
Other Basin Groundwater	46,418	31,035	31,371	41,788	43,010
Surface Water	16,765	36,341	43,874	39,905	40,480
Imported Water	78,872	54,934	51,383	52,831	53,130
Recycled Water	13,360	17,298	16,656	18,641	17,710
Desalter	14,810	14,737	14,282	14,203	15,180
Agricultural Groundwater Use	23,277	21,043	20,000	20,000	20,240
Total	**257,076**	**241,593**	**237,603**	**249,517**	**253,000**

Sources: Chino Basin Watermaster assessment table, WFA water deliveries, and retail agency records.

[1] *Estimates were used for 2013 water use as data.

2.3 Historical Water Use for the Agency's Service Area

The quantity of water used within the Agency's Service Area for the past ten years has ranged from a low of 235,000 acre feet in FY 2011/12 to a high of 290,000 acre feet in FY 2006/07. The relative contribution of ground, surface, imported, recycled, and desalter water is shown in Figure 2-2 and Table 2-1. Groundwater is the prominent source of water used within the Agency's service area accounting for approximately 60% to 70% of the total water supply. The next largest water supply category is imported water, which delivers approximately 20% to 30% of northern California water to the area. Surface water from the San Gabriel Mountains comprises a fairly small, yet critical, portion of the water supply and represents a 5% to 12% share of the annual water supply portfolio depending on annual rainfall. Lastly, recycled and desalted water combined totals account for approximately 1% to 13% of the water supplied in the service area.

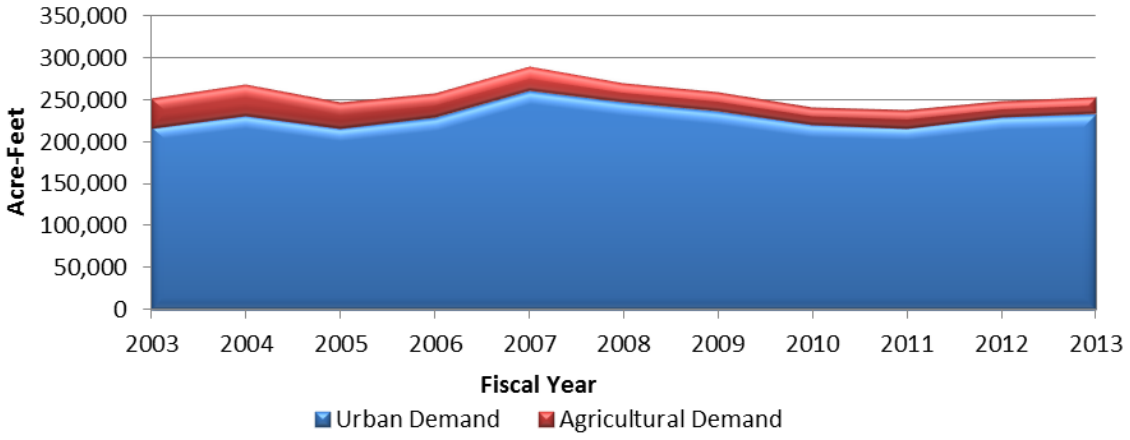
Water demand within the Agency's service area has changed significantly over the years shifting the majority of water use from agricultural to urban (i.e. residential, commercial, industrial and institutional) uses. In FY 2012/13, about 90% of the water demand came from urban users and 10% from agricultural users.

Despite the tremendous growth in the region, total water demand of both urban and agricultural uses in FY 2012/13 is virtually the same as demand in FY 02/03 with water use increasing by only 1,000 acre-feet (from 252,000 acre-feet FY 02/03 to 253,000 acre feet FY 12/13).

Although total water usage was the same in FY 2002/03 and FY 2012/13, urban demands have grown by approximately 50,000 acre-feet over the past ten years, from 217,103 acre-feet in FY 2002/03 and 233,000 acre-feet in FY 2012/13. However, the FY 2012/13 demand is still 27,000 acre-feet lower than the peak urban demand in FY 2006/07, when demands reached approximately 260,000 acre-feet.

The agricultural demands steadily declined from about 35,000 acre-feet per year in FY 2002/03 to approximately 20,000 acre-feet per year in FY 2012/13, consistent with the conversion of these lands to urban development and converting agricultural demands to recycled water use.

FIGURE 2-2: 2003-2013 TOTAL WATER USE IN THE AGENCY'S SERVICE AREA BY SECTOR

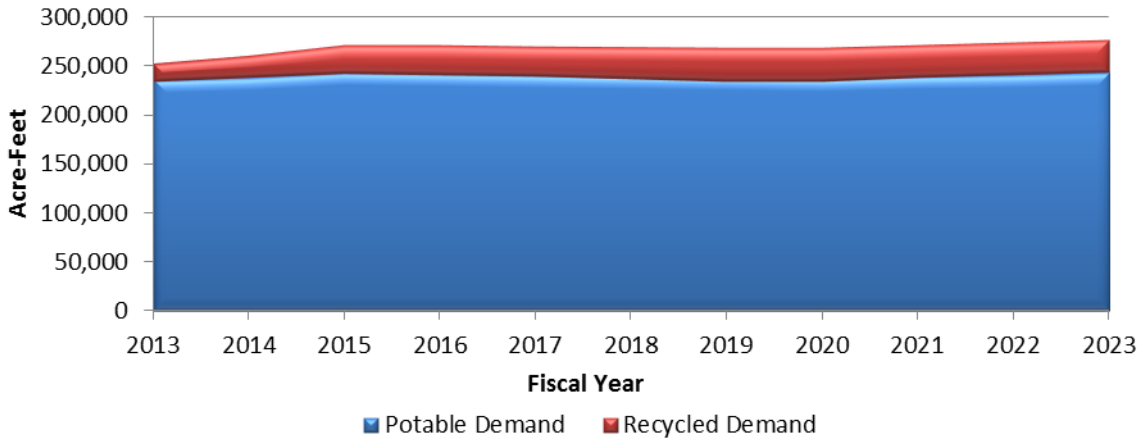


Looking back on California's history of water demands and supplies can provide powerful insight into what the Agency and its member agencies can expect and prepare for in the future. For example, the early 1990's were characterized by an intense drought (1988-1992) that sharply increased demand and then, as a result of the region's conservation efforts, decreased the area's water usage for several years. Similarly, during the recent 2007-2010 California water crisis (FY 2006/07 being a record-breaking dry year for California with the Agency's service area receiving less than five inches of rain – far below the 15-inch average rainfall for the region) the region saw a short, sharp increase in demand followed by a longer lasting decrease in demand. The region is currently experiencing a slight upward trend in demand, primarily driven by back-to-back dry years in FY 2011/12 and FY 2012/13. There are also signs from developers that growth within the region is slowly rebounding which will result in increased urban water demands and likely decrease agricultural demands as land use conversion occurs.

2.4 Future Water Demands for the Agency's Service Area

Total future water demand, including agricultural production, within the Agency's service area over is expected to increase by approximately 24,000 acre-feet in the next ten years (from 253,000 acre-feet to about 277,000 acre feet per year)[2]. This represents a 9% potential increase in the area's projected water demands. With the conversion of agricultural land to urban uses over the next ten years, the percentage of water used in the area to meet urban demand will increase while the share of water used for agricultural purposes will decline.

FIGURE 2-3: SERVICE AREA POTABLE & RECYCLED WATER DEMAND PROJECTIONS

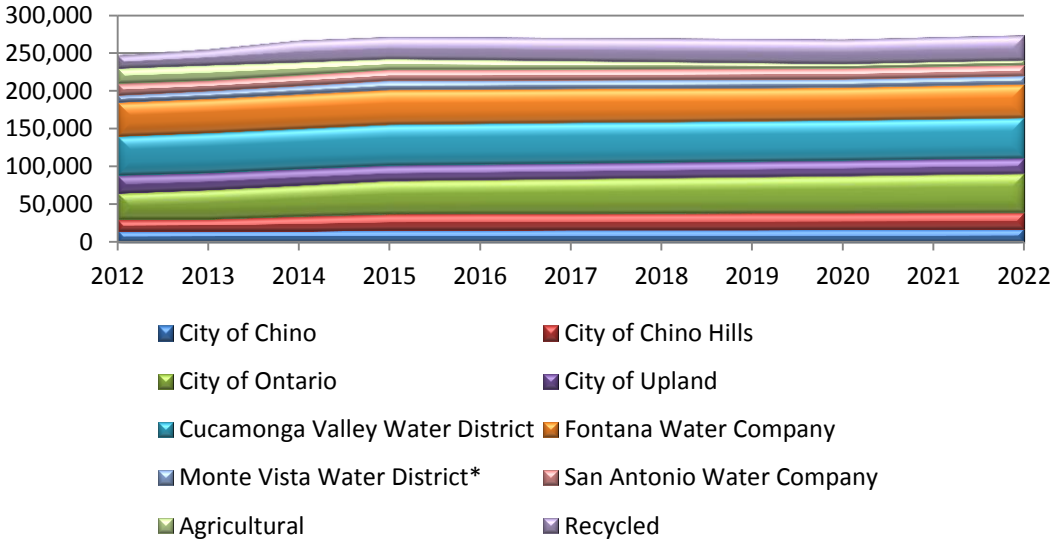


By FY 2022/23, urban water use is expected to be 97.5% of the water demand (about 270,000 acre-feet), while agriculture will use less than 2.5% (about 7,000 acre-feet). By FY 2022/23, the Agency's member agencies that are projected to have the largest water demand within the Agency's service area are the Cucamonga Valley Water District (at 53,937 acre-feet per year, a 2.5% increase above 2013 water usage), the City of Ontario (at 52,792 acre-feet per year, a 37% increase above 2013

[2] The water demand forecasts used in preparation of IEUA's 2010 UWMP are based upon information provided by the respective member agencies.

water usage), and the Fontana Water Company (at 44,838 acre-feet per year, with demands remaining fairly stagnant) as shown in Table 2-2 on the following page.

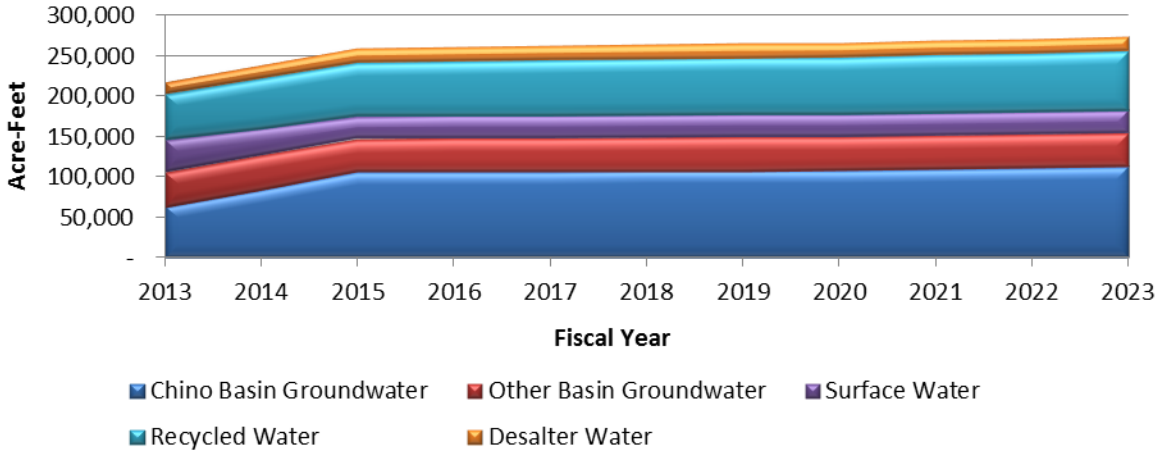
FIGURE 2-4: SERVICE AREA DEMAND PROJECTIONS BY AGENCY



2.5 Future Water Supplies for the Agency's Service Area

Over the last ten-years, significant investments in local supply facilities have helped reduce dependence on imported water and achieve other program goals. These include capital expenditures of about $110 million dollars for recycled water projects, $50 million dollars for improvements to recharge basins, $150 million for capital expenditures for Desalters I and II, and $27.5 million for the MWD recharge and extraction of stored imported water for the Dry Year Yield Program. Together, almost $350 million has been spent to enhance local water supplies.

FIGURE 2-5: SERVICE AREA SUPPLY PROJECTION BY SOURCE



As a result of the implementation of these integrated water management strategies and investments, today and through the foreseeable future, available water supplies will exceed anticipated demands. Urban water supplies within the service area are projected to increase by 83,000 acre-feet (from 272,000 acre-feet in FY 2012/13 to 355,000 acre-feet by FY 2022/23[3]). The increase in supplies will come from a number of areas: future groundwater production is expected to increase by approximately 52,000 AFY (made up of the Chino Basin, including desalters, and other local groundwater basins); future imported water supplies are expected to increase by approximately 29,000 AFY based on numbers from member agency UWMPs; and future recycled water supplies are expected to increase by approximately 16,000 AFY[4] (see Figure 2-5 on page 7).

2.6 Water Use Efficiency/Conservation

Water Use Efficiency programs are a significant part of the Agency's Water Resources Portfolio and, in light of that, the Agency recognized early on that water use efficiency would play a fundamental role in sustaining and meeting future water supply needs.

In September 1991, the Agency became one of the first water agencies to sign the California Urban Water Conservation Council's (CUWCC) Memorandum of Understanding Regarding Urban Water Conservation (MOU), accepting and supporting the implementation of a prescribed set of urban water conservation Best Management Practices (BMPs). As one of the original signatories to the MOU, the Agency's highest conservation priority has been to ensure that good-faith efforts are made on behalf of the member agencies in implementing cost-effective BMPs locally.

Over the last 22 years, the Agency has been and will continue to be committed to developing and implementing many core regional water use efficiency programs and practices that have been designed on the foundation of BMPs. These programs continue to serve as a key component in the overall regional water resource management strategy for the region.

Moving forward, the Agency will continue to implement active and code-based[5] BMP related activities utilizing strategies identified in the Agency's Regional Long Term Water Use Efficiency Business Plan (WUE). The Agency and its member agencies have agreed to implement parallel programs that have complementary approaches. The strategies identified seek to leverage assets through regional funding opportunities, inter-agency partnerships, and grants in order to provide a greater return on the region's investment in conservation and to maintain financially sustainable water use efficiency programs.

SBX7-7 requires water retailers to develop a baseline and set targets to achieve a 20% reduction in gallons per capita day by 2020. Although the Agency, as an urban wholesale water supplier, is not required to comply with this statute, the Agency's urban retail water suppliers must. In support of

[3] Agricultural uses were not included in the discussion of future urban water supplies as agricultural lands are expected to be developed as per city planning documents.
[4] Local surface water and other groundwater production is not expected to change in these projections.
[5] Code-based BMPs refer to the changing state-mandated standards established for devices and fixtures. As a result of such a mandate, only items that meet specific criteria (such as lowering the amount of water per flush in a toilet) are supported.

TABLE 2-2: WATER DEMAND PROJECTIONS BY IEUA MEMBER AGENCIES

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
City of Chino	15,662	16,132	16,602	16,762	16,922	17,081	17,241	17,401	17,696	17,990	18,285
City of Chino Hills	16,035	18,418	20,800	20,920	21,040	21,160	21,280	21,400	21,400	21,400	21,400
City of Ontario	38,529	41,471	44,413	45,460	46,507	47,553	48,600	49,647	50,695	51,744	52,792
City of Upland	22,449	21,390	20,330	20,330	20,330	20,330	20,330	20,330	20,330	20,330	20,330
Cucamonga Valley Water District	52,604	53,374	54,144	53,900	53,655	53,411	53,166	52,922	53,260	53,599	53,937
Fontana Water Company	45,025	45,521	46,017	45,486	44,955	44,425	43,894	43,363	43,855	44,347	44,838
Monte Vista Water District	10,764	11,232	11,700	11,508	11,316	11,124	10,932	10,740	10,800	10,860	10,920
San Antonio Water Company	13,695	13,847	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000
Agricultural	20,000	17,500	15,000	13,400	11,800	10,200	8,600	7,000	7,000	7,000	7,000
Potable Demand	**235,290**	**238,884**	**243,006**	**241,765**	**240,525**	**239,284**	**238,044**	**236,803**	**239,036**	**241,269**	**243,503**
Recycled Water (Direct Reuse)	17,710	21,568	28,865	29,424	29,984	30,543	31,103	31,662	32,201	32,741	33,280
Total Demand	**253,000**	**260,452**	**271,871**	**271,190**	**270,509**	**269,827**	**269,146**	**268,465**	**271,238**	**274,010**	**276,783**

Demand projections taken from local agency's UWMPs

TABLE 2-3: PROJECTED URBAN WATER SUPPLY IN IEUA SERVICE AREA BY SOURCE (AFY)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Chino Basin Groundwater	63,250	84,962	106,673	106,901	107,129	107,356	107,584	107,812	109,485	111,158	112,830
Other Basin Groundwater	43,010	41,841	40,672	40,872	41,072	41,272	41,472	41,672	41,672	41,672	41,672
Imported Water	53,130	66,843	80,556	80,773	80,990	81,207	81,424	81,641	81,858	82,075	82,291
Surface Water	40,480	34,485	28,490	28,490	28,490	28,490	28,490	28,490	28,490	28,490	28,490
Recycled Water	56,752	61,496	66,241	67,071	67,901	68,731	69,561	70,391	71,193	71,995	72,798
Desalter Water	15,180	16,457	17,733	17,733	17,733	17,733	17,733	17,733	17,733	17,733	17,733
Total Supplies	**271,802**	**306,083**	**340,365**	**341,840**	**343,314**	**344,789**	**346,264**	**347,739**	**350,431**	**353,123**	**355,814**

Demand projections taken from local agency's UWMPs

its eight retail member agencies, the Agency takes the position of preparing a regional approach establishing a baseline and setting targets based on regional demands.

All member agencies within the Agency's service area have agreed to the formation of a regional alliance, and will continue to cooperatively participate in developing programs and meeting water conservation goals. The Agency and its member agencies devised a strategy to meet all compliance requirements in the most cost-effective manner feasible. Table 2-4 below is a chart showing the compliance requirements and associated strategies for each.

TABLE 2-4: COMPLIANCE REQUIREMENTS

Regulatory Agency or State Organization	Requirements	Approach
20x2020	Reduce per capita water use by 10% by 2015 Reduce per capita water use by 20% by 2020	By implementing Active Water Use Programs, Policy Initiatives, and increasing Recycled Water Supply, IEUA and its agencies are projected to be on track to meet per capita water reduction goals for both target years.
CUWCC	Reduce per capita water use by 18% by 2018*	IEUA and its agencies will utilize CUWCC's new GPCD option, which offers a per capita methodology to track compliance. This will align with the requirements of 20x2020 as well.
AB 1420	Fulfill BMP commitments	Lines up with actions taken to meet CUWCC BMP compliance.

Compliance Requirements

Although the current goals for each of the regulatory agencies and state organizations vary, all are moving to a Gallons-per-Capita-per-Day (GPCD) savings goal that is in line with the 20x2020 per Capita Water Use Reduction Goals.

The Agency expects to exceed the 20x2020 goal for both the 2015 target and the 2020 target. This will be accomplished through regional and local actions utilizing:

1. **Water Use Efficiency (WUE) Active Programs** – offering customers a portfolio of programs including cost-effective indoor and outdoor water efficiency measures
2. **WUE Passive Policy Initiatives –** including building codes and landscape ordinances

3. **Recycled Water Use** – reducing demand for potable water by increasing recycled water supply

Table 2-5 below shows the anticipated GPCD reduction from the WUE activities and recycled water supply. The water use reduction goal of 5,157 acre-feet for 2015 and 15,020 acre-feet for 2020 is the GPCD WUE compliance goal presented in acre-feet. As shown, the WUE active and passive initiatives to be implemented under this plan are estimated to achieve much greater savings than the GPCD requirements.

TABLE 2-5: IMPACT OF WUE ACTIVITIES AND RECYCLED WATER USE

	YEAR	
	GPCD Reduction by 2015	**GPCD Reduction by 2020**
Projected GPCD reduction from WUE Activities Only	5	13
Projected GPCD reduction from Recycled Water Use Only	38	45
TOTAL Projected GPCD Reduction	**43**	**58**
10 Year Baseline GPCD	**251**	
IEUA GPCD Target	226	201
IEUA Projected GPCD Achievement	208	193

Note: numbers are based on the 2010 UWMP

With major challenges ahead, the Agency recognizes that a sound, fact-based plan is needed as a tool to guide water use efficiency program implementation over the upcoming years. In the past, WUE programs were focused on targeting indoor water use and replacing high water using fixtures, such as toilets, while overlooking outdoor water savings opportunities because of cost, difficulty of implementation and water savings reliability. Targeted indoor programs have been extremely successful, with an estimated lifetime savings of 65,000 acre-feet since 1990. However, with current customer saturation, and major advancements in product designs and performance, landscape programs are coming to the fore of WUE programs. It is estimated in the 2010 UWMP that outdoor water use accounts for 66% of the single family residential consumption and 57-94% of commercial demand accounting for a combined total of 69% of the Agency's overall demand.

The Agency, working in tandem with the eight agencies, created a Regional Water Use Efficiency Partnership Workgroup and initiated an eight-step process that resulted in the creation of a regional *Water Use Efficiency Business Plan* (Plan).

The Plan includes the following information:

- The current water supply situation and usage patterns;
- Specific market opportunities;
- A strategy for reaching water savings goals;
- Recommended programs with budgets, water savings, costs, marketing and operational details;
- A program implementation plan and schedule; and,
- A system for tracking and reporting performance over time.

In order to achieve the WUE active programs' goals, listed above, the Agency will implement active water use efficiency programs that will achieve water savings. These programs will deliver water savings through the 2015 and 2020 target years and beyond due to the long life for many of the measures being implemented.

The strategy developed for goal achievement has the following elements:

- Target markets with highest water savings opportunity;
- Provide program innovation to transform the landscape WUE market;
- Secure outside funding for programs;
- Provide sustained education and outreach to customers; and
- Advocate for State and regionally appropriate rules, regulations and ordinances for the efficient use of water

2.7 IEUA Integrated Water Management Plan

The key philosophy of the Agency's integrated water management plan is to maximize local water sources and minimize the need for imported water, especially during dry years and other emergency shortages. The integrated plan strives to achieve multiple objectives of increased water supply, enhanced water quality and energy savings.

In recent years, large fluctuations in water sales at the regional MWD level (due to drastic swings from wet to dry years) has caused both large rate increases and the elimination of MWD's Replenishment Program for groundwater. Despite these recent large rate increases, the Agency may see a shift away from its integrated water management plan and once again become more dependent on imported water (via MWD).

The key reason for this potential shift back to imported water is the elimination of the Replenishment Program. Traditionally, the Chino Basin has always overproduced the underlying groundwater basin with the understanding that it would have replenishment water available from MWD to replenish the groundwater. However, with the elimination of the Replenishment Program, it is no longer economically feasible for Chino Basin pumpers to overproduce the basin and purchase replenishment water. It is now more cost-effective to buy Tier I water from MWD than it is to pump water from the basin, thus creating more dependency on imported water rather than local supplies.

However, increasing reliance on imported water supplies may not be prudent, especially in light of the strict pumping restrictions on the Sacramento-San Joaquin Bay Delta and the re-occurring droughts in the southwest which impact Colorado River water supplies. As a result, in FY 2013/14 – FY 2014/15 the Agency will be developing an Integrated Water Management Plan with the goal of continuing to develop other local and supplemental water resources to ensure reliability. In addition to the need and development of new local supplies, a specific focus of the Plan will be to develop opportunities to optimize the portfolio of water resource supplies and programs (i.e. imported, recycled, recharge). This will include a detailed review of both the financial and operational opportunities/limitations of the water resource supplies and programs.

3.0 WASTEWATER FLOW PROJECTIONS

Wastewater flow forecasts are conducted annually based on three components: (1) historical wastewater flow trends; (2) per capita or per dwelling unit wastewater generation factors; and (3) expected future growth numbers provided by Contracting Agencies. Projections are used to determine future demands on the Agency's facilities in order to anticipate the need for modifications to Regional Water Recycling Plants (RWRP) and Solids Handling facilities.

Based on analyses of the components, ten-year flow projections have been made for each of the Agency's RWRPs, and for the Agency's service area as a whole. The projected flows are then compared to current and future planned plant capacities. Alternative scenarios reflecting possible diversions, bypasses, and recycle streams are also presented. For these forecasts, the "tributary area flow" is defined as raw sewage flow from the service area that is naturally tributary to a particular RWRP without pumping, diversion or bypassing. In contrast, the "treated influent flow" is the actual flow that is received and treated at the RWRP. The treated influent flow is different than the tributary area flow because the RWRFs are interconnected, allowing some of the tributary flow to be re-routed between plants. In addition, treated influent flow includes the recycle streams generated during solids processing that are sent back to the plant headworks for additional treatment.

3.1 Wastewater Flow Trends

Figure 3-1 illustrates the general wastewater flow pattern within the Agency. The "northern service area" includes RP-1 and RP-4, while the "southern service area" includes CCWRF and RP-5. Table 3-1 shows the current flows being treated at each of the Agency's RWRPs. For FY 2011/12, the average raw wastewater flow treated was 53.2 MGD and the treated influent flow was 54.7 MGD. The difference was due to 1.5 MGD of solids processing recycle flow sent from RP-2 to the RP-5 headworks for additional treatment. Since FY 2006/07, the Agency's wastewater flows have declined by approximately 10 percent (similar to other local agencies). However, even though wastewater flows declined, the Agency has been able to increase the amount of recycled water supplied to users by using the San Bernardino Avenue Lift Station and the Montclair Lift Station to route additional raw wastewater to the recycling plants in the northern service area where they system has been expanded and where groundwater recharge basins are located.

FIGURE 3-1: CURRENT WASTEWATER FLOWS

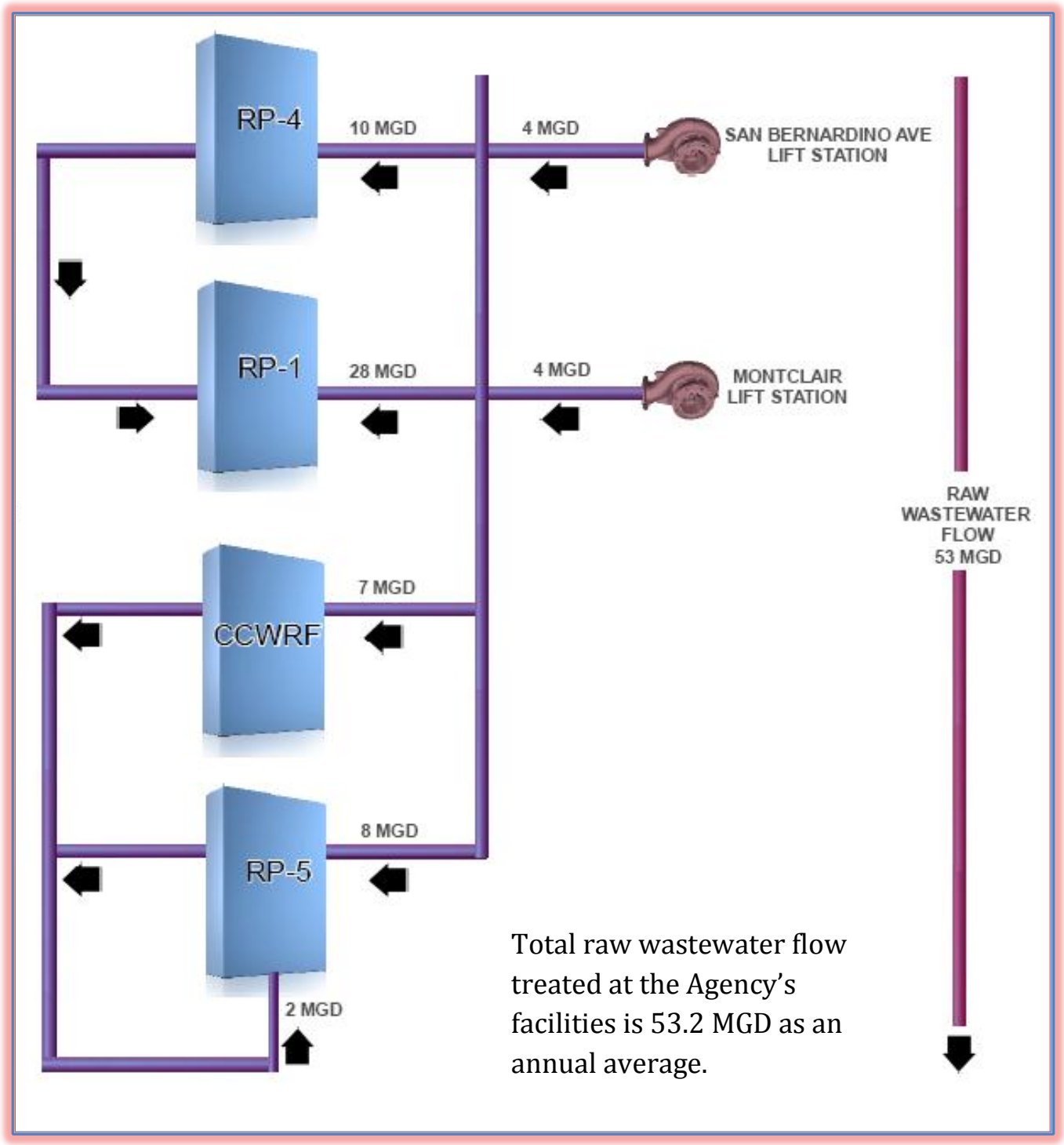


TABLE 3-1: AVERAGE ANNUAL FLOW (FISCAL YEAR 2011/12)

AGENCY	RP-1	RP-4	RP-5	CCWRF	TOTAL
Chino	0.1		1.6	2.1	3.8
Chino Hills			3.2	2.0	5.2
Ontario	8.8		3.5		12.3
Montclair	0.2			2.1	2.3
Upland	4.0			1.0	5.0
Fontana	6.8	5.5			12.3
CVWD	7.6	4.6			12.2
Total	**27.5**	**10.1**	**8.3**	**7.2**	**53.2**

Does not include recycle flows.

The Agency's historical wastewater flow trend is shown below in Figure 3-2. This figure depicts the raw sewage from each RWRP's tributary area and the total for all facilities combined.

FIGURE 3-2: REGIONAL PLANT WASTEWATER FLOW HISTORY

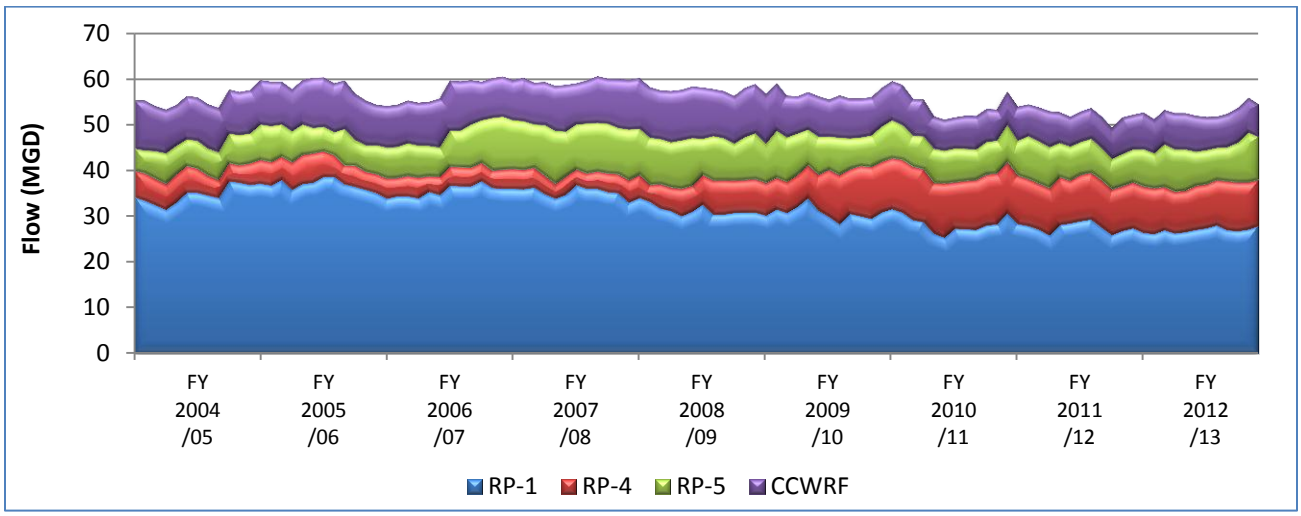
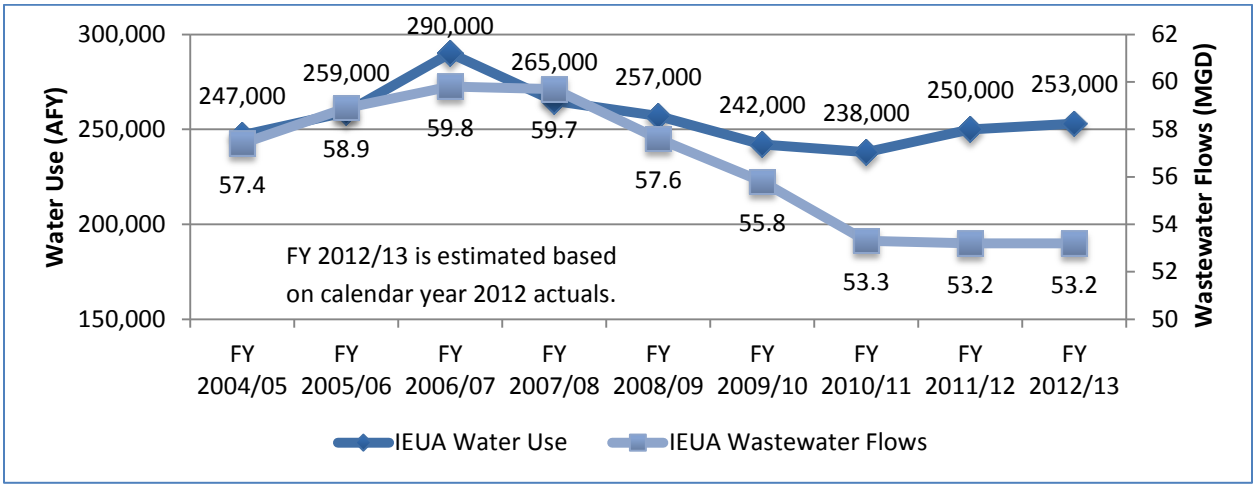


Figure 3-3 compares recent water use and wastewater flow trends. Both water use and wastewater flow decreased significantly during the three-year drought lasting from FY 2007/08 through FY 2009/10. This was followed by a very cool and wet FY 2010/11; however, FY 2011/12 was a relatively dry year and FY 2012/13 is projected to be similarly dry. Though water use in the Agency's service area declined for four years in a row, over the last two years, annual demands have increased by approximately 15,000 acre-feet. In the Agency's service area, overall water use (including agricultural production and recycled water) is still approximately 13 percent lower than the peak water use year, FY 2006/07. This sustained reduction in water use can be largely

attributed to public education, water use efficiency programs, ordinance enforcement, and the economic downturn.

FIGURE 3-3: RECENT WATER USE AND WASTEWATER FLOW TRENDS



3.2 Wastewater Flow Generation Factors

The backbone of the regional collection system and RWRP site plans have been planned and designed using the raw wastewater generation factor specified in the Regional Sewerage Service Contract—Exhibit J—which is 270 gallons per day per equivalent dwelling unit (gpd/EDU). The Agency still plans its regional system around Exhibit J. However, new developments are using less water due to water-conserving devices. The City of Ontario conducted an evaluation of new residential sewerage flow factors using the Edenglen development as a model. The City found that the data supported the use of a flow factor of 240 gpd/EDU for planning purposes. For this TYCIP, the future flow projections for the service area were performed using both 200 and 270 gpd/EDU in order to bracket the expected range of flow rates. These projections are used to determine the need for facility expansion within the ten-year planning horizon. With the required implementation of several new water use efficiency laws, the Agency expects newly-constructed and remodeled homes to continue to generate less wastewater on average. It is expected that the overall average service area flow per EDU will decline given the rising price of water, decreases in water supply availability, and greater need for water conservation. However, despite the projected decrease in wastewater flow per EDU, the Agency anticipates an increase in strength (BOD/TSS) relative to amount of flow. This may translate to increased treatment capacity needs and costs per unit of flow.

3.3 Anticipated Service Area Growth

FY 2011/12 Building Activity

In FY 2011/12, building activity within the Regional Sewerage System totaled 1,614 EDUs. As shown in Table 1, this was 104% of the initial projected level of building activity (1,554 EDUs). This resulted in approximately $7.7 million in revenue. The approved TYCIP budgeted building activity

was based on 1,100 EDUs ($5.2 million). Although two hospital expansions added approximately 600 EDUs in FY 2011/12, a soft housing market directly offset the growth in the region.

TABLE 3-2: FY 2011/12 FORECASTED AND ACTUAL BUILDING ACTIVITY

Contracting Agency	Forecasted Activity (EDUs)	Actual Activity (EDUs)	Actual Activity / Forecasted Activity (%)
Chino	187	217	116%
Chino Hills	107	63	59%
C.V.W.D.	121	194	160%
Fontana	305	289	95%
Montclair	132	40	30%
Ontario	697	476	68%
Upland	5	335	6700%
Total	**1,554**	**1,614**	**104%**

Forecasting growth within the Agency's service area has not been easy the past few years. With the significant drop in housing prices, limited credit availability and the softening real estate market, accurate forecasting has become a difficult task in Southern California. However, as shown in Figure 3-4, FY 2011/12 forecasts were quite close to actual building activity, unlike prior years for which forecasts and actual activity were significantly different. This underscores the effectiveness of the conservative planning strategy that the region has been forced to take; however, the region is beginning to see signs of increasing growth as many local developers are now completing their environmental work in anticipation of new construction projects. For example, FY 2012/13 building activity is anticipated to exceed 1,700 EDUs, surpassing the previous year's growth.

FY 2011/12 Building Activity Comparison by Contracting Agency

Figure 3-5 shows the breakdown of FY 2011/2012 building activity that occurred within the individual Contracting Agencies. Expansion of a hospital in the City of Upland accounted for approximately 300 of the 335 total EDUs. Another hospital expansion in the City of Ontario accounts for approximately 300 of the city's 476 total EDUs.

Implications of FY 2011/12 Building Activity on the Regional Sewerage System

Overall, there was approximately 0.44 million gallons per day (MGD) of new wastewater flow permitted during FY 2011/12, calculated using the 270 gpd/EDU capacity requirement from the Chino Basin Regional Sewerage Service Contract. There is adequate capacity within the four recycling plants to accommodate the total amount of growth experienced in the past year. Overall, flows are averaging about 53.2 MGD with a total system-wide permitted treatment capacity of 85.7 MGD.

FIGURE 3-4: FY 1988/89 TO FY 2011/12 FORECASTED AND ACTUAL BUILDING ACTIVITY

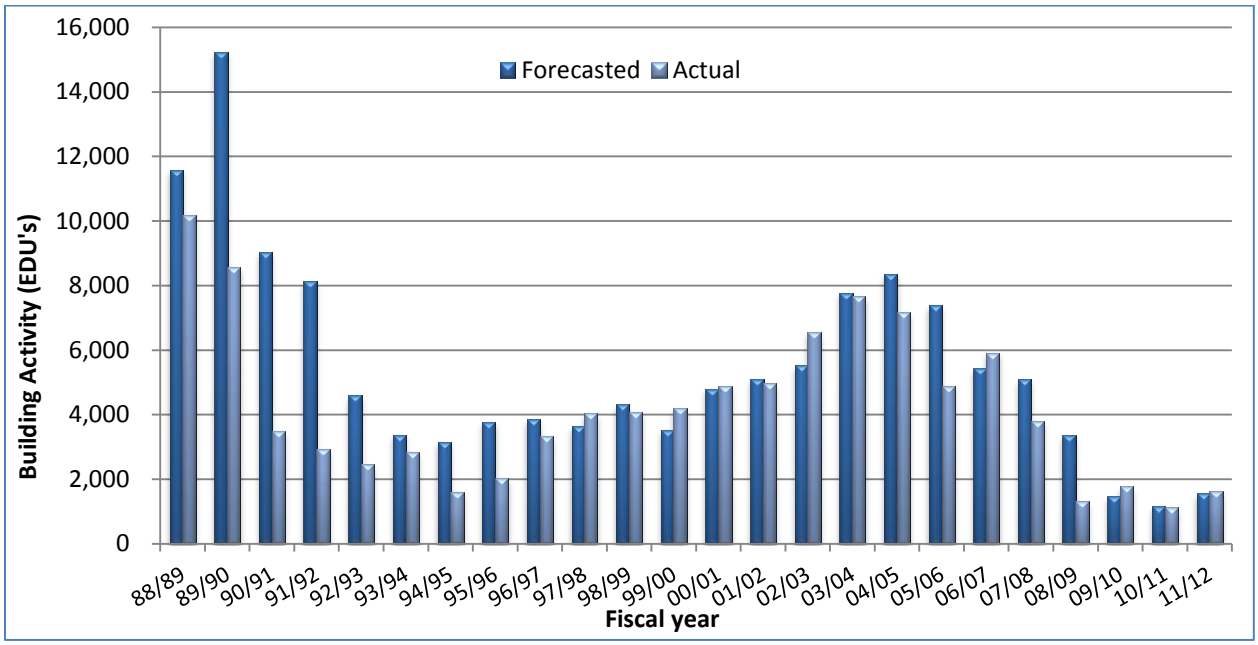
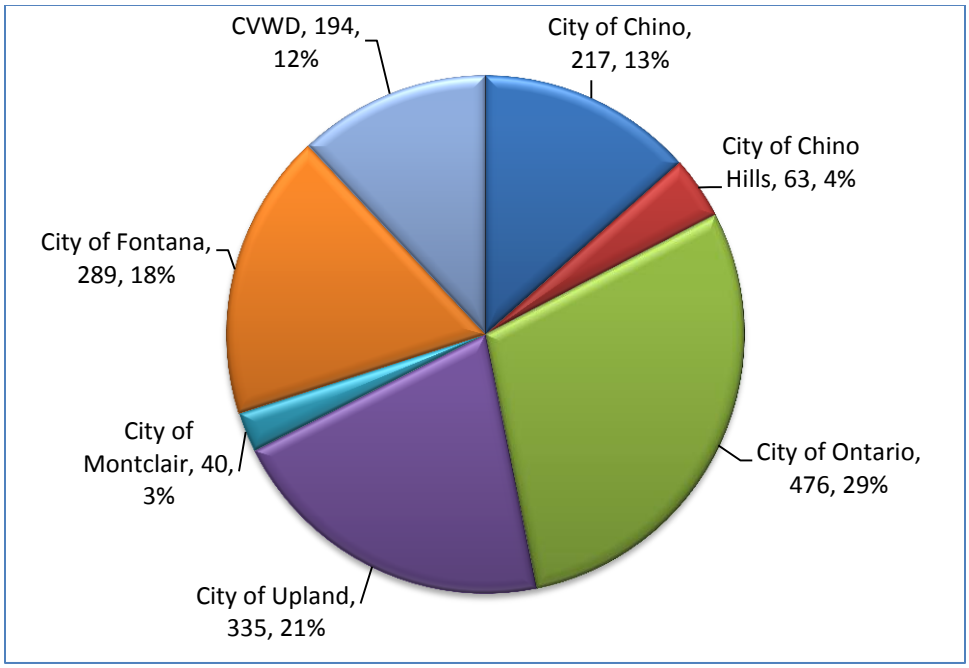


FIGURE 3-5: FY 2011/12 BUILDING ACTIVITY BY CONTRACTING AGENCY



It is important to note that the completion of the San Bernardino Avenue Lift Station in June 2009 enhanced the regional system's bypass capacity among the reclamation plants, which is currently accommodating the growth seen in the Cucamonga Valley Water District and the City of Fontana service areas. It also enhances the ability of the regional system to handle the forecasted flows for

the City of Ontario's New Model Colony, which is expected to double the City of Ontario's population over the next twenty-five years.

FY 2013/14 Ten-Year Capacity Demand Forecast

A survey of the Agency's Contracting Agencies is conducted every September to determine the rate of projected growth for the next ten years in terms of EDUs. It is called the Ten-Year Capacity Demand (TYCD) forecast. The results of the 2012 survey are summarized below in Table 3-3.

For FY 2013/14, the forecasted building activity is 2,927 EDUs. This is significantly higher than last year's building activity projection (1,158 EDUs) and next year's budgeted forecast (1,800 EDUs).

Over the next ten years, building activity is projected to total 33,715 EDUs. This is slightly higher than last year's TYCD projection of 32,570 EDUs. The City of Ontario is still anticipating growth from the New Model Colony to begin increasing in FY 2014/15, although, with the housing market in flux, it is difficult to predict exactly when the increase in building activity will occur. Total building activity is projected to peak in FY 2015/16 at 4,874 EDUs.

TABLE 3-3: TEN-YEAR CAPACITY DEMAND FORECAST BY CONTRACTING AGENCY

Fiscal Year	City of Chino*	City of Chino Hills	CVWD	City of Fontana	City of Montclair	City of Ontario	City of Upland	Total
	(EDUs)	(EDUs)	(EDUs)	(EDUs)	(EDUs)	(EDUs)	(EDUs)	(EDUs)
2013/14	272	335	364	363	352	1,100	201	2,987
2014/15	427	320	364	394	198	2,150	453	4,306
2015/16	367	360	364	424	34	2,700	625	4,874
2016/17	267	265	364	484	34	2,650	652	4,716
2017/18	272	420	364	484	34	2,050	637	4,261
2018/19	272	310	364	424	34	1,450	297	3,151
2019/20	272	179	364	363	34	1,450	279	2,941
2020/21	272	92	364	363	34	850	210	2,185
2021/22	272	35	364	363	34	850	229	2,147
2022/23	272	35	364	363	34	850	229	2,147
Totals	**2,965**	**2,351**	**3,640**	**4,025**	**822**	**16,100**	**3,812**	**33,715**

**Includes the projected growth in The Preserve.*

As shown in Figure 3-6, the TYCD forecasts have substantially dropped over the last five years. FY 2008/09 had a ten-year projection of 69,651 EDU's compared to FY 2013/14's ten-year projection of 33,715 EDU's. However, the last three years' ten-year projections have been very similar, along with a similar peak growth year, FY 2014-15 – FY 2015/16.

FIGURE 3-6: HISTORICAL BUILDING ACTIVITY AND GROWTH FORECASTS

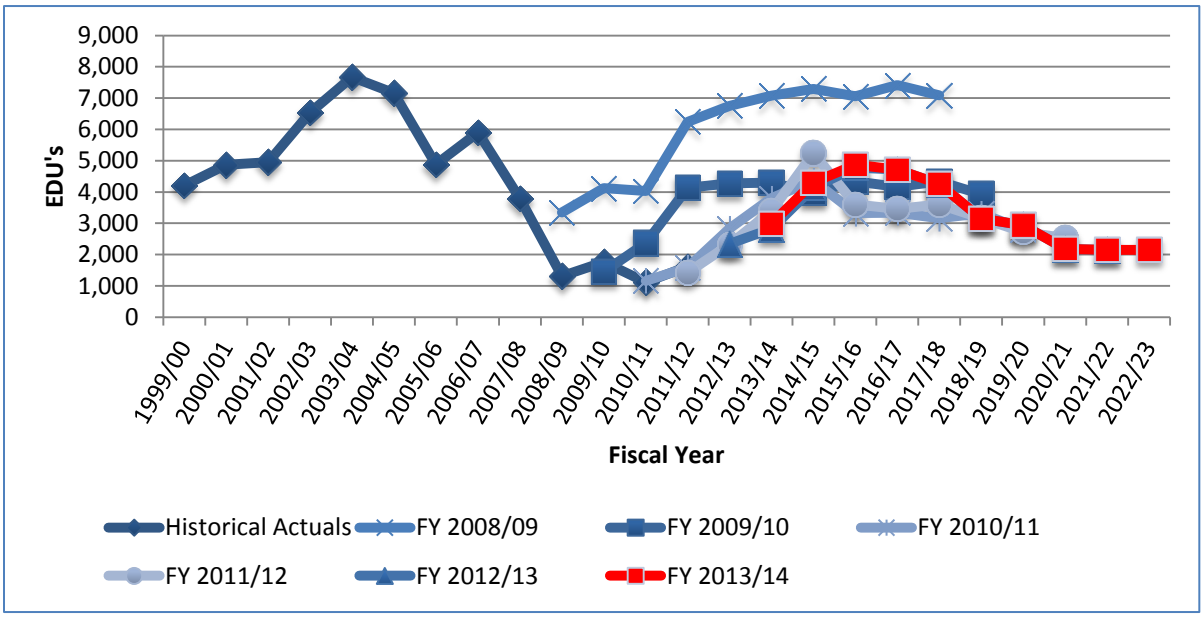


Table 3-4 presents the TYCD forecast by land use. Over the next ten years, building activity is projected to be approximately 78% residential and 22% commercial/industrial by EDUs.

TABLE 3-4: TEN-YEAR CAPACITY DEMAND FORECAST BY LAND USE

Fiscal Year	Residential (EDUs)	Commercial / Industrial (EDUs)	Total (EDUs)
2013/14	2,112	875	2,987
2014/15	3,489	816	4,306
2015/16	4,024	850	4,874
2016/17	3,814	902	4,716
2017/18	3,424	837	4,261
2018/19	2,467	684	3,151
2019/20	2,240	701	2,941
2020/21	1,649	536	2,185
2021/22	1,621	526	2,147
2022/23	1,621	526	2,147
Totals	**26,461**	**7,253**	**33,715**

3.4 Ten-Year Wastewater Flow Forecast

Table 3-5 and Appendix A present the Contracting Agencies' ten-year forecast of new EDU connections. The current service areas of each RWRP were used to allocate the projected sewage flows.

As shown in Table 3-5, consistent with the Regional Contract assumption that the average flow generated by each EDU in the service area is 270 gpd, the TYCD forecast predicts an additional flow associated with new development of about 9.1 MGD for the entire service area. Due to the New Model Colony development, the RP-5 service area is projected to experience the largest increase in raw sewage deliveries, at about 4.6 MGD. This is higher than last year's estimate of 3.7 MGD. The RP-1 and RP-4 service areas are also projected to have increased flows of about 2.7 MGD and 1.1 MGD, respectively. The CCWRF service area is projected to experience a lower increase in raw sewage deliveries of approximately 0.6 MGD.

TABLE 3-5: TEN-YEAR CAPACITY DEMAND FORECAST BY REGIONAL PLANT

Fiscal Year	RP-1		RP-4		CCWRF		RP-5		Total	
	EDUs	MGD	EDUs	MGD	EDUs	MGD	EDUs	MGD	EDUs	MGD
2013/14	1,170	0.32	349	0.09	213	0.06	1,255	0.34	2,987	0.81
2014/15	1,363	0.37	365	0.10	283	0.08	2,295	0.62	4,306	1.16
2015/16	1,280	0.35	394	0.11	400	0.11	2,800	0.76	4,874	1.32
2016/17	1,163	0.31	425	0.11	368	0.10	2,760	0.75	4,716	1.27
2017/18	1,185	0.32	425	0.11	266	0.07	2,385	0.64	4,261	1.15
2018/19	795	0.21	410	0.11	221	0.06	1,725	0.47	3,151	0.85
2019/20	762	0.21	380	0.10	199	0.05	1,600	0.43	2,941	0.79
2020/21	802	0.22	380	0.10	88	0.02	915	0.25	2,185	0.59
2021/22	823	0.22	380	0.10	74	0.02	870	0.23	2,147	0.58
2022/23	823	0.22	380	0.10	74	0.02	870	0.23	2,147	0.58
Totals	**10,166**	**2.74**	**3,888**	**1.05**	**2,186**	**0.59**	**17,475**	**4.60**	**33,715**	**9.10**

Note: Includes the projected growth in The Preserve.

Alternative flow forecast scenarios have been developed to evaluate the range of potential future flows based on either the Contracting Agencies' projections or IEUA budgetary projections and a range of flow generation factors from 200 to 270 gpd/EDU. Figure 3-7 below shows the projected flows for the entire service area using a flow factor of 200 while Figure 3-8 shows the projections using a flow factor of 270. The upper horizontal solid line is the combined capacity of the Agency's RWRPs. Figures 3-9 through 3-12 show expected flows for each RWRP at 270 gpd/EDU. Additional graphs in the Exhibits section at the back of the report show other alternative scenarios.

FIGURE 3-7: REGIONAL SYSTEM TREATED INFLUENT FLOW FORECAST (200 GPD/EDU)

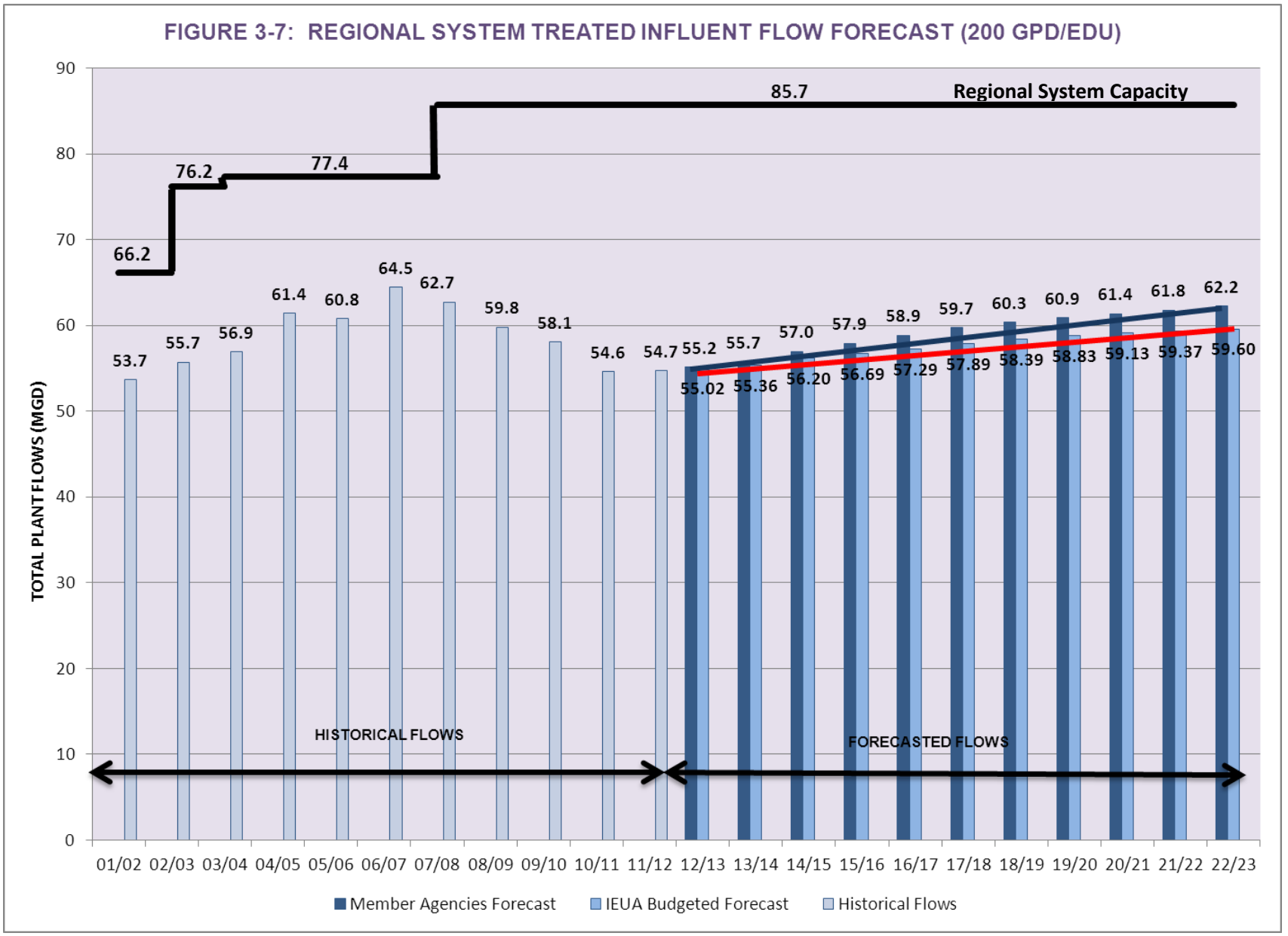


FIGURE 3-8: REGIONAL SYSTEM TREATED INFLUENT FLOW FORECAST (270 GPD/EDU)

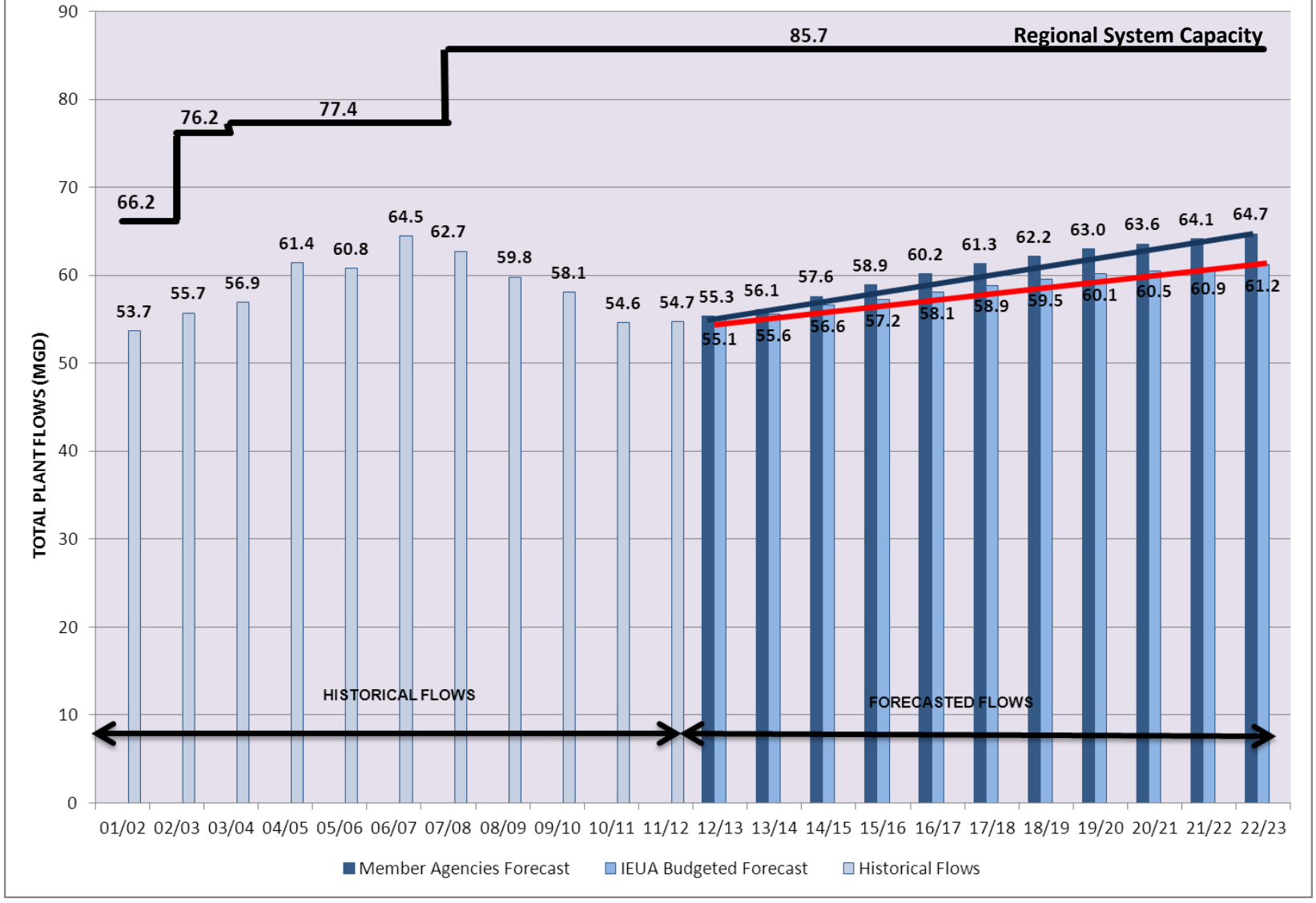


FIGURE 3-9: RP-1 TREATED INFLUENT FLOW FORECAST (270 GPD/EDU)

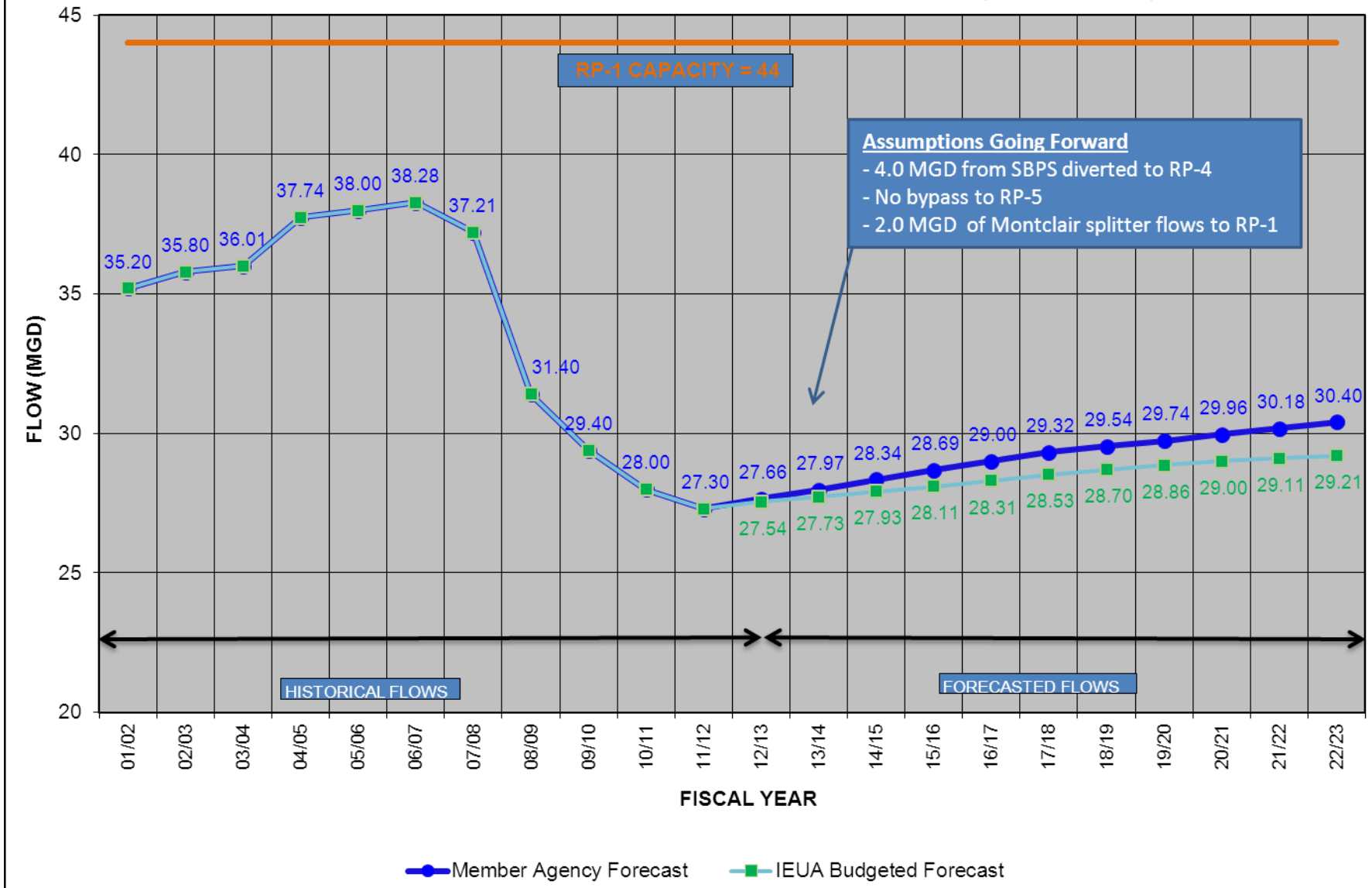


FIGURE 3-10: RP-4 TREATED INFLUENT FLOW FORECAST (270 GPD/EDU)

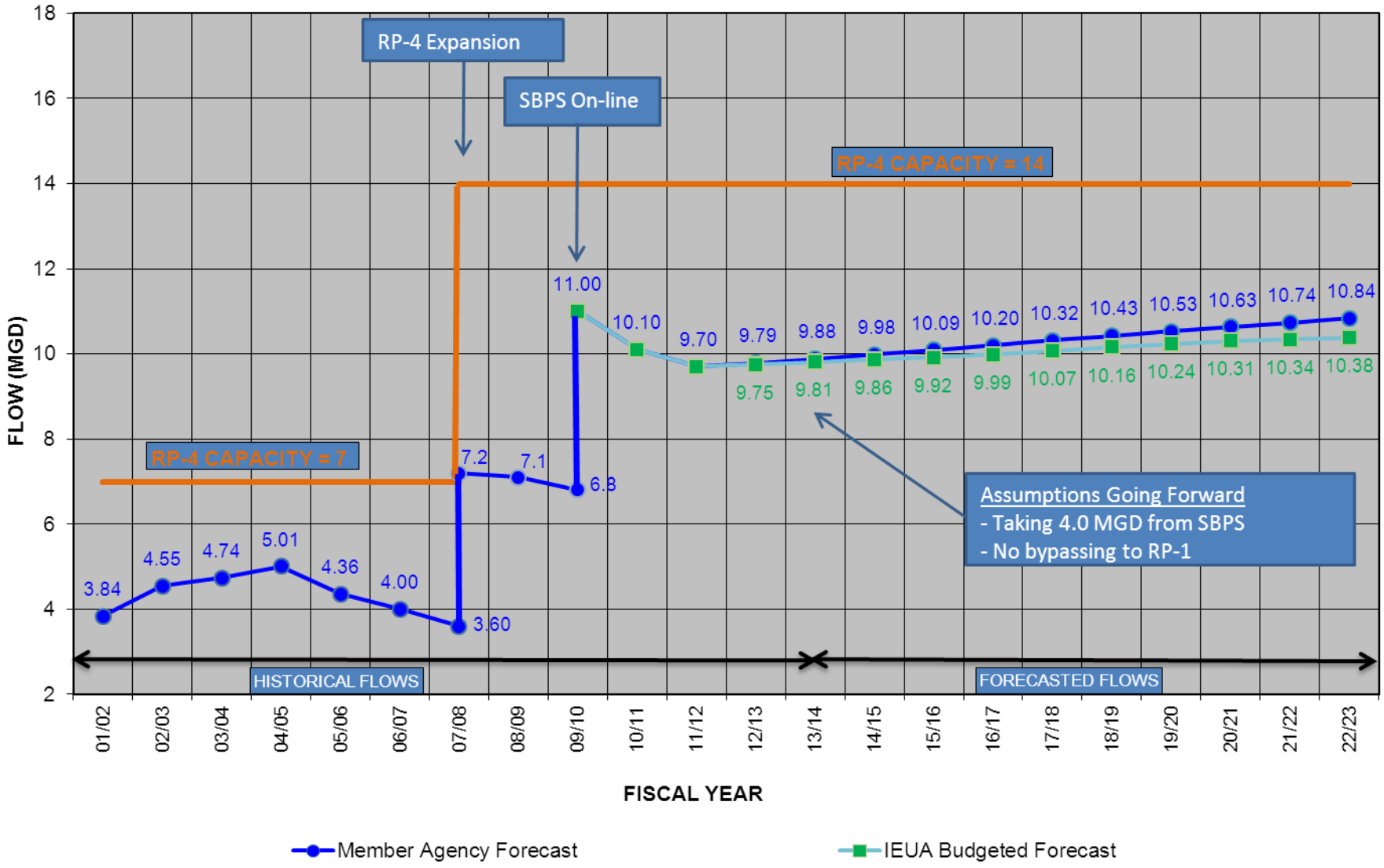


FIGURE 3-11: CCWRF TREATED INFLUENT FLOW FORECAST (270 GPD/EDU)

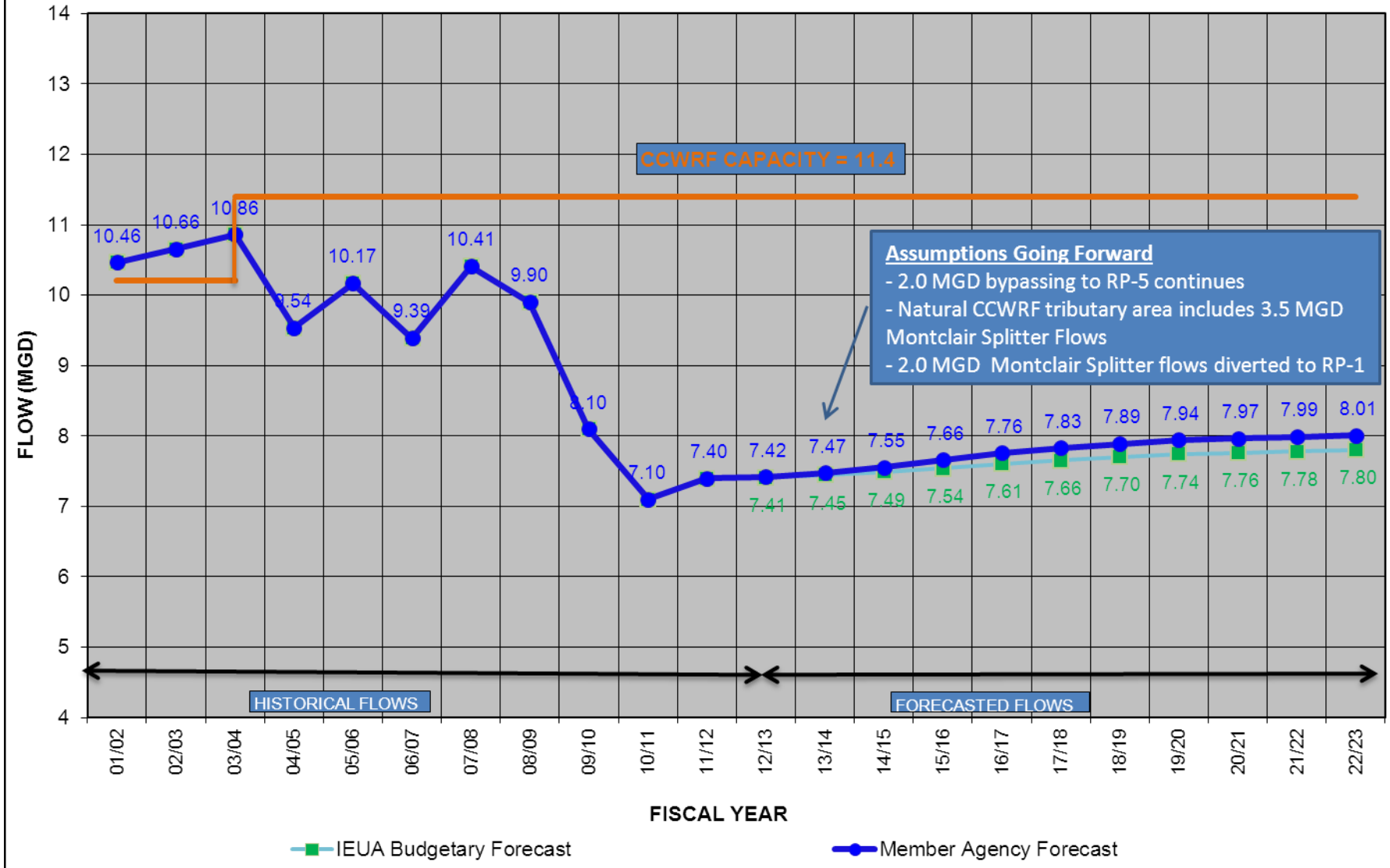
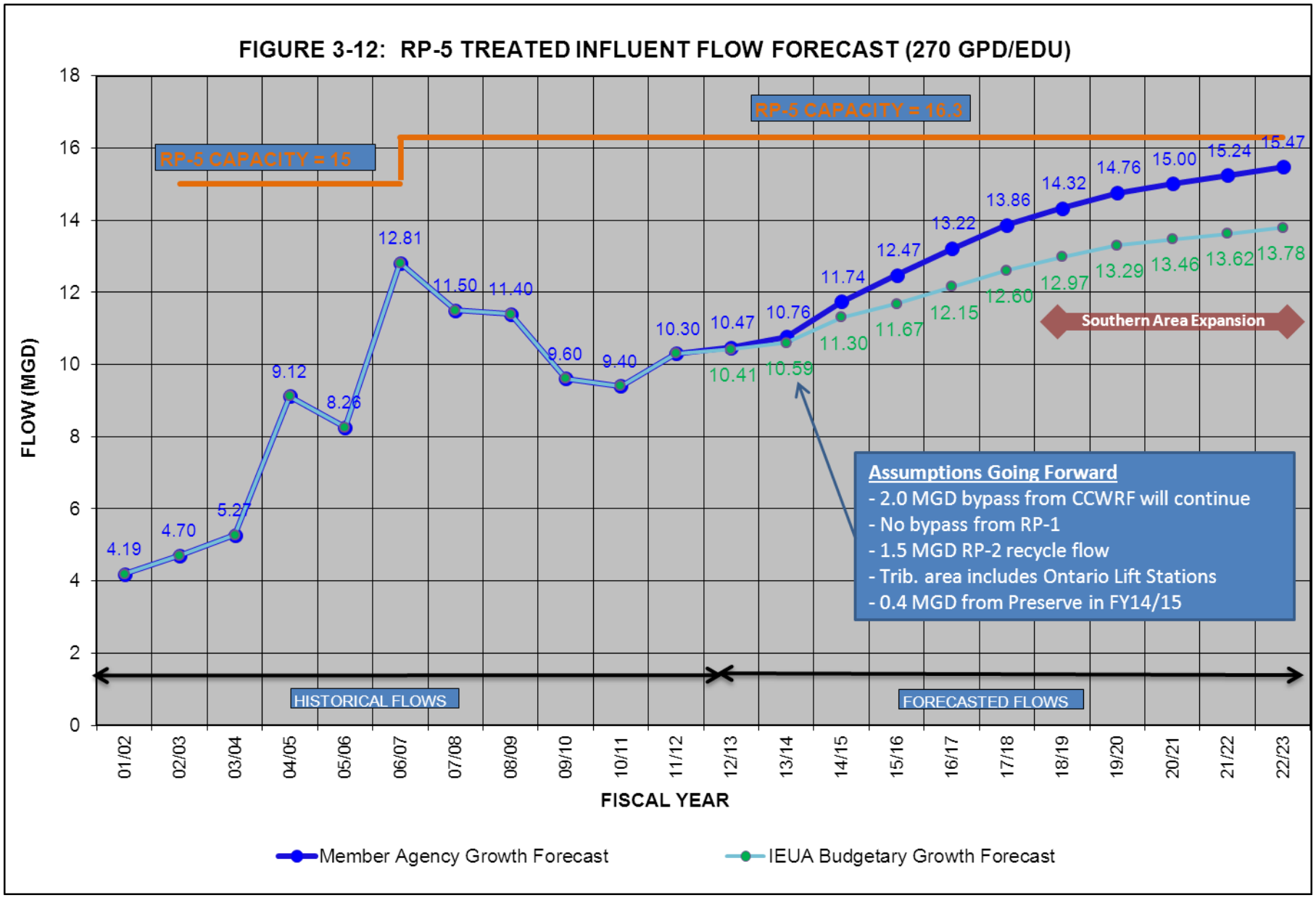


FIGURE 3-12: RP-5 TREATED INFLUENT FLOW FORECAST (270 GPD/EDU)



3.5 Impacts on Regional Facility Capacity Utilization

The Agency's four RWRPs are interconnected in a regional network. Agency staff routinely use the Agency's bypass and diversion facilities, such as the San Bernardino Lift Station, the Montclair Bypass, and the CCWRF bypass, to optimize the Agency's flows and capacity utilization. The Agency's bypass and diversion capabilities are described in Chapter 4. In general, flows are routed between regional plants in order to maximize recycled water deliveries while minimizing overall pumping and treatment costs.

Table 3-6 shows the current capacity utilization for each RWRP and the projected capacity utilization at the end of ten years. The current flow is 55.3 MGD, including 1.5 MGD of recycle flow, and the treatment capacity utilization in 65 percent. The comparable flow for FY 2022/23 is projected at 64.7 MGD and treatment capacity utilization may reach as high as 76 percent based on the Contracting Agencies' growth projections and the 270 gpd/EDU capacity requirement in the Agency's Regional Contract.

TABLE 3-6: REGIONAL SYSTEM FLOW AND CAPACITY UTILIZATION SUMMARY (MG)

	FY 2012/13 Actual*			FY 2022/23 Projection		
Regional Water Recycling Plant	Treated Influent Flow	Plant Rated Capacity	Percent Capacity Utilization	Treated Influent Flow	Plant Rated Capacity	Percent Capacity Utilization
RP-1	27.7	44.0	63%	30.4	44.0	69%
RP-4	9.8	14.0	70%	10.8	14.0	77%
CCWRF	7.4	11.4	65%	8.0	11.4	70%
RP-5	10.5	16.3**	64%	15.5	16.3	95%
IEUA Total	**55.3**	**85.7**	**65%**	**64.7**	**85.7**	**76%**

**Based on first six months of FY 2012/13 data.*

***RP-5's current discharge permit establishes the plant's rated capacity, including recycle flows, at 16.3 MGD.*

Table 3-6 Assumptions:

- Flow factor of 270 gpd/EDU and Contracting Agencies' EDU growth forecast
- Former Ontario Lift Station flow (2.5 MGD) considered part of RP-5 raw service area flow
- San Bernardino Lift Station routing 4.0 MGD (tributary to RP-1) to RP-4
- Montclair Interceptor flows (4.0 MGD) routed to RP-1
- 1.5 MGD of solids handling side-stream flow recycled from RP-2 to be treated at RP-5
- 2.0 MGD bypassed from CCWRF to RP-5

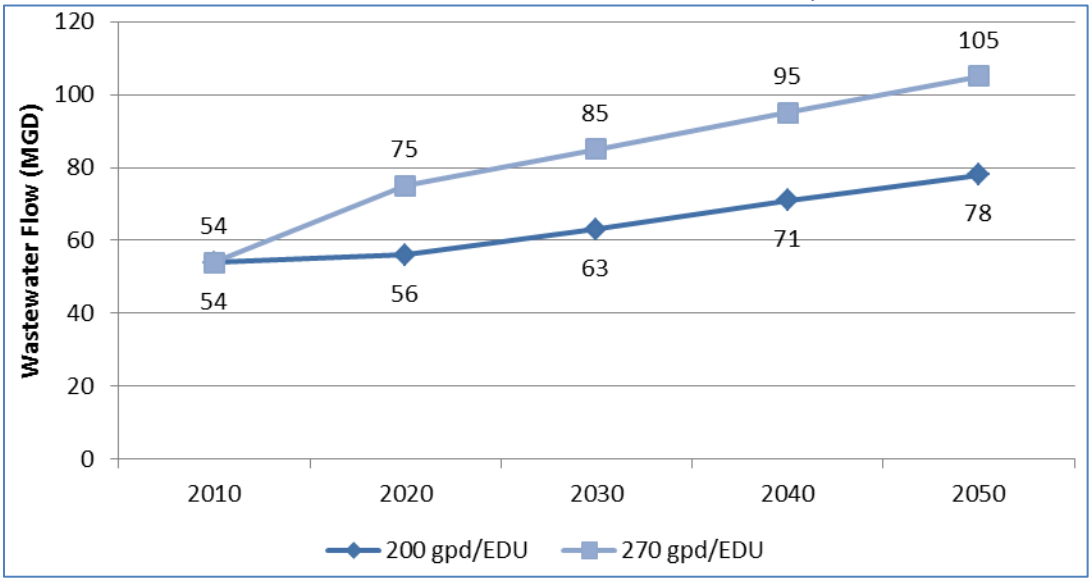
Based on this analysis, the Agency's treatment plant capacity is expected to be adequate for the projected flows for the next ten years. However, per Regional Water Quality Control Board (RWQCB) order, if capacity utilization exceeds 75 percent, the Agency is required to develop an expansion plan and submit the plan to the RWQCB. Since the current forecast predicts more than 75 percent capacity utilization, the Agency will begin updating the Wastewater Facilities Master Plan which was adopted by the Agency Board of Directors in August of 2002. The new Master Plan will consider future growth patterns and it will be integrated with water resources planning and recycled water demands. The Master Planning effort will make recommendations on the timing of plant expansions and the future plans for solids handling.

As shown in Table 3-6, capacity utilization will be different at each RWRP due to differences in expected growth in each portion of the Agency. The highest growth is expected to occur in the RP-5 service area and capacity utilization at RP-5 could reach as high as 95 percent. However, these projections assume that flows are routed between facilities the same way they are now, and that the areas served by each plant do not change. In reality, the Agency will use its bypass and diversion facilities to balance the flows between the facilities. For example, the Agency could stop bypassing 2.0 MGD of flow from CCWRF to RP-5. The bypassing has been necessary during construction at CCWRF, but the Agency is evaluating options for reducing the bypass. Another scenario that would reduce the flow at RP-5 is recommissioning the Whispering Lakes Pump Station in the City of Ontario. This would divert approximately 2.0 MGD from RP-5 to RP-1. The impacts of these alternative scenarios are shown on the ten-year flow projection graphs in the Exhibits section at the end of this report.

3.6 Fifty-Year Flow Projection

As indicated in Figure 3-13: Regional System 50-Year Flow Projections on the following page, wastewater flows have been projected to reach between a low of 78 MGD to a high of 105 MGD by the year 2050. These projections were developed considering current, historical and future growth information, as well as 2010 Urban Water Management Plan population projections. The lower projection uses 200 gpd/EDU and the higher projection uses 270 gpd/EDU. Conservation, water use efficiency, new 20 percent by 2020 legislation and additional flow monitoring will all play a part in achieving the lower projected ultimate flows.

FIGURE 3-13: REGIONAL SYSTEM 50-YEAR PROJECTION



Projections after 2030 are based on a 1%/year increase in population.

3.7 Wastewater Facilities Master Plan Update

The current Wastewater Facilities Master Plan that the Agency is operating under was developed in 2002. Since 2002, there have been substantial changes to the service area land use, water use, population estimates and wastewater flow projections. In conjunction with the anticipated increase in growth within the service area, an update to the Wastewater Facilities Master Plan has been scheduled for FY 2014/15. This will include supporting CEQA documentation as well.

The Wastewater Facilities Master Plan update will also include a detailed and focused evaluation of the anticipated growth in the southern service area (more than half of the ten-year period projected growth) and subsequent required expansions at the treatment plants, as well as the relocation of the RP-2 facility. The RP-2 facility location is currently below the future flood inundation level of 566-foot elevation, determined by the US Army Corps of Engineers. Considering the large anticipated growth in the southern service area will most likely require an RP-2 treatment plant expansion and that the RP-2 facility is below 566-foot elevation, relocation to the RP-5 campus (above 566-foot elevation) may solve both growth and flood inundation level concerns.

4.0 REGIONAL PROGRAM CAPITAL IMPROVEMENT PLAN SUMMARY

4.1 Regional Program Overview

The Agency's Regional Program encompasses the activities associated with construction and replacement of the Agency's wastewater, energy generation, and solids handling facilities. It includes the Regional Sewerage System consisting of the sewage collection trunk lines and pump stations, the wastewater treatment and disposal facilities, the recycled water production facilities, and also the facilities for generating energy and recycling biosolids.

The capital improvements planned for the Regional Program are consistent with the recommendations in the Agency's Wastewater Facilities Master Plan (adopted in 2002). A basic requirement of the capital improvement program is to keep pace with the needs for wastewater treatment and solids handling capacity based on future growth projections provided by the Contracting Agencies and managing Assets at all the facilities. The adequacy of the capital improvement program is demonstrated by the projected flow and capacity comparisons for individual regional plants presented in Exhibits I through V at the end of this report. The forecasted flow curves are adjusted to take into account the Agency's ability to make planned diversions within the system to optimize the use of existing facilities.

4.2 IEUA Regional Facilities

The Agency's Regional System includes 90 miles of regional sewage interceptors. The sewage lateral pipelines are owned and maintained by the individual contracting agencies. All of the wastewater is treated at the Agency's regional water recycling plants (RWRPs), which provide advanced tertiary treatment that meets or exceeds all California Department of Public Health Services (Title 22 regulations) and California Regional Water Quality Control Board waste discharge permit requirements.

4.2.1 Regional Water Recycling Plants

Figure 4-1 illustrates the service area boundaries for the Agency's four RWRPs. The four Regional facilities are: Regional Water Recycling Plant No. 1 (RP-1), Regional Water Recycling Plant No. 4 (RP-4), Regional Water Recycling Plant No. 5 (RP-5), and Carbon Canyon Water Recycling Facility (CCWRF). The biosolids produced at RP-4 and RP-1 are thickened, digested, and dewatered at solids handling facilities located at RP-1. Similarly, the CCWRF and RP-5 biosolids are treated at

Regional Water Recycling Plant No. 2 (RP-2). The stabilized and dewatered solids are transported to the Inland Empire Regional Composting Facility for processing into soil amendment.

RP-5 began treating and discharging wastewater in March 2004. At that time, the RP-2 wastewater influent was diverted to RP-5 for treatment. Since portions of RP-2 are located in the 100-year flood plain, liquid wastewater processing at RP-2 was discontinued and the plant is currently used only for processing solids from RP-5 and CCWRF. Biosolids processing at RP-2 will continue until the plant reaches the end of its useful life or until the RP-2 land can no longer be leased from the U.S. Army Corps of Engineers. In anticipation of this, land at RP-5 has been reserved for future solids processing facilities.

4.2.2 Regional Interceptor System

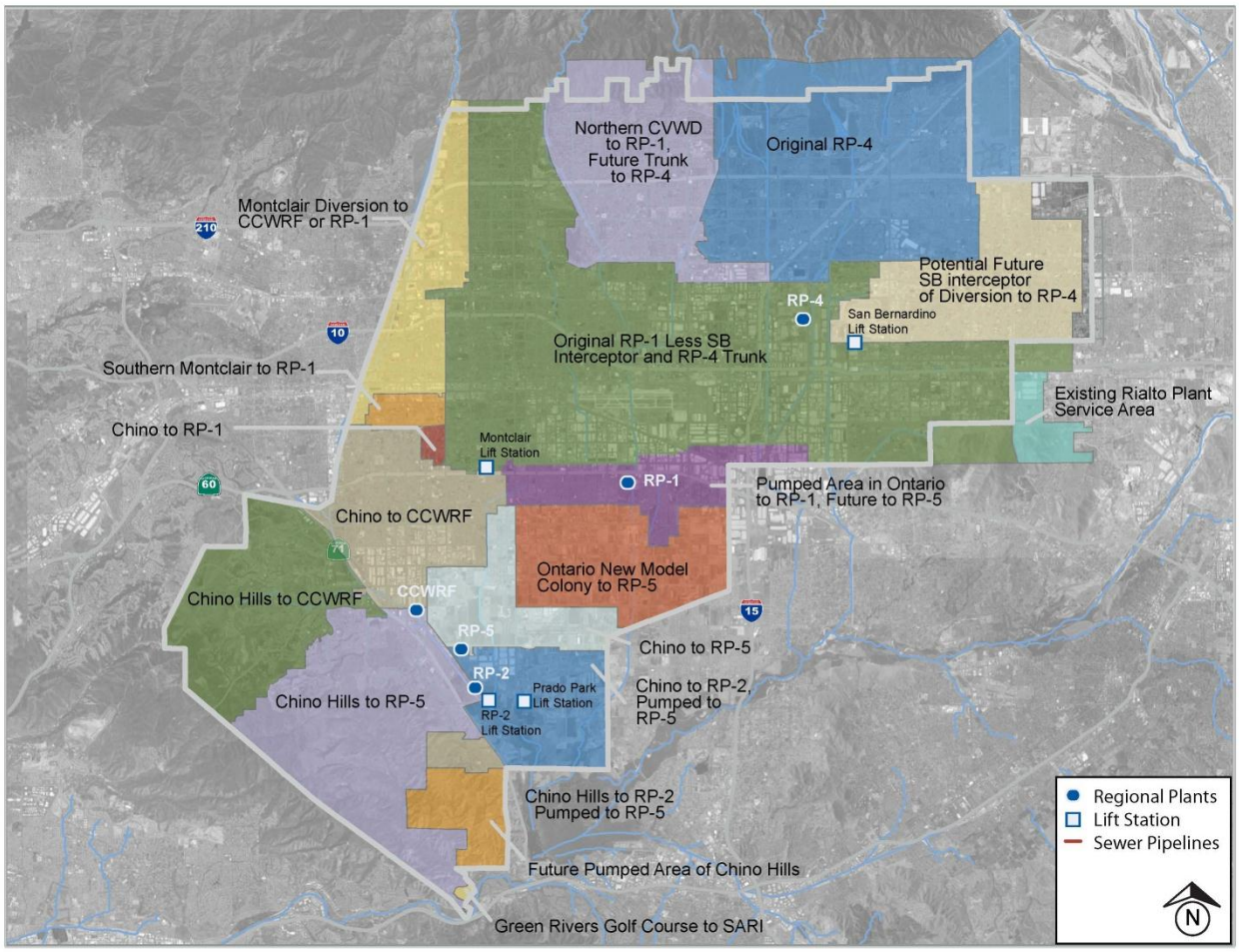
The Agency has a network of regional interceptor sewers that can be used to bypass flow from one water recycling plant to another to balance and optimize the use of treatment capacity. Currently, the regional interceptors can bypass flow from RP-4 to RP-1 and from CCWRF to RP-5. In addition, primary effluent can be bypassed from the RP-1 equalization basins to RP-5. Figure 4-2 illustrates the existing regional trunk wastewater system and tributary areas. The main routes for bypassing/diverting flow are:

- Operators can bypass up to 6 million gallons per day (MGD) from RP-4 to RP-1 through the Etiwanda Interceptor.
- Operators can bypass flow from CCWRF to RP-5 through the Chino Interceptor-- typically 1 to 2 MGD.
- A portion of the flow from the Cities of Upland and Montclair (about 4 MGD) can be diverted either to CCWRF, through the Westside Interceptor, or to RP-1, via the Montclair Lift Station and Montclair Interceptor. Typically, most of the flow is routed to CCWRF to avoid pumping costs.
- Primary effluent and sludge can be diverted from the RP-1 equalization basins into the Eastside Interceptor and then it flows by gravity to RP-5. Up to nine MGD could potentially be bypassed; however, operational experience has shown that one to two MGD is currently the optimum in terms of wastewater treatment plant performance.

As shown on Figure 4-1, the Agency has four wastewater lift stations:

- The Montclair Lift Station pumps wastewater from portions of Montclair, Upland, and Chino to RP-1.
- The Prado Park Lift Station pumps wastewater from the Prado Regional Park in the City of Chino to RP-5.
- The RP-2 Lift Station, which pumps flow from the southeastern portions of the cities of Chino and Chino Hills to RP-5.
- The San Bernardino Avenue Pump Station, which pumps a portion of the flow from the City of Fontana to RP-4.

FIGURE 4-1: REGIONAL PLANT SERVICE AREA BOUNDARIES



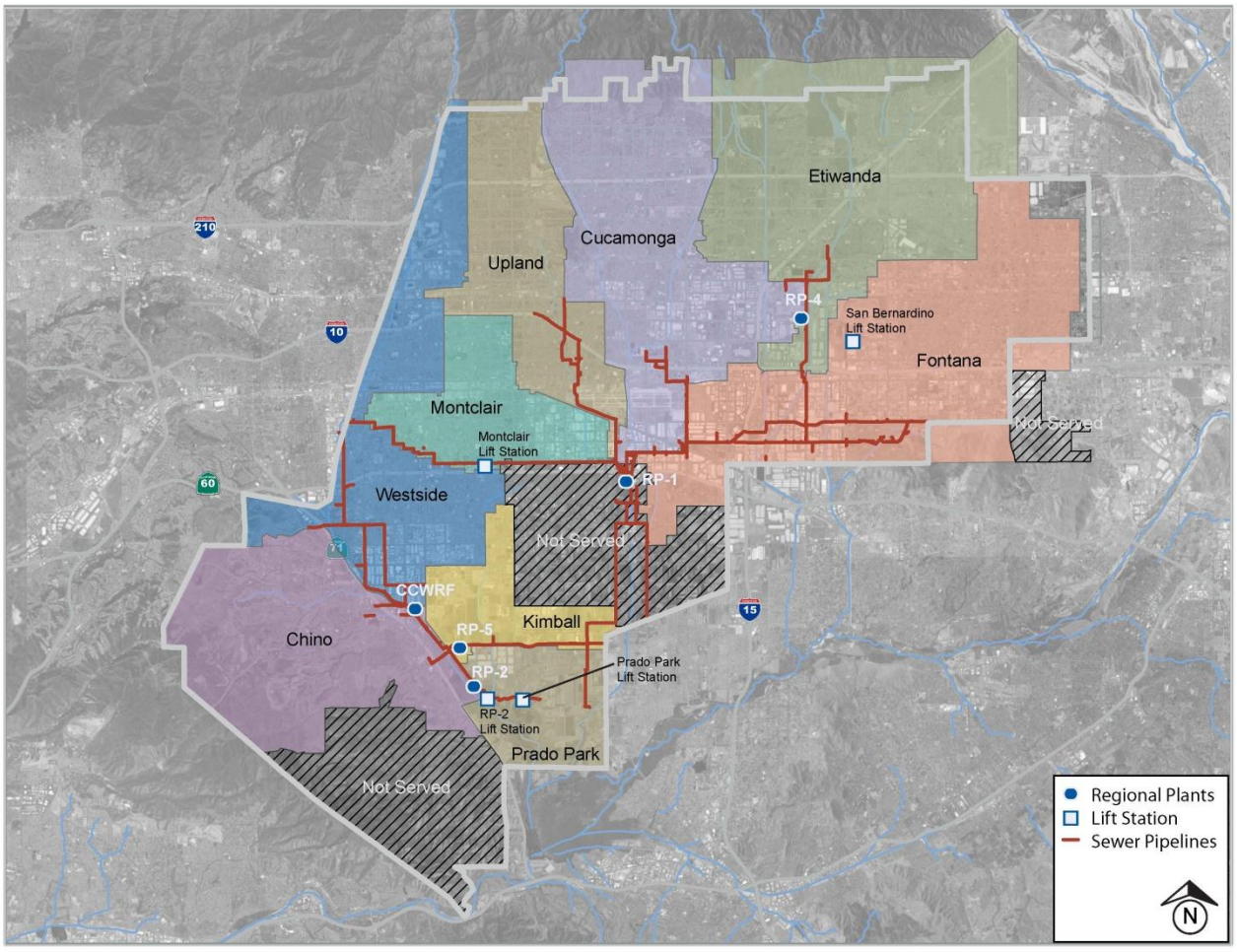
4.3 Regional Program Capital Projects

The current Regional Program emphasis is on repair and replacement of existing equipment and structures, providing system redundancy where needed to guarantee performance and compliance, and achieving energy sustainability. This year's Regional Program Ten-Year Plan recommends $101.8 million in capital project expenditures, including $49.5 million in the Regional Capital (RC) Fund and $52.3 million in the Regional Operations (RO) Fund. The largest projects (in terms of costs over the next ten years) are listed in Table 4-1.

TABLE 4-1: REGIONAL WASTEWATER PROGRAM—MAJOR CAPITAL PROJECTS

Project Number	Project Title	FY 13/14	FY 14/15	FY 15/16	FY16/17-FY22/23	Total TYCIP FY13/14-FY22/23
EN08009	New Operations Laboratory	-	-	1.1 M	14.0 M	15.1 M
EN11036	HVAC & Server Room Fire Suppression Impr.	1.2 M	0.6 M	0.3 M	-	2.1 M
EN13016	SCADA Enterprise System	0.9 M	2.0 M	2.5 M	4.5 M	9.9 M
EN13046	RP-1/RP-2 Flare Replacement	0.6 M	1.0M			1.6M
EN13049	RP-2 Digester #4 Dome Replacement	1.8 M	-	-	-	1.8M
EN14009	CM Misc RC Const. & Emerg. Projects	0.3 M	0.2 M	0.3 M	1.7 M	2.5 M
EN14012	RP-2 Drying Beds Rehabilitation	0.6 M	-	-	-	0.6 M
EN14016	RP-5 New Emergency Basin Pump Station	-	0.2 M	0.8 M	0.8 M	1.8 M
EN14017	RP-5 Mixers/Backwash PS/Alum System Upgrade	-	-	0.3 M	1.8 M	2.1 M
EN14018	RP-4 Process Improvements	0.2 M	1.4 M	-	-	1.6 M
EN14019	RP-1 Headworks Gate Replacement	0.7 M	1.0 M	-	9.0 M	10.7 M
EN14020	RP-1 Sludge Thickening System Improvements	0.3 M	1.0 M	0.6M	6.6 M	8.5 M
EN14021	RP-1 Secondary Clarifier Asset Rehab	0.8 M	1.0 M	1.0 M	2.5 M	5.3 M
EN14026	Misc. RO Constr. & Emerg. Project	0.3 M	0.2 M	0.3 M	1.7 M	2.5 M
EN18003	RP-2 Flare Replacement				2.0 M	2.0 M
EN22001	RP-5 Liquids and Solids Processing				90.5 M	90.5 M
Total of Major RC/RO Projects above		**$7.7 M**	**$8.6 M**	**$7.2 M**	**$135.1 M**	**$158.6 M**
Total of All RC/RO Projects in TYCIP Budget		**$20.0 M**	**$14.0 M**	**$21.1 M**	**$216.9 M**	**$272.0 M**

FIGURE 4-2: REGIONAL WASTEWATER TRUNK SYSTEM & TRIBUTARY AREAS



In the FY 2013/14 TYCIP, $90.5 million was included for treatment plant expansion in the Southern Service Area to expand the flow capacity of the Agency's Regional Wastewater Facilities to better meet projected demand increases.

The following projects will be completed in FY 2012/13:

- RP-2 Flare Control Panel Upgrade (EN05050.04)
- CCWRF Secondary Clarifier Rehab Phase 1 (EN11045.00)
- 800 Zone Flow Meter Installation (EN13025.00)
- IERCF Belt Conveyor Catwalk Improvements (RA12012.00)
- RP-4 Power Distribution Assessment and Repair Project (EN12028.00)
- Northwest Recycled water SCADA Upgrades (WR11018.00)
- IERCF Structure Protection (RA12009.00)
- Philadelphia Pump Station Wet Well Condition Assessment (EN13021.00)
- Turner Basin Turnout Capacity Improvements (EN11050.00)
- RP-1 Fuel Cell (EN10012.00)
- Memorial Park Lateral 11th Street Lateral (EN11047.00)
- 1630 W. Recycled Water Pipeline Segment A (WR08023.00)

- RP-4 Pond Repair (EN11028.00)
- RP-1 Outdoor Lighting Improvements (EN11040.00)
- RP-1 930 Pump Station Fifth Pump (EN11046.00)
- CCWRF Tertiary Filter Media Replacement and Rehabilitation (EN11041.00)

Major projects are further defined below:

- HVAC & Server Room Fire Suppression Impr. (EN11036) (RC Fund)
  - This project is to evaluate, design and modify existing HVAC systems that serve critical areas that have a high probability of catastrophic failure. It also evaluates the installation new electrical fire suppression system using inert gases such as an Inergen system, similar to those installed at the Agency's Headquarter SCADA and Server Rooms. These HVAC and server rooms serve the recycled water and treatment systems.

- Asset Improvement and Replacement (EN13015, EN08013, and EN08023)(RO Fund)
  - This project includes designing the replacement of wastewater equipment or processes at any of the Regional Wastewater Facilities at end of useful life. It includes phased repair or replacement of essential equipment and major processes based on the priorities and schedule identified during the detailed 2005 RP-1 Condition Assessment Study, as well as evaluation of detailed physical condition assessments for critical risk systems identified in FY 2011/12 plant assessments.

- SCADA Enterprise System (EN13016) (RO Fund)
  - The SCADA Enterprise System will eliminate the multi-vendor platforms currently operating as islands of automation. The design and construction of a highly-reliable, scalable, Enterprise SCADA system that enables the control of any facility from any location, unattended operation, integration with the Business system, and supports system-wide, wastewater treatment, recycled water, and groundwater supply-demand management. The Enterprise will be a highly functional and user-friendly solution, consolidating data from all facilities and providing accessible information.

- RP-5 Mixers/Backwash PS/Alum System Upgrade (EN14017) (RC Fund)
  - The project includes the evaluation, design, and modification of the aeration system; filter backwash pump station and primary splitter box; and alum storage system. These modifications will enhance the RP-5 process performance.

- RP-1 Headworks Gate Replacement (EN14019) (RO Fund)
  - This project will replace fifteen headworks gates and the bar screen system at RP-1. Out of the seventeen gates inspected, fifteen gates were found to have significant deficiencies that justify full replacement of the gates and embedded gate frames. The bar screen system will also be replaced with a more effective screening system to reduce unwanted plastics and rags from entering the secondary clarifiers and solids digesters.

- RP-1 Sludge Thickening System Improvements (EN14020) (RC Fund)
  - Current thickening system for the primary sludge is operating at or near the GT's current design limitation without any redundancy or additional capacity. In order to maintain proper digester gas production as needed for the fuel cell system, an improved GT or a redundant GT is needed. The scope entails the design and engineering effort to prepare the construction documents and the cost for constructing the improvements. Additionally, a Master Plan of the process will be conducted to address future technology and staging of additional improvements.

- RP-1 Secondary Clarifier Asset Rehab (EN14021) (RO Fund)

  This project will rehabilitate the Secondary Clarifiers at RP-1. As per asset system improvements evaluation, the remaining four secondary clarifiers require rehabilitation and replacement of clarifier assembly. The system is over 25 years old, and it is listed as a critical rehabilitation under the asset management program.

- CCWRF Secondary Clarifier No. 3 Rehab (EN14027) (RO Fund)
  - The CCWRF has three secondary clarifiers that have been in service since 1993. With the clarifiers and their associated equipment approaching the end of their service life, it is vital to rehabilitate the clarifier and replace antiquated equipment. Within the last years, two secondary clarifiers (1&2) were rehabilitated. The project will rehabilitate the Secondary Clarifier No. 3 and replace most of its equipment.

The Agency's facility control systems are over 20 years old and large portions are coming to the end of their useful lives. The Facilities SCADA (Supervisory Control and Data Acquisition) Master Plan, completed in FY 2011/12 was undertaken to address the issue of the aging Control Infrastructure as part of the Agency Automation Program. The Master Plan identified a migration from the current Invensys Foxboro Distributed Control System (DCS) to a Rockwell Automation SCADA system for a robust Agency-wide Enterprise solution. The design phase of the Agency SCADA Migration Project will begin in FY 2012/13, and will be followed by five projects over five years for a total budget of $10 million.

Other capital projects in the Regional Program TYCIP relate to essential system and equipment repair, replacement, and upgrade. The following is a list of fourteen new large capital projects over $1 million, which were created this year. For additional project details, refer to project forms at the end of this chapter.

- GWR and RW SCADA System Upgrades (EN12019)
- Headquarters Central Plant (EN11010)
- HVAC & Server Room Fire Suppression Improvement (EN11036)
- Northwest SCADA Upgrades (WR11018)
- RP-1 & RP-2 Boiler Replacements (EN11042)
- RP-1 Flare Replacement (EN13046)
- RP-2 Digester No. 4 Dome Replacement (EN13049)
- RP-2 Digester Gas Modification (EN05050)
- RP-2 Flare Replacement (EN18003)
- RP-5 Anoxic Mixers, Filter Backwash PS, Alum Upgrades (EN14017)
- RP-5 Solids Processing Expansion (EN22001)
- RP-5 System Facilities Upgrades and Improvements (EN06020)
- SCADA Enterprise System (EN13016)

4.3.1 Northern Service Area (RP-1, RP-4)

In general, the RP-1 projects in the TYCIP involve energy efficiency and modernization of facilities. The RP-1 projects, which involve major expenditures in the next two fiscal years, fall under the Asset Management Program. They include: HVAC replacement and upgrades at various locations; RP-1 Flare addition; RP-1 Asset Replacement; and miscellaneous capital upgrades. These projects all focus on maintaining facilities at RP-1 to ensure that performance standards and regulatory requirements are met. Several of the electrical rooms, server rooms, and buildings have HVAC systems that have reached the end of their useful lives and need to be replaced. Replacement of these systems will result in better performance and longevity of the equipment in the buildings.

The RP-1 Asset Replacement Project will also have a major impact on the aging infrastructure within the RP-1 facility. The project was initiated in July 2006 to implement several of the recommendations of the RP-1 Condition Assessment Study conducted by Metcalf and Eddy in 2005. The study evaluated all of the major equipment and provided a prioritized list of improvements that need to be completed for the facility over a ten-year time period. Improvements included repairs, rehabilitation or studies to assess the condition of the equipment and devise a proper response as needed. The project was divided between three phases to address the items by priority level. The recommendations are being implemented over six years, starting in FY 2009/10, with most of the construction occurring in FY 2010/11 and beyond.

The Agency has entered into a power purchase agreement (PPA) using Fuel Cells to generate 2.4 mega-watts (MW) of power at RP-1 in lieu of using internal combustion engines. The fuel cell project went into operation in January 2013. The Agency has also entered into a PPA using wind turbines as an alternative energy source at the RP-4 facility to generate one MW of power. The wind turbine is currently operational and producing power. Wind power is a green energy source that is

becoming more viable for small to medium-sized facilities. See Chapter 5 for additional details on the Agency's energy management strategy.

4.3.2 Southern Service Area (RP-2, RP-5, CCWRF)

The Agency is in the process of doing a full condition assessment of CCWRF. This is one part of the overall Asset Management Process that will be integrated into SAP, the Agency's Enterprise Resource Management System.

CCWRF Aeration blower ducting was identified as a project that would dramatically improve energy efficiency of the system. The project is currently in the construction phase and will be completed by the end of this fiscal year.

The only major project specifically planned for the RP-2 biosolids handling facility is the RP-1 & RP-2 Boiler Replacement Project. This project is necessitated by the South Coast Air Quality Management District (SCAQMD) Rule 1110.2. When the solids handling capacity at RP-2 is exceeded or the RP-2 facilities reach the end of their useful life, the Agency intends to move the Southern Service Area's biosolids handling operations to the RP-5 SHF. In the meantime, the Agency has negotiated a PPA for converting and using the RP-5 SHF as a processing facility for food waste with use of the resulting biogas for power generation. The plans for the facility are in the design, testing and permitting phase.

RP-5 is expected to be the first wastewater plant to reach its rated capacity because of the high growth potential in the Southern Service Area. Future projects, such as re-commissioning of the Whispering Lakes Lift Station, have been identified and may be implemented in the next three to four years to alleviate flow from RP-5 and were assigned a budget of $90 million for the FY 13/14 TYCIP. The CCWRF has also been re-rated to a higher capacity, which will alleviate some flow from RP-5.

4.4 Asset Management Program

The purpose of the Agency's Asset Management Program is to develop a comprehensive roadmap to address the Agency's infrastructure challenges. The Agency has invested significant resources in each of the facilities. With this investment, the Agency places the highest importance on maintaining established "Levels of Service," (LOS) and preserving asset reliability while protecting the health and safety of staff and the public.

The Asset Management Program consists of fundamental steps to assemble a comprehensive list of assets and to identify their respective criticality to the successful operations of the Agency. The determination of an assets' criticality rests with its capacity to maintain the Levels of Service the Agency provides to its member agencies. Assets with the greatest criticality are the subject of detailed condition assessments. Information collected from the condition assessments aid in the management of the asset, both in fine-tuning preventive maintenance programs and identifying capital rehabilitation projects.

Levels of Service serve to guide the development of the management strategies by aligning risk and economic factors. Through this alignment, the Agency is able to prioritize its use of funds and resource assignments to meet its customer-focused objectives. Preliminary information and data indicate the Agency should consider reserving $20 million each year or 2.0% of the value of the Agencies assets for the preservation of the Agency's assets.

The Agency anticipates startup expenses for the Asset Management Program to be higher than for an established program. Deferment of capital improvements contributes to the Asset Management Programs startup expenses. Further development of the Asset Management Program will include the introduction of a 50-year rehabilitation and replacement schedule for Agency assets. This schedule will integrate with the Agency's Long Range Finance Model to forecast funding required for supporting timely rehabilitation and replacement of assets.

During FY 2012/13, the Asset Management Program continued developing a relatively quick and responsive method to review and document the criticality of systems at each facility. Systems identified with a high-risk signature were placed on the pending capital projects list for full condition assessment. The following facilities were recommended for further evaluation and condition assessment:

- Linear assets at CCWRF;
- Electrical System at RP-5; and
- RP-2 Lift Station
- RP-1 Settling System in the Primary Treatment Process
- RP-4 Settling System in the Primary Treatment Process
- RP-5 Settling System in the Primary Treatment Process

Criticality assessments at RP-1 and RP-4 were completed in FY 2012/13. These assessments will be the basis for generation of future capital projects.

4.4.1 Asset Management Program History

The Agency's Asset Management Program began in 2004 when the Board of Directors and the Management Team took the initial steps in adopting an Asset Management Program for the condition assessment of the Agency's physical assets. The Agency adopted "Development of an Asset Management Strategy and Program" in its FY 2005/06 Budget. Additionally, the Board requested to include an Asset Management Program in the Agency's Mission Statement. The four major objectives for the Agency's asset management program include:

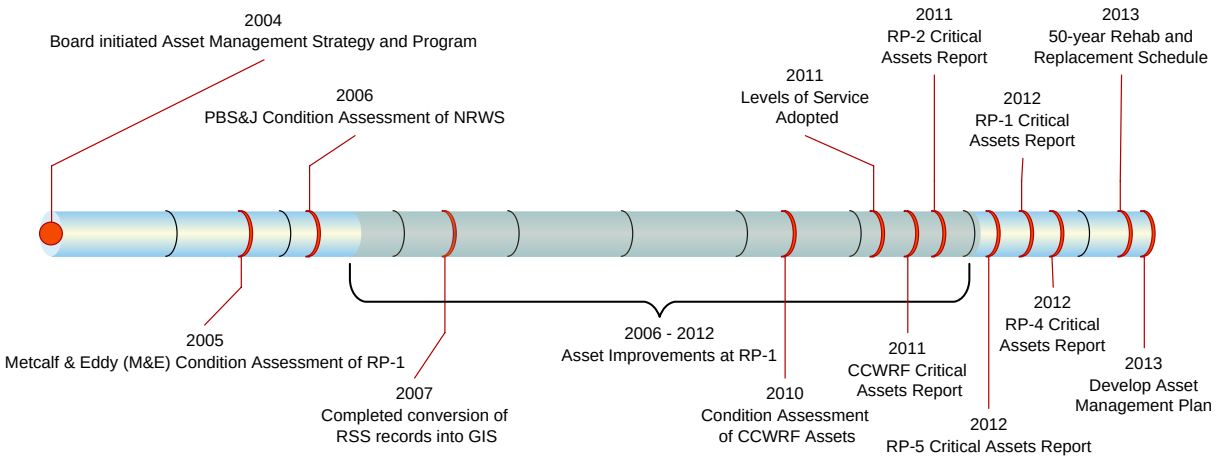
- Identify and compile an inventory of the Agency's major capital assets;
- Assess the current condition and remaining useful life of each asset;
- Identify rehabilitation and replacement needs and costs for the physical assets; and
- Develop a replacement capital improvement plan and replacement reserve policy.

In 2006 a revised work plan developed for the Agency's Asset Management Program involved the following objectives:

- Identify and create an inventory of the Agency's "major" capital assets;
- Assess the current condition and remaining useful life of each piece of asset;
- Evaluate, select, and possibly procure asset maintenance management tools;
- Identify rehabilitation and replacement capital improvement plan;
- Institute a replacement reserve policy; and
- Develop an asset management system implementation plan.

The following timeline (Figure 4-3) illustrates the asset management activities and accomplishments since its inception.

FIGURE 4-3: ASSET MANAGEMENT TIMELINE



4.4.2 Aging Assets

The Agency collects and treats wastewater and produces recycled water within the five (5) major treatment plant facilities in its service area as follows:

1. RP-1, the oldest plant built in 1948
2. RP-2, treating solids only, began operations in 1960
3. CCWRF, commissioned in 1992
4. RP-4, originally built in 1997 and expanded in 2009
5. RP-5, the most recently constructed plant, in service in 2004

Based on the Level of Service that the Agency strives to provide, a strong Asset Management Program must be in place to cope with the challenge of maintaining the aging infrastructure within those plants. The Agency's assets have been estimated as high as one billion dollars based on replacement cost. Industry standards suggest between one and three percent of an agency's assets be replaced per year to maintain an adequate asset management program. The FY 2013/14 – FY 2023/24 TYCIP allocates slightly more than one percent per year for asset replacement.

The Agency continues to focus efforts to improve business processes that utilize the Agency's enterprise software tools to capture assets, including all related equipment specifications, performance characteristics, and financial data. Through an integrated process, the Agency expects

to derive a holistic view of assets that support decision making in various areas such as maintenance programs, business case evaluation, and long term financial planning.

4.4.2.1 Laboratory Facility Needs

The Laboratory consists of two buildings, the original facility built in 1979, and the expansion building built in 1997. At present, the Laboratory facilities are insufficient. The current Laboratory facilities are crowded; the ventilation system needs improvement; the sample receiving area is crammed into a small space and is not located in an efficient location; the buildings block construction and lack of insulation make it difficult for the heating and cooling system to operate well; and the piecemeal layout of the laboratory is inefficient.

In addition, laboratory testing technologies continue to advance and regulations continue to change, requiring laboratories to detect constituents at lower levels and test for additional chemicals of emerging concern (CECs). The current laboratory facilities will be unable to accommodate these changes, and more testing will need to be sent to contract laboratories at additional cost to the Agency if the Laboratory facility is not updated to current and future lab standards. In order to maintain certification, continue to be a leader in the industry, and meet the current and future laboratory needs, either major improvements to the current facility or a new laboratory needs to be constructed.

In 2006 the Agency hired the Austin Company to assist in conducting a comprehensive Needs Assessment and Feasibility Study for a new Laboratory to be located either at the existing laboratory site at RP-1 or at RP-5. At that time it was determined a new laboratory should be built at RP-5, the design portion of the new laboratory began in 2010, and then put on hold in late 2010 after 50% design completion. Budget for laboratory improvements or a new facility is currently included in the TYCIP for FY 13-18.

4.4.3 Asset Management Program Possibilities

The Agency's Asset Management Program currently employs basic asset management concepts such as Levels of Service, Risk, Consequence of Failure, and Probability of Failure. The employment of simple and basic concepts ensures that the beginning and start of the program is easy to understand and comprehend by all staff. The program will begin to add additional sophistication such as remaining useful life and replacement costs. The addition of these concepts allows the identification of critical assets with more precision. The following table illustrates what the program has accomplished and what the Asset Management Team would like it to fulfill in the future.

4.4.4 Prevention of Escalating Costs

According to the National Association of Clean Water Agencies, the Association of Metropolitan Water Agencies, and the Water Environment Federation, asset management can reduce the operating and maintenance costs and long-term capital expenses by preserving facility efficiency and avoiding unnecessary investments. In addition, collateral costs from system failures, such as emergency restoration, damage to private property, lawsuits, and fines are minimized or

eliminated. Timely rehabilitation extends the life of infrastructure assets and reduces long-term replacement needs. Asset management practices help to identify the optimal point at which an asset should be replaced, thus minimizing overall life-cycle costs.

TABLE 4-2: IEUA ASSET MANAGEMENT PROGRAM

Current Capabilities	Future Capabilities
Identify critical systems	Routine identification of Capital Improvement Projects
Tracking maintenance records to identify critical assets	Recommend the proper level of financial reserves to maintain Levels of Service
Recommend detailed condition assessment of Agency critical assets	Develop trend analysis
Critical Assets Reports for CCWRF, RP-2, RP-5, and RP-4	Identify critical equipment
Development of the Asset Risk Signature	Establish triggers for repair and replacement
Provided exposure of Asset Management concepts to Agency Staff	Promote the employment of proven equipment
Monitoring emergency construction work orders	Develop historical life expectancy of assets
Monitoring non-compliance incidents	Enhance the knowledge base of the Agency Ensure asset database accuracy and totality

4.5 Organics Management

Even though wastewater flows within the Agency's service area have been decreasing the last three years, the amount of organic matter and suspended solid materials in the wastewater that must be treated is roughly the same. With the completion of the RP-1 Dewatering Facility Expansion Project, the Agency will have enough solids handling capacity for the next ten years.

The Agency's long-range plans for treating and utilizing biosolids as well as addressing the problems of dealing with manure and wood waste generated within its service area were addressed in the Chino Basin Organics Management Business Plan, dated May 31, 2001 and related Organics Management Strategy Technical Memoranda. The Business Plan was developed to be consistent with the Agency's mission to protect public health, the groundwater basin, and the environment (e.g., reduces air pollution and improves water quality).

Included in the Business Plan was a local organics recycling program that includes the local communities as partners to divert organic solids from landfill disposal and to be consumers of recycled organic products generated from within the community. The Agency formed a Joint Powers Authority with the County Sanitation Districts of Los Angeles County (CSDLAC), called the Inland Empire Regional Composting Authority (RCA), to implement the shared goal of development of a sustainable biosolids management project. In 2007, the two joint powers agencies completed

the construction of a biosolids composting facility, called the Inland Empire Regional Composting Facility (IERCF). The IERCF is located in Rancho Cucamonga, adjacent to RP-4. The composting project replaced the Agency's Co-Composting Facility in Chino, which was closed in 2006, with a state-of-the art facility that is completely enclosed to control odors and to meet stringent air quality regulations.

The IERCF is designed to process and recycle the dewatered and stabilized biosolids from the Agency and SDLAC's wastewater treatment processes as well as wood waste from local communities. It produces over 230,000 cubic yards of high-quality compost each year for local landscaping and horticultural use. The composted product, which is marketed as SoilPro® Premium Compost, is sold as a soil conditioner which helps improve water retention resulting in better plant growth and water savings.

The facility is currently operating at its design capacity, receiving nearly 600 tons per day of biosolids and recycled waste products. The construction of the RP-1 Dewatering Facility will use centrifuges to dry solids to a higher percentage. This has the potential of freeing up 50 wet tons per day of additional capacity at the IERCF.

The TYCIP for the RCA includes $10 million of capital improvement, replacement and upgrade projects. Ongoing projects include emergency lighting, amendment hopper improvements, belt conveyor modifications to match actual process flow, door widening for improved truck access, belt conveyor catwalks improvement, and lighting and structure protection evaluations. The lighting and structural evaluations may result in future projects for improvements in both areas. Future demands and operational issues will determine what specific future capital projects are needed. Any capital maintenance, enhancement, or replacement projects will be jointly analyzed and determined with the CSDLAC.

In previous years, the Regional Program Capital Fund budget also included approximately $0.3 million per year for the Agency's share (50%) of capital contributions for the Inland Empire Regional Composting Facility. The IERCF FY 2013/14 contribution projected in the Regional Capital Fund of $500,000. In the future ongoing costs and capital projects for the composting facility will be covered by tipping fees.

4.5.1 Emerging Treatment Issues (Constituents of Emerging Concern)

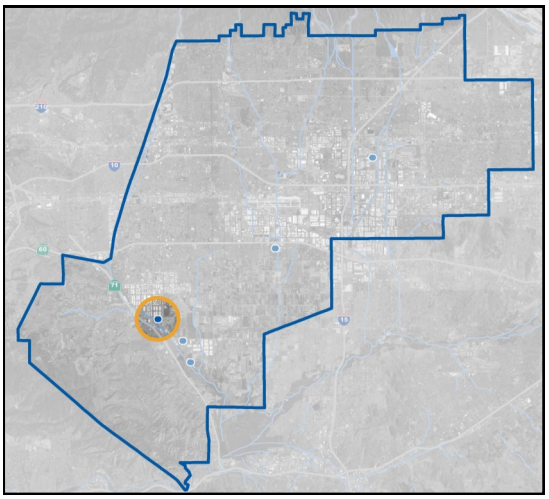
The Agency strives to keep abreast of developments in the regulatory arena as well as developments in treatment technologies. Although some parts of the country are experiencing more stringent requirements for nutrient removal (i.e., nitrogen and phosphorous), no changes to the Agency's permit requirements for wastewater treatment or recycled water use are anticipated in the foreseeable future. However, the impact of Compounds of Emerging Concern (CECs) resulting from recycled water use is an active area of study.

CECs include a wide range of compounds in the following groups: synthetically and naturally occurring hormones; pharmaceutically active compounds; personal care products; pesticides, herbicides, and insecticides; industrial and household chemicals; disinfection by-products; and

metals. Due to the complexity of the subject matter, it is expected to take many years for quantitative changes to take place in regulatory requirements.

Over the next decade, potential changes to the treatment technologies employed by the Agency will most likely be related to improving the cost-effectiveness of wastewater treatment. An ongoing task for the Agency's technical staff is to evaluate emerging treatment technologies to determine their potential application and value to the Agency.

Project	CCWRF Recycled Water Pump Station Expansion
Program	Recycled water
Type	Capital Upgrades at Major Facilities
Priority	High
Project No	EN07010
Agency Contact	Majid Karim
Agency Level of Service Goals	Provide capacity for conveyance and treatment of 100% of discharges Meet 100% of planned peak hourly demands for recycled water



PROJECT DESCRIPTION

The Southern Project Area includes the design and construction of the 930 Reservoir West Eucalyptus Pipeline, RP-5 Recycled Water Pump Station, and 930 West El Prado Pipeline. The Southern Regional System will be designed and constructed in multiple phases, based on the regional recycled water priorities.

KEY PROJECT BENEFITS

- Increase pumping capacity to operate during peak summer demands
- Additional fifth pump allows redundancy

FUNDING SOURCES

Name/Agency	Amount
SRF Loan	$5,450,000
TOTAL	**$5,450,000**

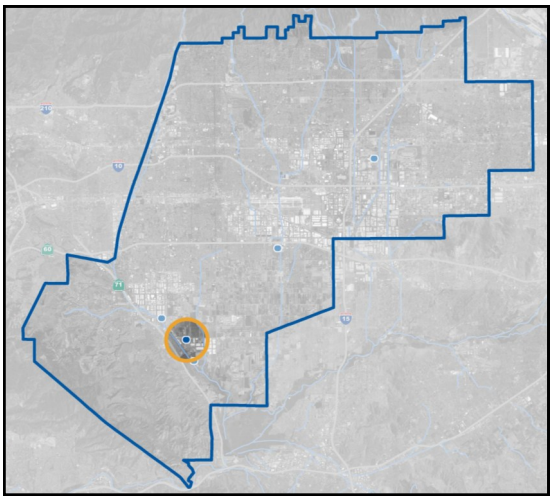
PROJECT LOCATION



PROJECT SCHEDULE

Phase	Cost	Start Date	End Date
Plan	$350,000	5/12/08	10/30/09
Design	$250,000	12/11/09	9/19/12
Construct	$4,500,000	9/19/12	3/1/14
Closeout	$350,000	3/2/14	3/15/14
TOTAL	**$5,450,000**		

Project	New Operations Laboratory
Program	Wastewater Treatment and Conveyance
Type	Facility Expansion and Improvement
Priority	Medium
Project No	EN08009
Agency Contact	Majid Karim
Agency Level of Service Goals	Achieve 100% compliance with applicable regulations and permits



PROJECT DESCRIPTION

This project is to construct a new main laboratory at RP-5 to provide a more efficient working environment for laboratory staff and to provide sufficient space for future laboratory needs. As part of this new laboratory, an educational center will be incorporated into the building layout.

KEY PROJECT BENEFITS

- Provide an efficient working environment for the laboratory staff
- Provide space for future expansion for future laboratory needs
- Provide an educational center for visitors and students.

FUNDING SOURCES

Name/Agency	Amount
Regional Capital Improvement Fund	$15,100,000
TOTAL	**$15,100,000**

PROJECT SCHEDULE

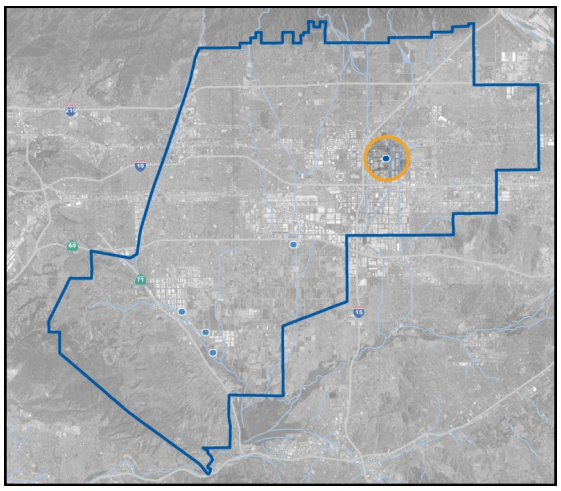
The project is currently in the Plan phase and should be completed by

Phase	Cost	Start Date	End Date
Plan	$140,000	1/1/2010	2/1/2010
Design	$1,860,000	6/1/2010	6/1/2016
Construct	$13,050,000	6/2/2016	11/30/2018
Closeout	$50,000	12/1/2018	6/1/2019
TOTAL	**$15,100,000**		

PROJECT LOCATION



Project	IERCF Process Improvements
Program	Organics recycling
Type	Capital Upgrades at Major Facilities
Priority	High
Project No	RA11004
Agency Contact	Majid Karim
Agency Level of Service Goals	Provide capacity for conveyance and treatment of 100% of discharges Sell 100% of compost produced to customers



PROJECT DESCRIPTION

This project includes conveyor modifications and additions, and amendment hoppers with new hopper bottoms and screw replacements. Upgrading these components will provide processing improvements, increase process efficiency, redundancy, and improve automation.

KEY PROJECT BENEFITS

- Increased efficiency of the conveyance system
- Increased safety within the compost facility
- Redundancy of receiving and processing amendment material
- Automation of material conveyance for the composting process

FUNDING SOURCES

Name/Agency	Amount
RCA Capital	$3,290,000
TOTAL	**$3,290,000**

PROJECT LOCATION

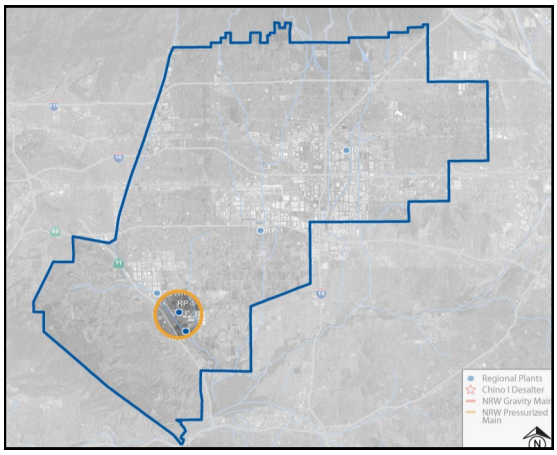


PROJECT SCHEDULE

The project is currently in the Construction phase and should be completed by December 2014.

Phase	Cost	Start Date	End Date
Plan	$80,000	9/21/10	5/26/11
Design	$420,000	5/26/11	5/1/13
Construct	$2,760,000	9/28/11	6/27/14
Closeout	$30,000	6/27/14	12/30/14
TOTAL	**$3,290,000**		

Project	Headquarters Central Plant Improvements
Program	Wastewater Treatment and Conveyance
Type	Capital Upgrades at Major Facilities
Priority	High
Project No	EN11010 & EN11051
Agency Contact	Majid Karim
Agency Level of Service Goals	Minimize operation & management costs Improve system efficiency



PROJECT DESCRIPTION

This project includes the installation of backup equipment for the existing chiller system along with new 150 electric chiller systems at the Headquarters. The project will provide provisions for the future Central Lab Building which will be located south of Headquarters Building B.

KEY PROJECT BENEFITS

- Increase Central Plan control and efficiency
- Reduce time and money spent on existing system operation and maintenance
- Provide provisions for the upcoming Lab Building

FUNDING SOURCES

Name/Agency	Amount
Wastewater Capital	$1,012,306
TOTAL	**$1,012,306**

PROJECT LOCATION

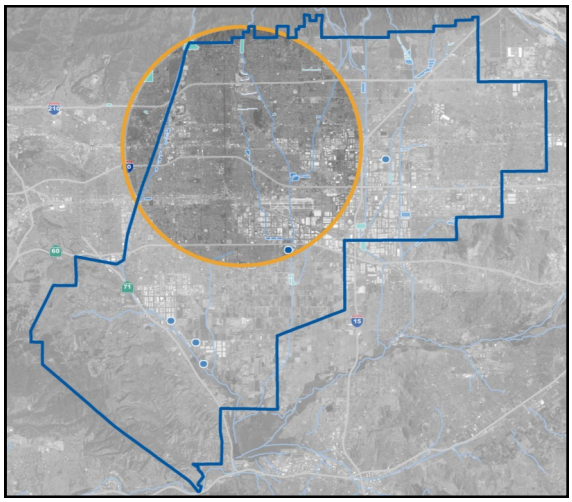


PROJECT SCHEDULE

The project is currently in the Design phase and should be completed by June 2014.

Phase	Cost	Start Date	End Date
Plan	$25,000	7/1/10	7/23/11
Design	$375,000	7/23/11	4/5/13
Construct	$592,306	4/5/13	1/14/14
Closeout	$20,000	1/14/14	6/30/14
TOTAL	**$1,012,306**		

Project	Northwest SCADA Upgrades
Program	Recycled water
Type	Capital Upgrades at Major Facilities
Priority	High
Project No	WR11018
Agency Contact	Majid Karim
Agency Level of Service Goals	Meet 100% of planned peak hourly demands for recycled water Maximize the beneficial use of recycled water supply produced by the Agency



PROJECT DESCRIPTION

This project involves procurement, programming, and installation of Supervisory Control and Data Acquisition (SCADA) software to achieve a robust and reliable recycled water SCADA system for the 1630 West Pump Station and Reservoir. It will also install and program the SCADA hardware and coordinate the overall effort of the recycled water SCADA system implementation and system testing.

KEY PROJECT BENEFITS

- Provide a more robust, reliable, and remote control of the recycled water 1630 West Pump Station that will sustain and support the growth of the recycled water program
- Optimize SCADA assets and maximize their lifecycle, better meet business needs, and mitigate disruptions to operational continuity

PROJECT LOCATION





FUNDING SOURCES

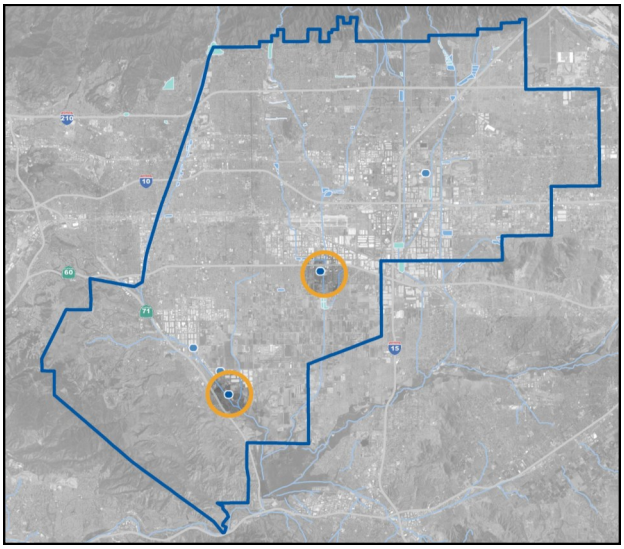
Name/Agency	Amount
Recycled Water Capital	$1,095,000
TOTAL	**$1,095,000**

PROJECT SCHEDULE

The project is currently in the Construction phase and should be completed by June 2013.

Phase	Cost	Start Date	End Date
Plan	$40,000	2/15/11	3/22/11
Design	$100,000	3/22/11	2/3/12
Construct	$935,000	2/6/12	3/29/13
Closeout	$20,000	3/30/13	6/30/13
TOTAL	**$1,095,000**		

Project	RP-1 & RP-2 Boiler Replacements
Program	Wastewater Treatment and Conveyance
Type	Major Equipment and Facilities Repair and Replacement
Priority	High
Project No	EN11042
Agency Contact	Majid Karim
Agency Level of Service Goals	Achieve 100% compliance with applicable regulations and permits Meet all requirements for biogas product, quality, and reliability to support renewable energy



PROJECT DESCRIPTION

Air quality requirements are and continue to become more stringent, changing the performance requirements for existing equipment. The RP-1 and RP-2 hot water boilers for the Digester Gas System will be replaced to meet current digester gas heat requirements and comply with current air quality requirements.

KEY PROJECT BENEFITS

- Maintain regulatory compliance for South Coast Air Quality Management District
- Improve capacity and reliability of the hot water boiler piping and pumping systems at RP-1 and RP-2

PROJECT SCHEDULE

The project is currently in the Construction phase and should be completed by December 2013.

Phase	Cost	Start Date	End Date
Plan	$50,000	10/1/10	2/28/11
Design	$100,000	3/1/11	4/20/11
Construct	$2,164,000	4/20/11	8/30/13
Closeout	$20,000	8/30/13	12/31/13
TOTAL	**$2,334,000**		

FUNDING SOURCES

Name/Agency	Amount
Wastewater Capital RC	$2,334,000
TOTAL	**$2,334,000**

PROJECT LOCATION

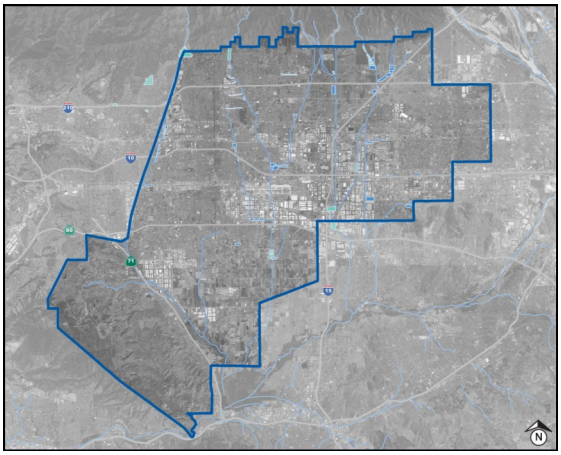
RP-1



RP-2



Project	GWR and RW SCADA System Upgrades
Program	Recycled Water
Type	Facility Expansion and Improvement
Priority	High
Project No	EN12019
Agency Contact	Majid Karim
Agency Level of Service Goals	Minimize asset failures causing recycled water delivery disruptions Maximize the beneficial use of recycled water supply produced by the Agency



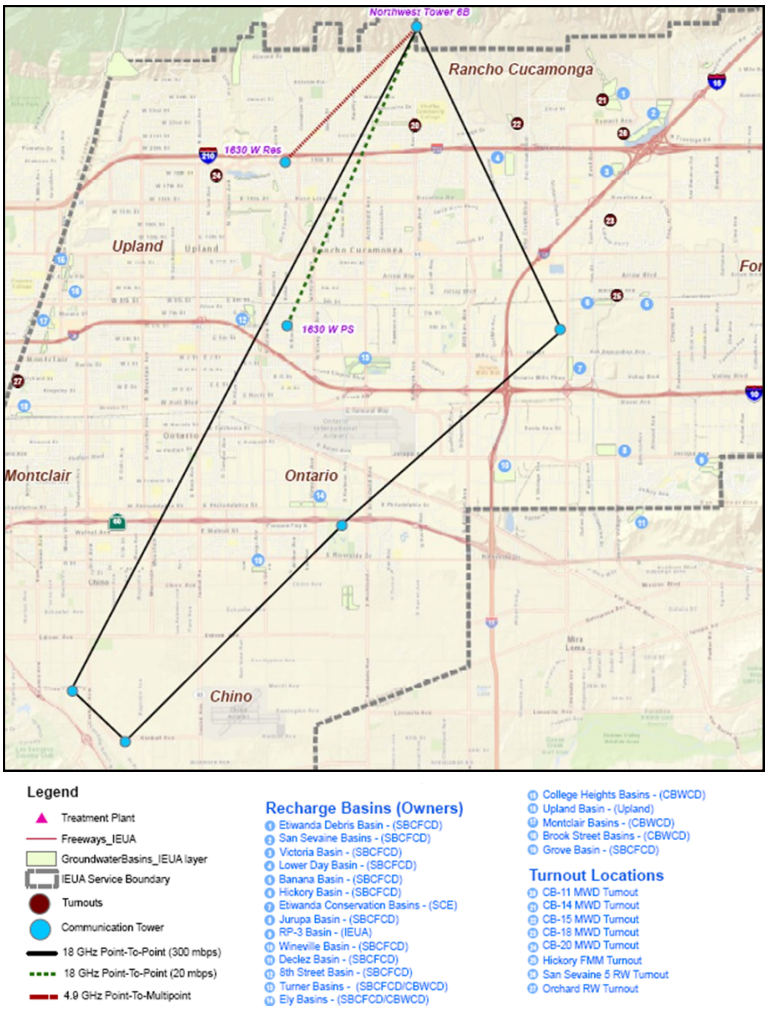
PROJECT DESCRIPTION

This project will transition the existing remote groundwater recharge and recycled water recharge sites (totaling over 20 sites) to the newer, faster, and more reliable communication network. Under this project, the existing Supervisory Control and Data Acquisition (SCADA) server system will be upgraded to provide complete control and monitoring of the recharge basin's SCADA System.

KEY PROJECT BENEFITS

- Faster and more reliable communication network
- Optimize SCADA assets and maximize their lifecycle, better meet business needs, and mitigate disruptions to operational continuity

PROJECT LOCATION



FUNDING SOURCES

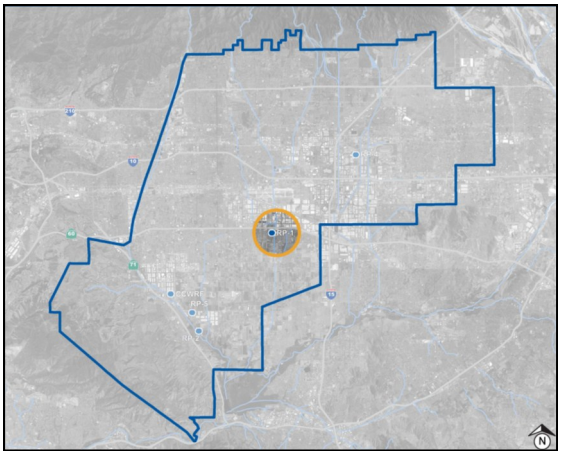
Name/Agency	Amount
Recycled Water Capital	$2,500,00
TOTAL	$2,500,000

PROJECT SCHEDULE

The project is currently in the Planning phase and should be completed by December 2014.

Phase	Cost	Start Date	End Date
Plan	$50,000	11/11/11	3/29/13
Design	$440,000	3/30/13	8/31/13
Construct	$2,000,000	9/1/13	6/30/14
Closeout	$10,000	7/1/14	12/31/14
TOTAL	**$2,500,000**		

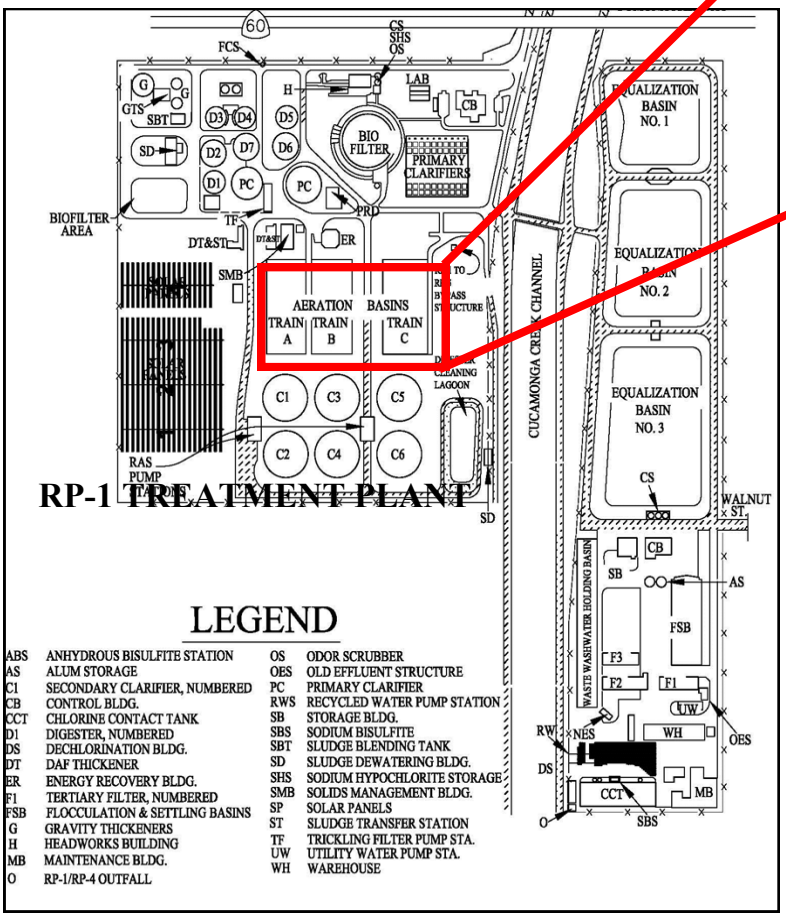
Project	RP-1 Aeration Ducting
Program	Wastewater Treatment and Conveyance
Type	Asset Improvement and Replacement
Priority	High
Project No	EN12022
Agency Contact	Majid Karim
Agency Level of Service Goals	Achieve 100% compliance with applicable regulations and permits Provide capacity for conveyance and treatment of 100% of discharges



PROJECT DESCRIPTION

This project consists of replacing leaking air pipe coupling at the Inland Empire Utilities Agency's RP-1 Aeration Basin. Air leaks are a cause of significant energy loss in the blower system. Replacement will occur at existing connections that are at the end of their useful life. Coordination and detailed planning will occur to minimize operational disruptions at RP-1.

PROJECT LOCATION





KEY PROJECT BENEFITS

- Reduce unwanted plastics and rags from entering the secondary clarifiers and solids digesters
- Reduce excessive maintenance down time and operational efforts
- More effective screening system

FUNDING SOURCES

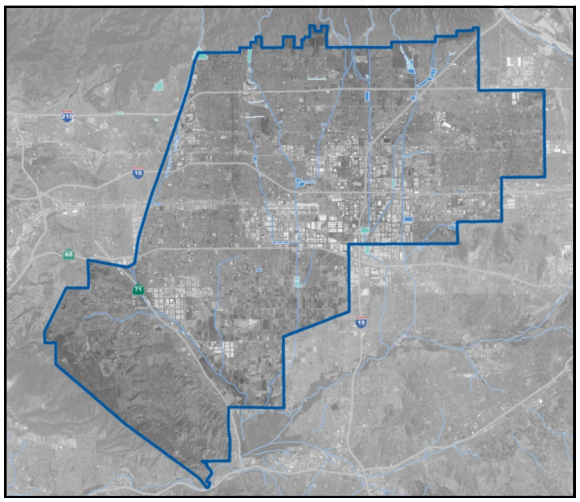
Name/Agency	Amount
Regional Waste Water Operations & Management	$ 848,000
TOTAL	**$ 848,000**

PROJECT SCHEDULE

The project is currently in the Design phase and should be completed by February 2014.

Phase	cost	start date	end date
Plan	$ 3,000	11/15/2012	12/31/2012
Design	$ 20,000	1/1/2013	5/31/2013
Construct	$ 820,000	6/19/2013	12/31/2013
Closeout	$ 5,000	1/1/2014	2/28/2014
TOTAL	**$ 848,000**		

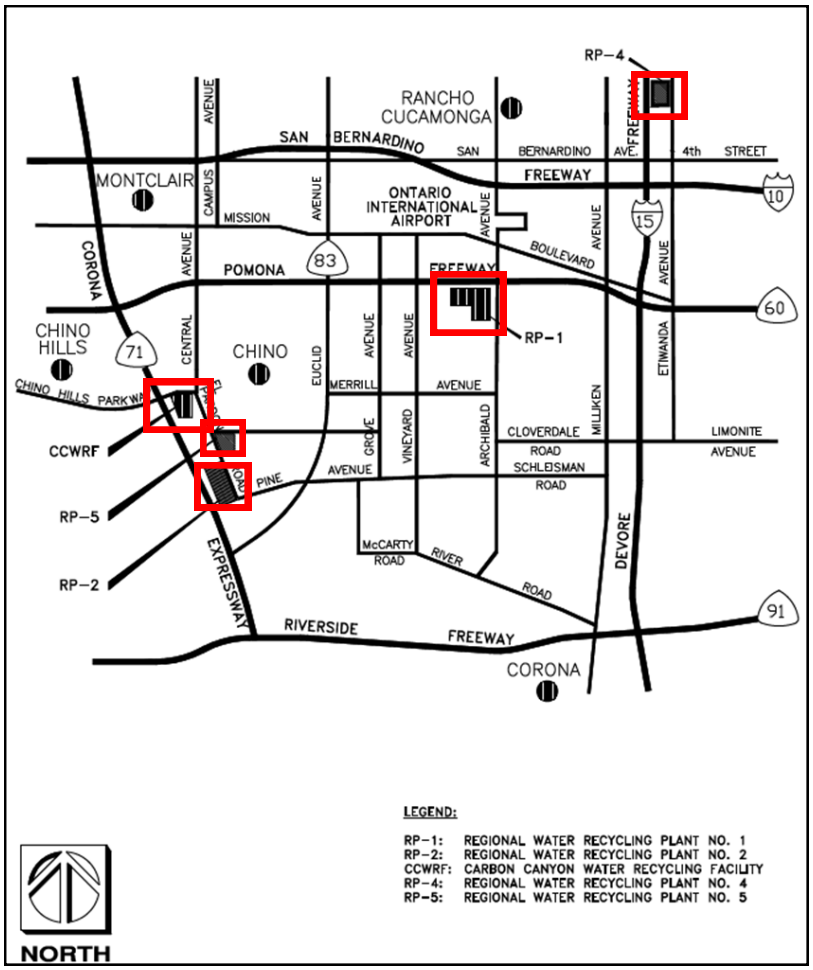
Project	SCADA Enterprise System
Program	Wastewater Treatment and Conveyance
Type	Capital Upgrades at Major Facilities
Priority	High
Project No	EN13016
Agency Contact	Majid Karim
Agency Level of Service Goals	Achieve 100% compliance with applicable regulations and permits Maximize the beneficial use of recycled water supply produced by the Agency



PROJECT DESCRIPTION

The Supervisory Control and Data Acquisition (SCADA) Enterprise System will eliminate the multi-vendor platforms currently operating as islands of automation. The design and construction of a highly-reliable, scalable, Enterprise SCADA system will enable the control of any facility from any location, unattended operation, integration with the Business System. It will also support system-wide wastewater treatment, recycled water, and groundwater supply-demand management. The Enterprise System will be a highly functional and user-friendly solution, consolidating data from all facilities and providing accessible information.

PROJECT LOCATION



KEY PROJECT BENEFITS

- Maintain regulatory compliance
- Optimize SCADA assets and maximize their lifecycle, better meet business needs, and mitigate disruptions to operational continuity

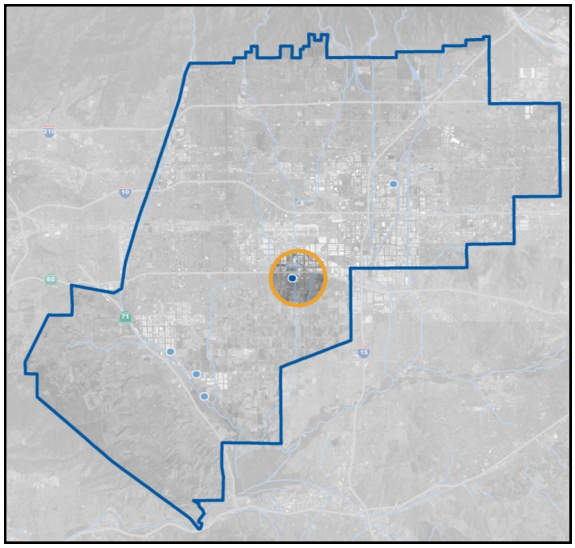
FUNDING SOURCES

Name/Agency	Amount
Wastewater Capital RC	$9,850,000
TOTAL	**$9,850,000**

PROJECT SCHEDULE

Phase	Cost	Start Date	End Date
Plan	$70,000	7/1/12	10/31/12
Design	$2,400,000	11/1/12	4/28/17
Construct	$7,350,000	11/1/13	6/30/17
Closeout	$30,000	7/1/17	12/30/17
TOTAL	**$9,850,000**		

Project	RP-1 Flare Replacements
Program	Wastewater Treatment and Conveyance
Type	Major Equipment and Facilities Repair and Replace-ment
Priority	High
Project No	EN13046
Agency Contact	Majid Karim
Agency Level of Service Goals	Achieve 100% compliance with applicable regulations and permits Meet all requirements for biogas product, quality, and reliability to support renewable energy operations



PROJECT DESCRIPTION

South Coast Air Quality Management District recently issued the 2012 Air Quality Management Plan, which includes the District's plan to reduce emissions. This project will include the procurement and installation of a new, fully automated gas flare system. The RP-1 piping system and controls will be upgraded to accommodate and maximize the digester gas usage by the fuel cell and existing boilers and minimize flared gas.

KEY PROJECT BENEFITS

- Maintain regulatory compliance determined by 2012 Air Quality Management District
- Maximize the digester gas usage by the fuel cell and existing boilers

FUNDING SOURCES

Name/Agency	Amount
Wastewater Capital RC	$2,000,000
TOTAL	**$2,000,000**

PROJECT LOCATION

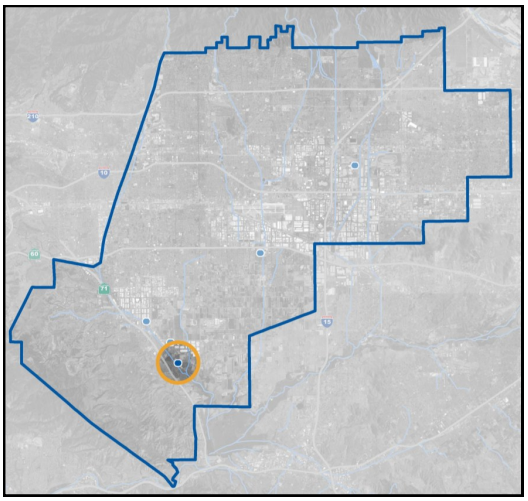


PROJECT SCHEDULE

The project is currently in the Plan phase and should be completed by March 2015.

Phase	Cost	Start Date	End Date
Plan	$80,000	7/1/13	10/31/13
Design	$300,000	10/31/13	4/30/14
Construct	1,600,000	4/30/14	12/31/14
Closeout	$20,000	12/31/14	3/31/15
TOTAL	**$2,000,000**		

Project	RP-2 Digester #4 Dome Replacement
Program	Wastewater Treatment and Conveyance
Type	Capital Upgrades at Major Facilities
Priority	High
Project No	EN13049
Agency Contact	Majid Karim
Agency Level of Service Goals	Achieve 100% compliance with applicable regulations and permits Maximize the beneficial use of recycled water supply produced by the Agency



PROJECT DESCRIPTION

The RP-2 Digester #4 Dome is currently offline. Five of the nine roller support guides are severely damaged. There are also settling issues caused by the dome's weight which tilted the overall dome. The digester dome's tilted position creates tremendous torsional force acting on the guide rails. This project will convert the floating dome to a stationary dome by supporting it with steel beams to repair the dome supports and repair the foundation.

KEY PROJECT BENEFITS

- Maintain regulatory compliance
- Optimize SCADA assets and maximize their lifecycle, better meet business needs, and mitigate disruptions to operational continuity

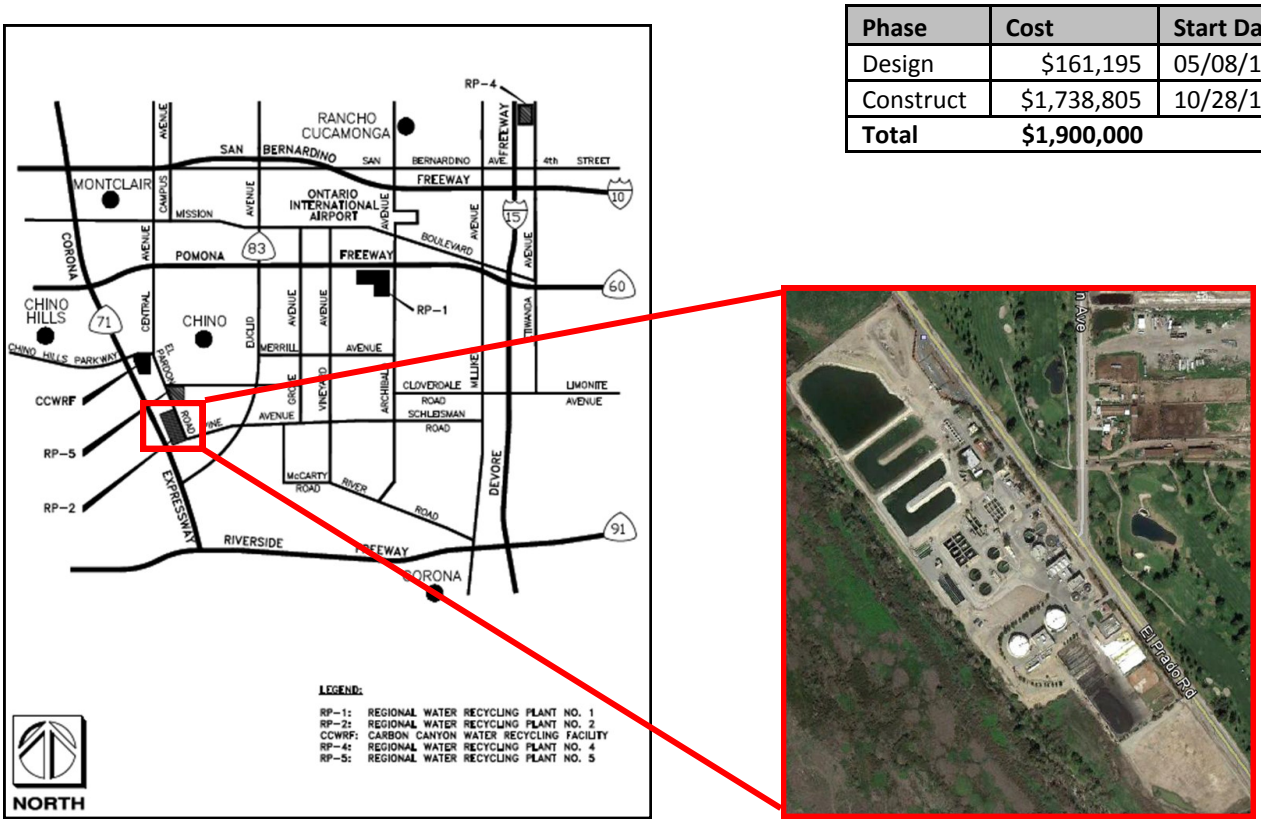
FUNDING SOURCES

Name/Agency	Amount
Wastewater Capital RC	$1,900,000
TOTAL	**$1,900,000**

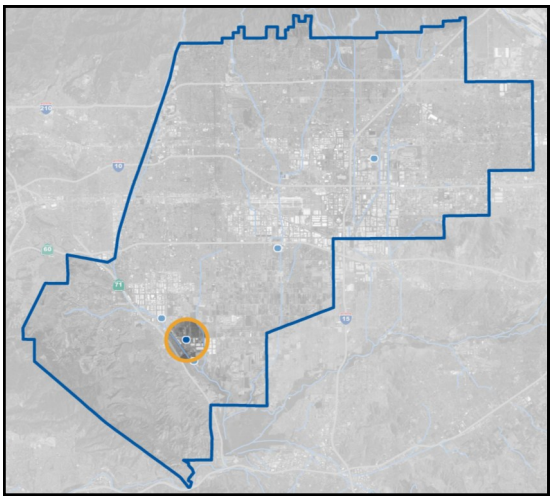
PROJECT SCHEDULE

Phase	Cost	Start Date	End Date
Design	$161,195	05/08/13	08/29/13
Construct	$1,738,805	10/28/13	05/19/14
Total	**$1,900,000**		

PROJECT LOCATION



Project	RP-5 Anoxic Mixers, Filter Backwash Pump Station & Alum System Upgrades
Program	Wastewater Treatment and Conveyance
Type	Capital Upgrades at Major Facilities
Priority	High
Project No	EN14017
Agency Contact	Majid Karim
Agency Level of Service Goals	Achieve 100% compliance with applicable regulations and permits Experience no overflows of the Agency's sewers through proper operation and maintenance



PROJECT DESCRIPTION

The project includes the evaluation, design, and modification of the aeration system; filter backwash pump station and primary splitter box; and alum storage system. These modifications will enhance the RP-5 process performance.

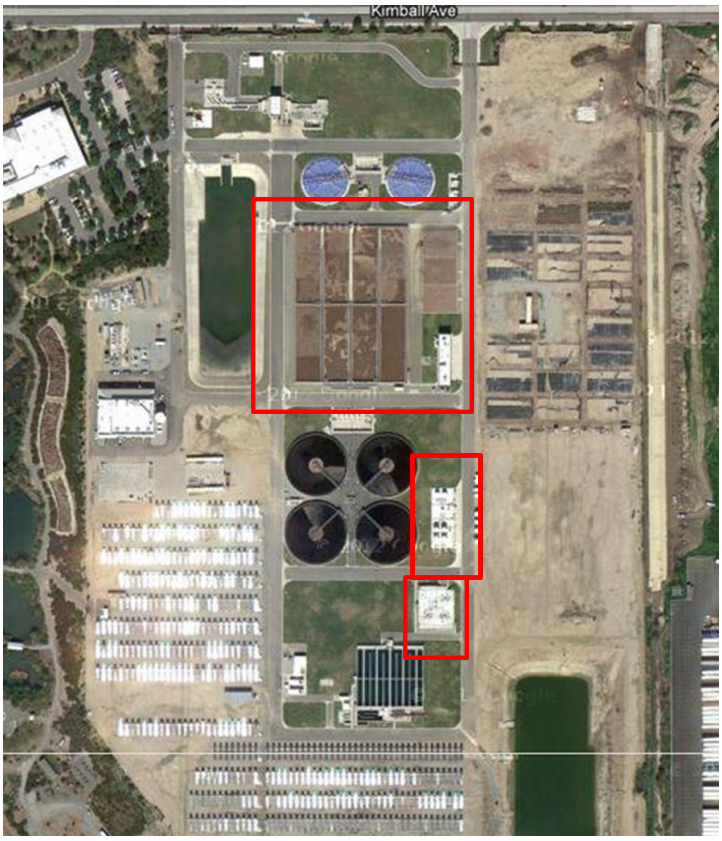
KEY PROJECT BENEFITS

- Eliminate operational issues related to compliance concerns, grit settling, and reduce the need for frequent cleaning
- Reduce turbidity to compliance level

FUNDING SOURCES

Name/Agency	Amount
Wastewater Capital RC	$2,100,000
TOTAL	**$2,100,000**

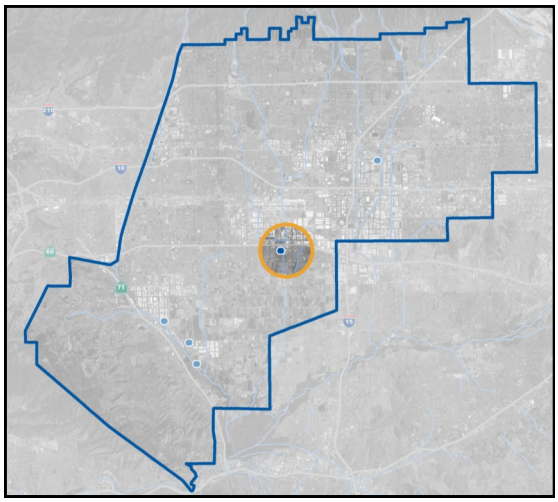
PROJECT LOCATION



PROJECT SCHEDULE

Phase	Cost	Start Date	End Date
Plan	$80,000	7/1/2013	10/31/2013
Design	$300,000	10/31/2013	4/30/2014
Construct	$1,700,000	4/30/2014	12/31/2014
Closeout	$20,000	12/31/2014	3/31/2015
TOTAL	**$ 2,100,000**		

Project	RP-1 Headworks Gate Replacement
Program	Wastewater Treatment and Conveyance
Type	Asset Improvement and Replacement
Priority	High
Project No	EN14019
Agency Contact	Majid Karim
Agency Level of Service Goals	Achieve 100% compliance with applicable regulations and permits Provide capacity for conveyance and treatment of 100% of discharges



PROJECT DESCRIPTION

This project will replace fifteen headworks gates and the bar screen system at RP-1. Out of the seventeen gates inspected, fifteen gates were found to have significant deficiencies that justify full replacement of the gates and embedded gate frames. The bar screen system will also be replaced with a more effective screening system to reduce unwanted plastics and rags from entering the secondary clarifiers and solids digesters.

KEY PROJECT BENEFITS

- Reduce unwanted plastics and rags from entering the secondary clarifiers and solids digesters
- Reduce excessive maintenance down time and operational efforts
- More effective screening system

PROJECT LOCATION



FUNDING SOURCES

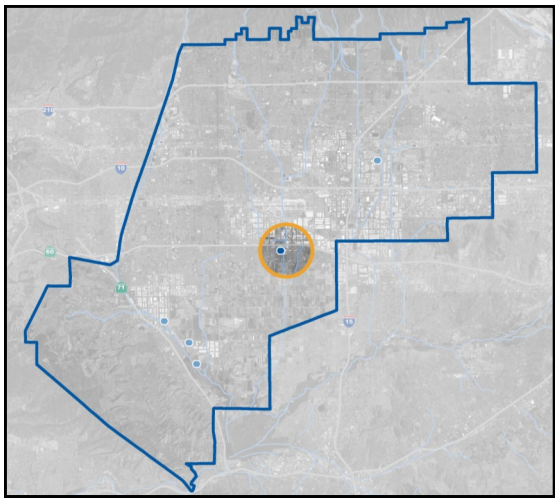
Name/Agency	Amount
Regional Waste Water O&M	$ 11,500,000
TOTAL	**$ 11,500,000**

PROJECT SCHEDULE

The project is currently in the Plan phase and should be completed by June 2015.

Phase	Cost	Start Date	End Date
Plan	$ 40,000	7/1/2013	10/1/2013
Design	$ 2,700,000	10/1/2013	9/1/2013
Construct	$ 8,720,000	9/1/2013	3/30/2015
Closeout	$ 40,000	3/30/2015	6/30/2015
TOTAL	**$11,500,000**		

Project	RP-1 Secondary Clarifier Asset Rehab
Program	Wastewater Treatment and Conveyance
Type	Asset Improvement and Replacement
Priority	High
Project No	EN14021
Agency Contact	Majid Karim
Agency Level of Service Goals	Achieve 100% compliance with applicable regulations and permits Provide capacity for conveyance and treatment of 100% of discharges



PROJECT DESCRIPTION

This project will rehabilitate the Secondary Clarifiers at RP-1. As per asset system improvements evaluation, the remaining four secondary clarifiers require rehabilitation and replacement of clarifier assembly. The system is over twenty-five years old, and it is listed as a critical rehabilitation under the asset management program.

KEY PROJECT BENEFITS

- Increase the remaining useful life of the four secondary clarifiers
- Improve reliability of current secondary clarifiers

FUNDING SOURCES

Name/Agency	Amount
Regional Waste Water O&M CC Projects	$ 5,400,000
TOTAL	**$ 5,400,000**

PROJECT LOCATION

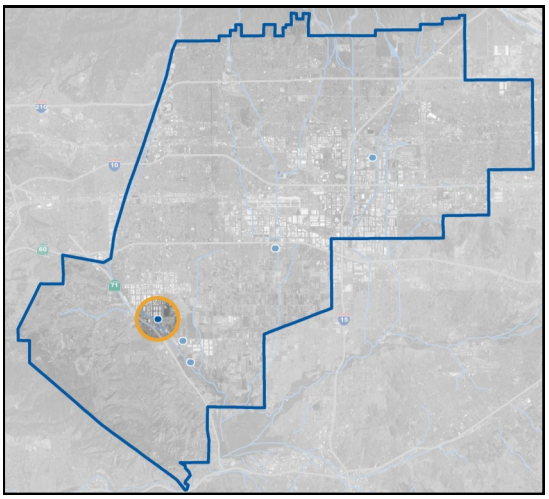


PROJECT SCHEDULE

The project is currently in the Plan phase and should be completed by June 2015.

Phase	Cost	Start Date	End Date
Plan	$20,000	7/1/2013	10/1/2013
Design	$ 360,000	10/1/2013	9/1/2013
Construct	$ 5,000,000	9/1/2013	3/30/2015
Closeout	$ 20,000	3/30/2015	6/30/2015
TOTAL	**$5,400,000**		

Project	CCWRF Secondary Clarifier No.3 Rehab
Program	Wastewater Treatment and Conveyance
Type	Capital Upgrades at Major Facilities
Priority	High
Project No	EN14027
Agency Contact	Majid Karim
Agency Level of Service Goals	Provide capacity for conveyance and treatment of 100% of discharges



PROJECT DESCRIPTION

The Carbon Canyon Wastewater Recycling Facility (CCWRF) has three secondary clarifiers that have been in service since 1993. With the clarifiers and their associated equipment approaching the end of their service life, it is vital to rehabilitate the clarifier and replace antiquated equipment. The project will rehabilitate the Secondary Clarifier No. 3 and replace most of its equipment.

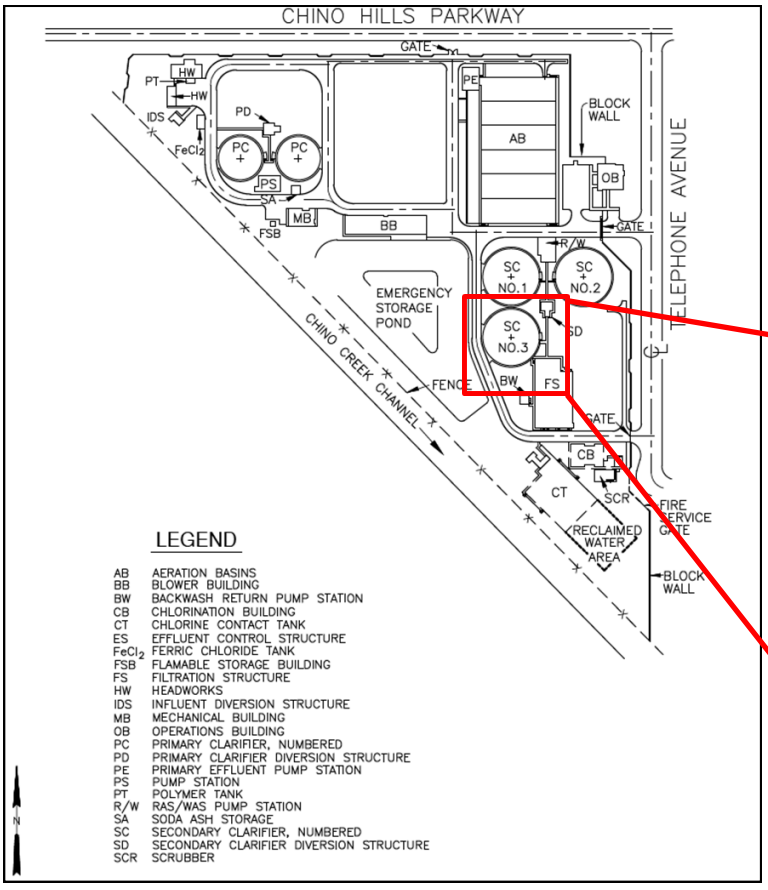
KEY PROJECT BENEFITS

- Rehabilitate antiquated CCWRF secondary clarifier No.3 to avoid breakdowns

FUNDING SOURCES

Name/Agency	Amount
Wastewater Capital RC	$1,000,000
TOTAL	**$1,000,000**

PROJECT LOCATION

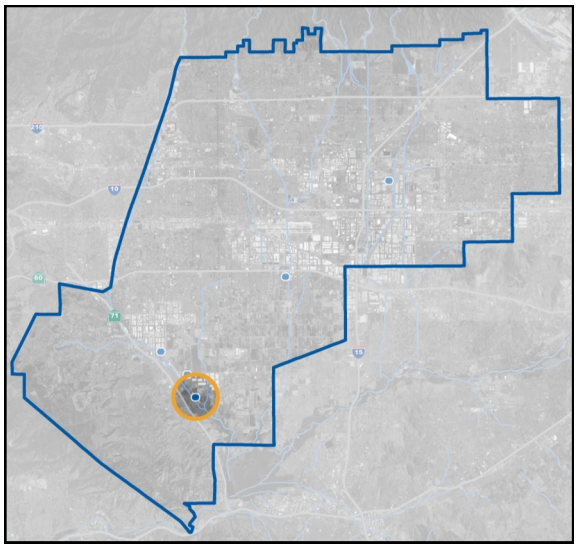




PROJECT SCHEDULE

Phase	Cost	Start Date	End Date
Plan	$5,000	7/1/2013	9/1/2013
Design	$25,000	9/1/2013	3/21/2014
Construct	$960,000	2/05/2013	12/21/2014
Closeout	$10,000	12/21/2014	12/31/2014
TOTAL	**$1,000,000**		

Project	RP-2 Flare Replacement
Program	Wastewater Treatment and Conveyance
Type	Major Equipment and Facilities Repair and Replacement
Priority	High
Project No	EN18003
Agency Contact	Majid Karim
Agency Level of Service Goals	Achieve 100% compliance with applicable regulations and permits Meet all requirements for biogas product, quality, and reliability to support renewable energy operations



PROJECT DESCRIPTION

South Coast Air Quality Management District recently issued the 2012 Air Quality Management Plan, which includes the District's plan to reduce emissions. This project will include the procurement and installation of two new gas flares for 100% redundancy at RP-2 to operate in parallel with the existing candle flare.

KEY PROJECT BENEFITS

- Maintain regulatory compliance by reducing emission to standards reported in 2012 Air Quality Management Plan

FUNDING SOURCES

Name/Agency	Amount
Wastewater Capital RC	$2,000,000
TOTAL	**$2,000,000**

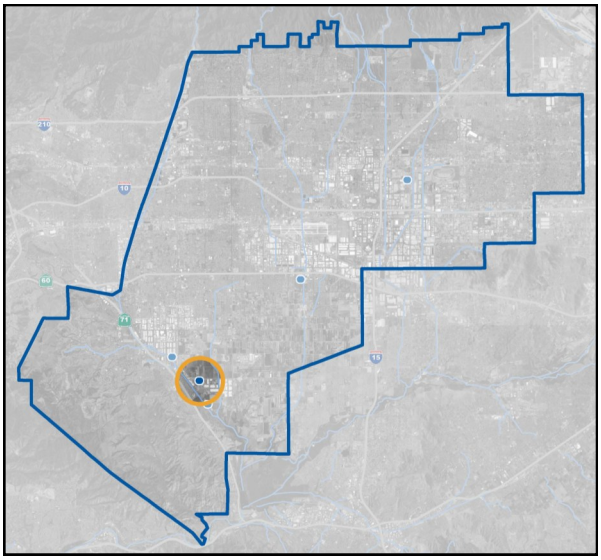
PROJECT LOCATION



PROJECT SCHEDULE

Phase	Cost	Start Date	End Date
Design	$500,000	07/1/18	06/30/19
Construct	$1,500,000	07/07/18	06/30/20
TOTAL	**$2,000,000**		

Project	RP-5 Solids Processing Expansion
Program	Wastewater Treatment and Conveyance
Type	Facility Expansion and Improvement
Priority	High
Project No	EN22001
Agency Contact	Majid Karim
Agency Level of Service Goals	Provide capacity for conveyance and treatment of 100% of discharges Achieve 100% Class A biosolids production



PROJECT DESCRIPTION

The project includes the installation of two new digesters, grit thickeners, dewatering facility, solids and sludge pump station, heating system (boilers and heat exchangers), mechanical piping, and electrical controls. The purpose of the project is to shift all solids handling operations to a new RP-5 facility while the RP-2 facility, which is currently leased from the U.S. Army Corps of Engineers, will be de-commissioned and demolished.

KEY PROJECT BENEFITS

- Increased wastewater treatment capacity to meet future projected increased flows.

FUNDING SOURCES

Name/Agency	Amount
Wastewater Capital RC	$90,500,000
TOTAL	**$90,500,000**

PROJECT LOCATION



PROJECT SCHEDULE

Phase	Cost	Start Date	End Date
Design	$5,000,000	07/01/18	06/30/20
Construct	$85,500,000	07/01/20	06/30/23
TOTAL	**$90,500,000**		

5.0 COMPREHENSIVE ENERGY PLAN

5.1 Background

Water and energy resources are inextricably connected. The transportation and treatment of water, the treatment and recycling of wastewater, and the energy used to heat and consume water account for nearly 20 percent of the total electricity consumed in California. This water-energy nexus is an important factor to consider during both short and long-term planning to achieve energy reliability in a sustainable manner that demonstrates good environmental stewardship.

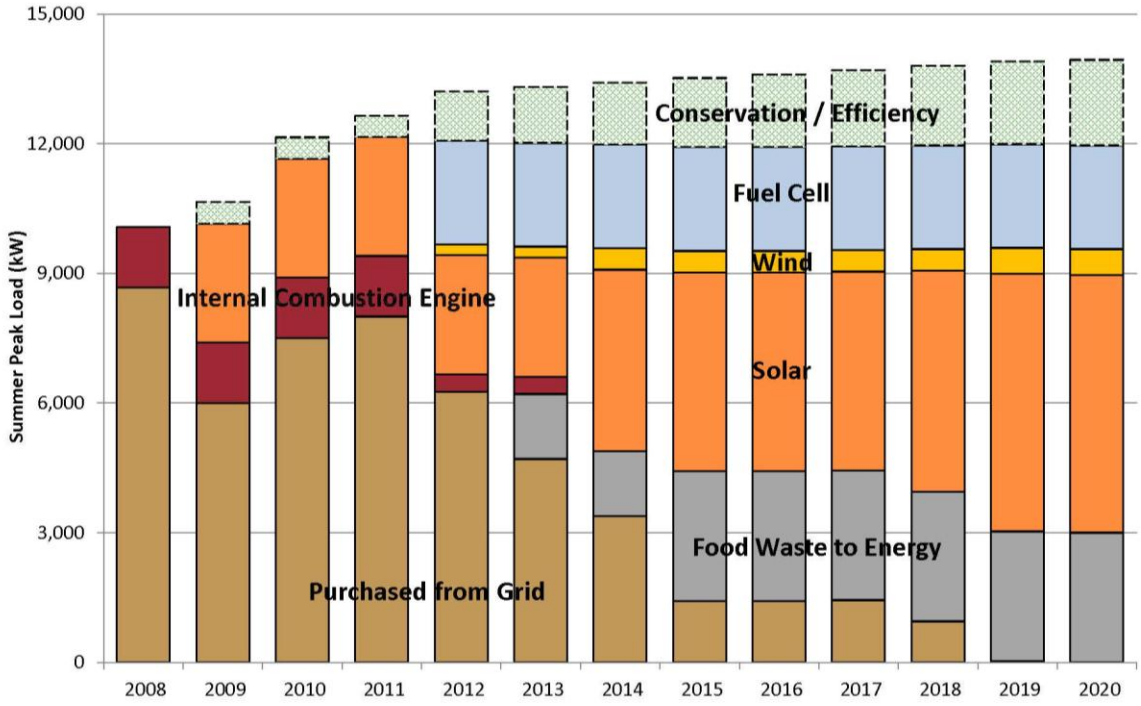
The Agency's interest in energy generation started in 1978 with the installation of a 400 kW Caterpillar engine which was designed to utilize digester gas as fuel, provide power to the plant, and heat to the digesters. In concurrence with plants' expansions and increased biogas production, more cogeneration systems were installed at RP-1, RP-2 and RP-5.

In addition, the Agency installed two natural gas peaking units at RP-4 and CCWRF in response to the 2001 energy crisis. These units were designed to produce power only during the peak hours of the peak season to hedge against electric utility rates. However, in February 2008, the South Coast Air Quality Management District (SCAQMD) amended Rule 1110.2, which lowered emissions limitations on internal combustion engines, requiring expensive control equipment as well as digester gas pretreatment. As a result, the Agency was forced to shut down one engine at RP-1 and the two peaking units. With the certainty that the existing engines would not be able to operate in the same capacity in the future, Agency staff developed an energy management plan that includes increased energy efficiency, increased on-site energy generation, a diversified energy portfolio, optimization of energy procurement strategies and effective energy demand response.

The Agency's energy management plan has a specific focus on energy independence from the grid during the peak energy use/pricing period (noon to 6:00 PM) by the year 2020 or earlier (Figure 5-1). This strategy contributes to reducing demand on an already taxed California power grid system while enhancing the Agency's energy reliability and rate stability in an environmentally prudent manner. In February 2012, the Agency's Board of

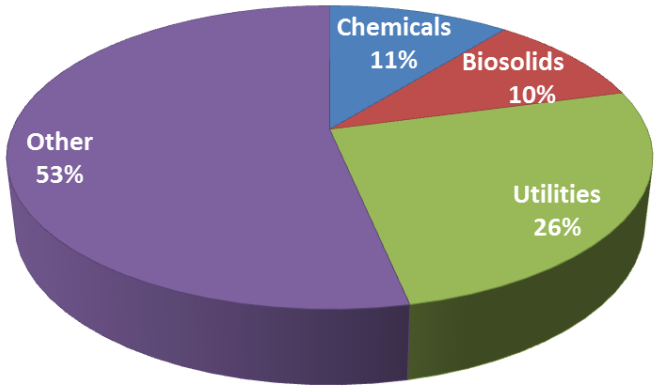
Directors officially endorsed support of this plan through the adoption of Resolution No. 2012-2-1.

FIGURE 5-1: PEAK POWER INDEPENDENCE BY 2020



The Agency currently uses approximately 75,000 Megawatt hours (MWh) of electrical energy annually at its regional water recycling plants (RWRPs) and other facilities at an annual cost of about $9,000,000. Currently, energy costs for these facilities account for approximately 26% of the non-labor operation and maintenance (O&M) costs (Figure 5-2). As population is expected to increase by more than 50% within the Agency's service area through 2030, demand for electricity will increase. The cost of electricity is also expected to continue to climb, as it has done historically, averaging approximately between 4% and 6% per year. Therefore, sound energy management planning and practices are critical to the Agency's O & M cost containment strategy, as well as meeting regulatory compliance goals and carbon footprint reduction targets while maintaining service

FIGURE 5-2: IEUA NON-LABOR O&M COSTS



reliability. The Agency is working to improve these management practices through further expansion of on-site renewable energy and a renewed focus on energy efficiency.

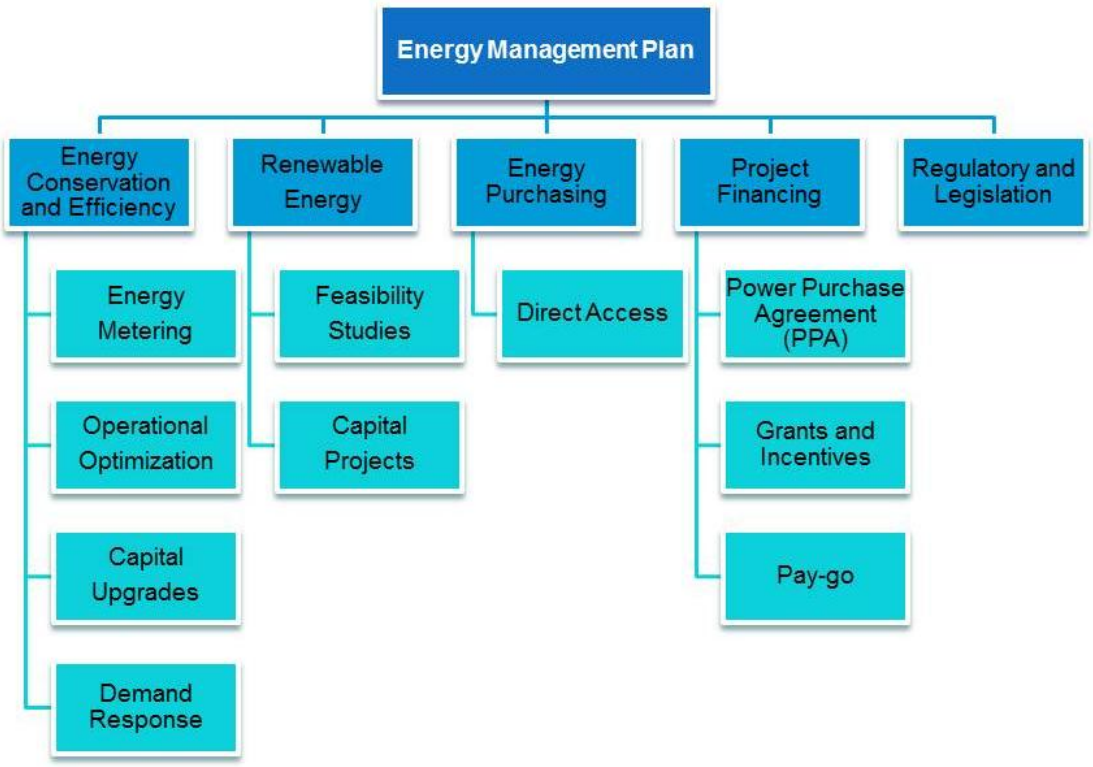
5.2 Energy Management Plan

The energy management plan provides planning and implementation guidelines for the reduction in energy demands from the grid within the Agency.

The cornerstones of the plan (Figure 5-3) are:

- Energy Conservation and Efficiency
- Renewable Energy
- Energy Purchasing
- Project Financing
- Regulatory and Legislation

FIGURE 5-3: ENERGY MANAGEMENT PLAN



5.3 Energy Conservation and Efficiency Planning

Optimizing energy efficiency not only results in reduced O&M costs, but can also increase treatment efficiency and capacity. To meet these goals, staff will continue to evaluate all the major process systems and follow through with the development and implementation of the effective energy conservation and efficiency projects. Improvement in this area is a key to reducing the Agency's peak demand (estimated 13% reduction in 10 years).

Some of the key components of the Energy Conservation and Efficiency planning include:

- Energy Usage Evaluation
- Operational Optimization
- Capital Upgrades
- Demand Response

5.3.1 Energy Usage Evaluation

At many facilities, the energy use is recorded at a single metering location. Although this is effective for billing purposes, it does not allow personnel to see the energy used by individual processes. Sub-metering, which tracks energy use by monitoring large equipment or individual processes' energy consumption, can be a valuable tool in tracking and optimizing energy usage. The Agency has recently initiated and partially implemented an energy sub-metering program.

Sub-metering involves the use of digital meters connected to the SCADA system as a resource to help monitor kW, kWh, amperes, load factor and other units of energy consumption. A combination of sub-meters and load profiling data can help staff understand operating patterns, increase operating efficiency, assist in identifying malfunctioning equipment and reduce energy demand charges. In addition, this electronic data can be brought into the RWRP control systems, which will enhance operational control of the facilities, reduce maintenance costs, and prolong equipment operating life.

The Agency has already implemented sub-metering at each of its recycled water pump stations, and has begun to install sub-metering for all high-power/high-use equipment at Agency facilities with the intent to complete the project during the next fiscal year. Sub-metering will give the Agency visibility in energy usage and allow staff to effectively and efficiently select and participate in certain Demand Response programs.

5.3.2 Operational Optimization

A comprehensive energy audit allows a facility to identify energy demand from various facility operations. By determining the energy demands of the various processes and equipment at a RWRP, personnel can focus energy conservation measures on the most

energy-intensive processes. The objectives at most facilities are to lower energy consumption, demand, and costs. In some cases, life-cycle cost analyses and value engineering can be used to help assess and optimize the selection of individual components and systems.

To the extent allowed by currently available data, performance management tools (i.e., Key Performance Indicators (KPI) and Unit Production Costs (UPC)) are being used to monitor energy use and energy generation at the facilities. These tools are important components of an effective energy management program. As more data on energy use become available through sub-metering, the KPI and UPC tools will be expanded to take full advantage of the information collected from facility energy audits.

Along with sub-metering information data, an energy audit can determine the most energy-intensive operations. Energy usage can be compared across similar facilities to identify areas that should be examined further. Once the efficiencies of different pieces of equipment and process operations are determined, the facility can begin to develop energy conservation measures by answering the following questions for each piece of equipment and process:

- Does the process/equipment need to run at all?
- Is it possible to run the process/equipment for fewer hours?
- Is it possible to shift this activity to off-peak hours (for some auxiliary functions)?
- Will process optimization and modifications or equipment upgrades reduce energy usage?
- What equipment is most energy efficient for this process?

The answers to these questions will help determine which processes can be modified, or if equipment can either be operated more efficiently or replaced to save energy.

5.3.3 Capital Upgrades

Agency staff has already targeted a variety of processes that can be upgraded to improve energy efficiency. Nearly 40% of the energy demand at the treatment facilities is from aeration blowers and recycled water pumping. Increased energy efficiencies have been realized through the installation of high-efficiency pumps and motors, as well as extensive use of variable frequency drives (VFDs).

Energy usage by pump and blower motors typically accounts for more than 80% of a RWRP's energy costs. Since high-efficiency motors are up to 8% more efficient than standard motors, upgrading to high-efficiency motors can significantly reduce the facilities' energy costs. Design improvements and more accurate manufacturing tolerances are keys to the improved efficiencies with these motors. In addition, these motors typically have

greater bearing lives, lower heat output, and less vibration than standard motors. Although high-efficiency motors have a 10-15% higher initial cost, these motors are included as a standard requirement in all new purchases and replacements due to their lower energy consumption and lower failure rates.

Another major source of RWRP energy use, and therefore a focus area for demand reduction, is the aeration systems used to treat the wastewater. Fine bubble diffusion, which is inherently more effective than coarse bubble diffusion in improving oxygen transfer efficiency, has already been widely employed at Agency facilities. Performance optimization is key to maintaining the high efficiency of this energy-intensive process. This can be done, for example, by monitoring performance with sub-metering, which may result in more frequent maintenance to ensure that the system is functioning at optimal capacity.

The Agency recently repaired the air distribution system at CCWRF and replaced the aeration basin panels at RP-5, reducing the combined blower power demands by approximately 260 kW, for an estimated savings of $200,000 per year.

During this planning period, the Agency will also evaluate dissolved oxygen control system enhancements through online ammonia and nitrate analyzers to optimize aeration blowers output. Staff will also evaluate the potential benefit of employing large bubble mixing rather than propeller mixing in the anoxic zones.

Anticipated capital projects over the next few years include: aeration blower replacement with high speed turbo blowers, optimization of recycled water pumping and storage, and oxygen delivery system to aeration basins improvements.

5.3.4 Demand Response

Southern California Edison (SCE) offers a variety of Demand Response (DR) Programs that help curtail statewide electricity usage during the peak season (June to early October). From 2008 to 2010, the Agency has participated in one of these programs, designated as a Time-of-Use Base Interruptible Program (TOU-BIP). However, because of the financial risk associated with the participation in the BIP program, the Agency has terminated the TOU-BIP contract, and since July 2011, has participated in a Demand Response (DR) program through EnerNOC (a SCE authorized third-party DR provider).

Some of the benefits of the DR program compared to the BIP are:

- No penalties for under-performance or non-performance other than reduced future payments to reflect the actual delivered capacity;
- Curtailment capacity may be adjusted on a monthly basis;
- Real time electricity usage monitoring through a web based software; and

- Eligibility of SCE Technical Assistance and Technology Incentives (TA&TI) Program

The Agency has agreed to provide EnerNOC a total cumulative curtailment of 1,700 kW for all facilities enrolled in the program (RP-1, RP-2, RP-4/IERCF, RP-5 and CCWRF) at a value of approximately $100,000 per year.

Reduced energy import from the grid during demand response events is primarily achieved by shutting down some of the recycled water pump stations and through reduced ventilation at the IERCF. These temporary energy conservation techniques do not have any negative impact to the recycled water customers (operations staff was able to increase the reservoir level prior to the event) or to the indoor air quality at IERCF.

5.4 Renewable Energy

Production of renewable energy has been a longstanding goal of the Agency. The traditional use of biogas-fueled internal combustion engines (ICE) has provided up to 25% of the peak energy demands of the Agency. Recent regulatory updates by the SCAQMD have resulted in significant restrictions for the future use of ICEs in southern California. In an effort to diversify and maximize renewable energy generation, the Agency pursued the installation of 3.5 MW of solar power in 2008, a 1 MW wind turbine in 2011 and a 2.8 MW biogas fuel cell in 2012. The combination of these renewable installations have provided more than 50% of peak energy demand Agency wide, while achieving net-zero energy consumption at RP-1 and RP-4 during winter months and net energy production at RP-2. Details of key renewable energy capital project activity are outlined below.

5.4.1 Solar Project

The Agency installed 3.5 MW of solar power at five Agency facilities: CCWRF, RP-5, IERCF and two arrays at RP-1. The project was financed through a power purchase agreement (PPA). The PPA provider designed and installed the entire project in 2008. The PPA provider operates and maintains the solar system, while the Agency purchases all the power generated by the solar PV arrays for a period of 20 years. The agreed power purchase price is fixed with a predefined escalation rate, which eliminates the effects of price swings by the local power utility. Since the solar arrays are designed to maximize energy generation during peak periods, the Agency anticipates reduced demand and costs, especially during the summer months.

5.4.2 Wind Power Project

A 1 MW wind turbine generator was commissioned at RP-4 in December 2011. The tower is 180 feet high, with a rotor diameter of 201 feet. Similar to the aforementioned projects, the facility was financed and developed through a PPA. The PPA provider worked to assess the wind resource, select equipment, manage installation, and secure construction financing and tax equity investment. The Agency will purchase the power generated from the wind turbine at the agreed upon price over the next 20 years.

5.4.3 Fuel Cell Project



Although the solar and wind projects are valuable diverse assets within the Agency's renewable portfolio, they are also weather-dependent technologies that do not provide baseload power for the facility. Moreover, the systems do not capitalize on the wastewater treatment plant's digester gas production, which is a fundamental component in the Agency's attainment of the 2020 goals. In 2010, the Agency signed a 20-year PPA to install, operate and maintain a 2.8 MW fuel cell system at RP-1 fueled primarily by renewable biogas. Under the agreement, the PPA provider was responsible for funding, design, construction, operation and maintenance of the system. The Agency purchases power generated from the fuel cell plant at an agreed upon price over the next 20 years, and uses the heat generated from the process to heat the anaerobic digesters. The fuel cell plant startup with natural gas occurred in June 2012; digester gas was introduced in October 2012.

More so than the wind or photovoltaic system agreements, the fuel cell public-private partnership greatly benefits the Agency by avoiding prohibitive capital investments and mitigating the inherent risks associated with biogas fuel cells. Previous digester gas fuel cell installations experiencing contaminant poisoning have suffered from long term operational interruptions due to disputes between the fuel cell and digester gas treatment system manufacturers. By placing the responsibilities of gas cleaning and stack performance on a single third party, the Agency hopes to avoid such interruptions, optimize equipment maintenance, and streamline necessary repairs. Key performance indicators were written into the power purchase agreement to guarantee that both the facility (digester gas production, H2S and siloxane concentrations) and third party

(digester gas usage, operational uptime) achieve a level of performance that is economically beneficial to both parties.

5.4.4 RP-5 Food Waste Project

In 2010, the Agency signed a multi-year agreement with a private company to lease the site and operate and maintain the RP-5 Solids Handling Facility (RP-5 SHF) for a ten-year term. The company will be processing food waste using the two existing vertical digesters at RP-5 SHF with the purpose of generating digester gas. The digester gas will be conveyed to RP-5 for power generation using two ICEs (1,500 kW each). The Agency will purchase the generated power and heat at a discounted rate. The company anticipates the completion of Phase I, which entails the full operation of one digester and one ICE, by 2013. Total food waste processed during Phase I will be approximately 300 tons per day. Phase II, which involves commissioning a second digester and ICE and an additional 300 tons per day of food waste processed, will follow after two years.

5.5 Renewable Energy Pricing

In addition to positively impacting the environment, the renewable energy installations command the potential to produce long-term benefits for the Agency through stable rate structures. Considering the large historical variation in grid pricing from year to year, establishing a fixed energy pricing forecast for much of the Agency's demand is a valuable planning tool for energy management.

Prospective cost savings depend on the negotiated electricity purchase price of each PPA, anticipated rate increases from the electrical grid, and expected power generation from the installations. The negotiated purchase pricing (Figure 5-4), on a $/kWh basis, generally compares favorably to grid purchase pricing. Current PPA purchase rates are slightly higher than the grid purchase rates, but the long-term benefits become apparent when comparing the annual escalating scales between the two costs. Based on energy industry forecasts, grid electricity costs are expected to increase between four and six percent, on average, over the next 20 years. Since each PPA's annual escalation rate is below four percent, the Agency anticipates that all PPA electricity purchase pricing will be lower than grid pricing within the next three to seven years depending on actual grid escalation.

The Agency anticipates several different cost savings from implementing the energy management plan. In addition to lower long term energy purchase pricing, the renewable PPAs are expected to provide cost savings through reduced grid demand during peak periods. The electrical utility's energy pricing structures are based on tiered pricing, with peak periods subject to the highest tariff schedules. Since the solar and fuel cell

installations drastically reduce the Agency's reliance on the grid during peak times, energy costs on a $/kWh basis are lower due to a reduced average tariff.

When combined with future energy efficiency projects that are expected to further reduce energy demand on the grid, the Agency expects immediate cost savings. Cumulative savings (Figure 5-5) over the life of the power purchase agreements indicate significant long term benefits regardless of the utility's annual escalation rate.

FIGURE 5-4: RENEWABLE ENERGY UNIT PRICING

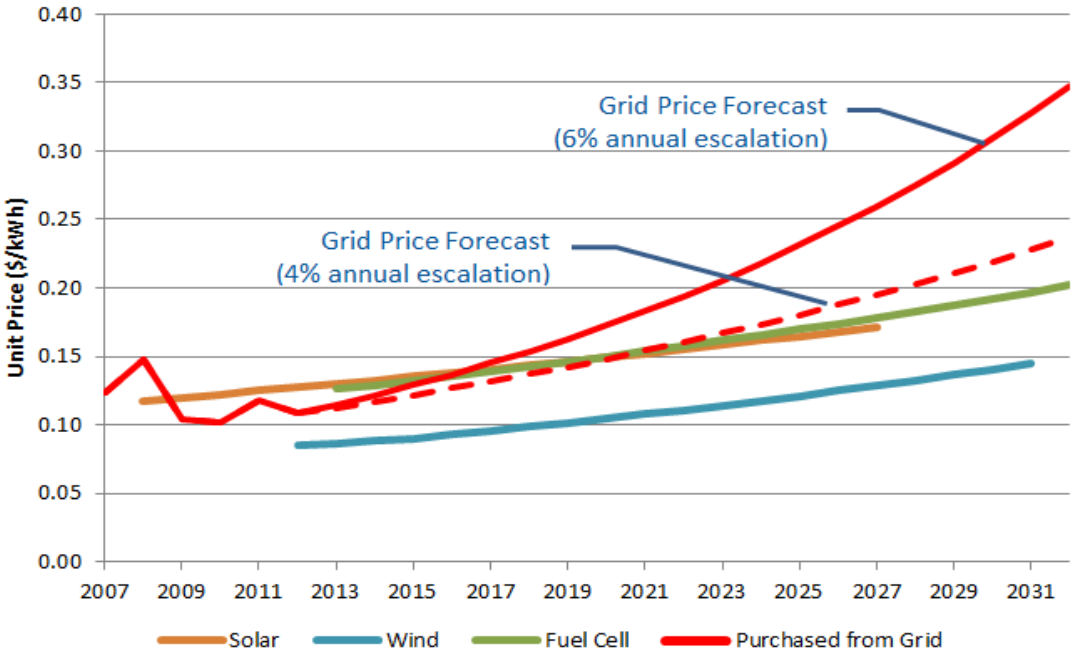
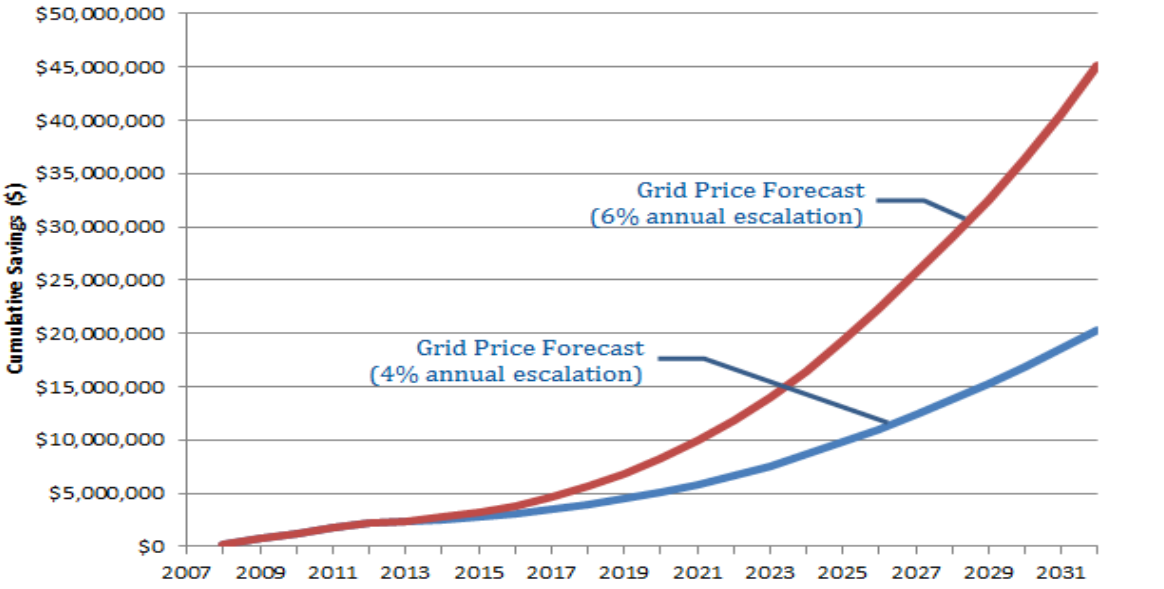


FIGURE 5-5: CUMULATIVE SAVINGS FROM ON-SITE RENEWABLE GENERATION



5.5.1 Energy Purchasing

Electricity

The Agency has unbundled service, or Direct Access (DA) at four of its five largest accounts and bundled service to the remaining one. In the unbundled service, the commodity is provided by an electricity service provider (ESP) rather than the local utility company. The current two-year agreement provides cost stability, lower commodity prices and reduces the Agency's exposure to volatility within the energy market. A portion of the Agency's electricity is purchased at a fixed price from the ESP. The excess electricity consumed is based on the average "day ahead" cost from an index within the Intercontinental Exchange. The Agency pays SCE for delivery costs. In the bundled service, the Agency pays electricity and transmission costs to SCE. The Agency has realized considerable savings during the summer months utilizing direct access (DA) agreement. A list of the Agency's facilities, along with the respective tariff at each facility, is listed in Table 5-1.

TABLE 5-1: FACILITY SCE TARIFFS AND ANNUAL IMPORTED USAGE

Facility	SCE Tariff	Direct Access (DA)
RP-1	TOU-8-B-STANDBY[1]	Yes
RP-2 Solids	TOU-8-B-STANDBY	Yes
RP-4	TOU-8-B	Yes
RP-5	TOU-8-B	No
CCWRF	TOU-8-B	Yes

5.6 Project Financing

There are several federal and state incentive and rebate programs available for renewable energy projects in California (Table 5-2). The incentives, which are usually performance-based, are available to both public and private sectors at different rates. In order to receive the incentive, the public entity must finance, design, and construct the projects. The public sector also has the option to play host site to a renewable project and have the private entity finance, design, construct and perform the O&M. This type of arrangement is normally implemented through a Power Purchase Agreement. The energy produced by the

[1] Standby - Standby demand represents the entire reserved capacity needed for SCE to serve the customer's loads regularly served by the customer's generating facility when such facility experiences an outage. SCE's Rate Schedule S is mandatory for many customers who self-generate, with the exception of Net Energy Metering (NEM)-eligible generators.

privately funded power plant is then purchased by the host (the Agency) for an agreed upon price for a specified period, usually 20 years. The private sector is able to take advantage of tax credits and accelerated depreciation opportunities not available to the public sector, though these advantages are somewhat offset by lower performance incentive level rates than offered for public sector delivered projects.

As discussed in the prior section, the Agency has successfully used the PPA approach for its Solar, Wind, and Fuel Cell renewable projects. This approach has allowed the Agency to transfer the financing and other risks, including operations and maintenance, to the contractor. The Agency has avoided more than $45 million in capital outlay through this process, and will continue to evaluate design-build and PPA options for upcoming projects.

There are significant incentives for implementation of energy conservation upgrades that reduce demand. This has been accomplished at the IERCF, where a substantial rebate was received from SCE to pay for approximately half of the capital cost of the upgrade. Similar opportunities are being evaluated and implemented as needed.

TABLE 5-2: ENERGY FINANCIAL INCENTIVES

Financial Incentive	Type
Federal	
Modified Accelerated Cost-Recovery System (MACRS) + Bonus Depreciation (2008-2013)	Corporate Depreciation
Business Energy Investment Tax Credit (ITC)	Corporate Tax Credit
Renewable Electricity Production Tax Credit (PTC)	Corporate Tax Credit
USDA - High Energy Cost Grant Program	Grant Program
Qualified Energy Conservation Bonds (QECBs)	Loan Program
U.S. Department of Energy - Loan Guarantee Program	Loan Program
State	
Property Tax Exclusion for Solar Energy Systems	Property Tax Incentive
California Solar Initiative - PV Incentives (CSI)	State Rebate Program
Self-Generation Incentive Program (SGIP)	State Rebate Program
Feed-In Tariff	Performance Based Incentive
Southern California Edison	
Savings by Design	Utility Rebate Program
On-Bill Financing Program	Utility Load Program
Non-Residential Energy Efficiency Programs	Utility Rebate Program
Southern California Gas Company	
On-Bill Financing Program	Utility Loan Program
Non-Residential Energy Efficiency Programs	Utility Rebate Program

In addition to well-funded State rebate programs like the California Solar Initiative (CSI) and Self-Generation Incentive Program (SGIP), several other agencies (Department of

Energy, California Energy Commission, Air Quality Management District) provide grant opportunities for energy efficiency and renewable energy projects. However, these grants are very competitive, funding is limited, and usually only emerging technologies or demonstration projects are eligible.

5.7 Regulatory and Legislation

Changes in environmental regulations and new legislation can significantly influence energy programs and costs. The revision of Rule 1110.2 by SCAQMD is an example of a regulatory change that significantly impacts the direction of the Agency's renewable energy generation portfolio. Existing interconnection agreements rules and conditions represent a major roadblock to the Agency's energy management plan, limiting the opportunity of new distributed generation and efficiency projects, and reducing the Agency's participation in demand response events.

In September 2012, the Governor signed two bills (AB 1900 and AB 2196) to promote in-state production and distribution of biomethane. The same month, the Governor also signed SB 1122 to create a biomass/biogas energy Feed-in-Tariff program which allows public utilities to purchase up to 250 MW. Of the 250 MW, 110 MW is allocated "for biogas from wastewater treatment, municipal organic waste diversion, food processing, and co-digestion."

Due to the propensity for changes from new regulations and/or new legislation to have major impacts on the direction of the energy management plan and the cost of power, it is crucial that any changes in these areas are proactively tracked and impacted where appropriate in the best interest of the Agency. This important role is achieved through dedicated Agency staff in conjunction with trade organizations like Southern California Alliance of Publicly Owned Treatment Works (SCAP), California Association of Sanitation Agencies (CASA), and WateReuse.

5.8 Carbon Footprint

A key driver in the implementation of the energy management plan is carbon footprint reduction. From 2009 to 2012, the Agency's facilities generated approximately 31,100 MWh through renewable projects. In addition, 17,400 MWh of electricity was conserved through efficiency projects. Combined, these savings are equivalent to 34,200 metric tons of CO_2 greenhouse gas emission reduction, or 7,100 passenger vehicles off the road for an entire year[2].

[2] Source: USEPA Greenhouse Gas Equivalencies Calculator http://www.epa.gov/cleanenergy/energy-resources/calculator.html#results

5.9 Glossary

Base Interruptible Program (BIP) – Program that pays an incentive to reduce facility's load to or below a pre-selected Firm Service Level (FSL).

Base Load – The minimum amount of electric power delivered or required over a given period of time at a steady rate.

Bundled Service - Customers who receive electric power, transmission, distribution, billing, metering and related services from SCE.

Carbon Footprint - The amount of carbon dioxide emitted through the combustion of fossil fuels. In case of a business organization is the carbon dioxide emitted either directly or indirectly as a result of its everyday operations.

California Public Utilities Commission (CPUC) - State agency that regulates the rates and services of privately owned utilities (electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies).

Demand Charges – Reflect the cost of transmission and distribution facilities built to meet customers' peak power demands. Calculated on a per-kilowatt (kW) basis for a customer's maximum registered power demand.

Demand Response (DR) - Programs to help qualifying customers reduce their energy usage during peak times, while earning financial incentives.

Direct Access (DA) - Customers who purchase electricity from an Electric Service Provider (ESP), and receive distribution and transmission electric service from SCE.

Electric Power Grid (Grid) - A network of power lines and associated equipment used to transmit and distribute electricity over a geographic area.

Electric Service Provider (ESP) - A third party which provides electricity generation.

Energy (Usage) = Energy is the ability to do work (pump water, blow air, cooling, lighting)

- kWh = kilowatt hour
- MWh = Megawatt hour = 1,000 kWh

Feed in Tariffs (FIT) – Allows small renewable generators (1.5 MW or less) to sell power to the utility at predefined terms and conditions, without contract negotiations.

Firm Service Level (FSL) - The amount of electricity customer determines is necessary to meet their operational requirements during a curtailment event.

Greenhouse gases (GHGs) - Carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6). CO2-equivalent (CO2-eq) is the universal unit of measurement to indicate the global warming potential (GWP) of each of the six greenhouse gases.

ICE = Internal Combustion Engine

Load - The amount of electric power delivered or required at any specified time at a facility.

Load Gap – The difference between the facility electric load and the electricity generated on site. Equivalent to the electricity purchased from the grid.

Net Energy Metering (NEM) - Allows a customer-generator to receive a financial credit for power generated by their onsite system and fed back to the utility (grid).

Non-Renewable Energy - An electricity-generating source that can only be used once, such as oil, coal, natural gas and nuclear energy.

Peak Load - The highest electrical demand within a particular period of time.

Power (Demand) = Rate at which energy is used, or work is performed (energy used for a given unit of time)

- kW = kilowatt
- MW = Megawatt = 1,000 kW

Renewable Energy (Green Power) - Sources of energy which can be generated from natural resources such as wind, solar, biomass, small hydropower and geothermal sources.

Renewable Energy Credit (REC) - Also known as green tags, green energy certificates, or tradable renewable certificates. RECs represent the technology and environmental attributes of electricity generated from renewable sources (1 REC = 1 megawatt-hour).

Self-Generator - A plant whose primary product is not electric power, but does generate electricity for its own use or for sale on the grid.

Single Family Home Electricity Usage[3] = 12,773 kWh/yr.

Standby - Standby demand represents the entire reserved capacity needed for SCE to serve the customer's loads regularly served by the customer's generating facility when such

[3] Source: EIA (2008). 2005 Residential Energy Consumption Survey. EPA (2011) eGRID2010 Version 1.1. U.S. Environmental Protection Agency, Washington, DC

facility experiences an outage. SCE's Rate Schedule S is mandatory for many customers who self-generate, with the exception of Net Energy Metering (NEM)-eligible generators.

Sub Metering - Meter connected after the main revenue meter typically used for information monitoring purposes.

Tariff - A published volume of rate schedules and general terms and conditions under which a product or service will be supplied.

Time of Use (TOU) - A rate in which predetermined electricity prices vary as a function of usage period, typically by time of day, by day of the week, and/or by season.

Transmission - The movement or transfer of electric energy over an interconnected group of lines and associated equipment between points of supply and points at which it is transformed for delivery to consumers or is delivered to other electric systems. Transmission is considered to end when the energy is transformed for distribution to the consumer.

Variable Frequency Drive (VFD) - A device that converts incoming power into other desired frequencies to allow for motor speed control.

6.0 RECYCLED WATER PROGRAM

6.1 Recycled Water Program Background

The Agency has been serving recycled water to its member agencies since formation of the Regional Sewerage Service Contract in 1972. Initially, recycled water was delivered to Whispering Lakes Golf Course and Westwind Park in the city of Ontario, as well as to Prado Regional Park and El Prado Golf Course in San Bernardino County. In the early 1990's, the Agency planned and built the first phase of the Carbon Canyon Recycled Water Project, which now serves several customers in Chino and Chino Hills. The Agency also initiated planning of a regional recycled water delivery system. This planning effort culminated in the completion of the IEUA Regional Recycled Water Program Feasibility Study in January 2002.

The 2002 Feasibility Study included an assessment of the potential recycled water customers within the Agency's service area. Agency staff worked with member agencies to identify over 1,000 potential customers. This information was used to plan the regional and local recycled water distribution pipelines. Pipeline locations were selected to provide recycled water to the largest customers or groups of customers, resulting in cost-effective facilities. The Feasibility Study identified facilities to ultimately deliver over 70,000 acre-feet of recycled water per year (AFY) to customers and recharge sites throughout the service area.

In 2005, the Agency completed development of the Regional Recycled Water Program Implementation Plan, which updated information from the 2002 Feasibility Study. The Implementation Plan identified additional future recycled water demand, primarily in the developing areas of Chino and Ontario. The plan identified plans for phased construction of a backbone distribution system over ten years, with provision for additional expansion beyond the ten-year planning horizon. Ultimately, this distribution system layout was planned to serve over 1,200 of the largest customers and supply over 93,000 acre-feet per year (AFY), including 33,000 AFY for recharge.

The Agency adopted the Recycled Water Business Plan (Business Plan) in 2007 to accelerate the implementation of the 2005 Regional Recycled Water Program Implementation Plan. The Business Plan established concrete goals for increasing the recycled water beneficial use aggressively to take advantage of favorable economy for the implementation of the projects.

6.2 Recycled Water Business Plan

The Recycled Water Business Plan (Business Plan) was developed in 2007 to accelerate the Regional Recycled Water Implementation Plan (2005) as a response to potential water supply shortages and reductions in MWD imported water supplies. The implementation of the Business Plan has resulted in multiple benefits as summarized below. Since the inception of the Business Plan, the Recycled Water Program has made significant improvements in recycled water usage and connected demand. The connected demand for the recycled water has more than tripled since FY 2006/07 from 13,000 AFY to over 43,800 AFY. Recycled water and groundwater recharge sales have nearly tripled as well. Major benefits of the recycled water program include:

- New Water Supply – 30,000 AFY Increase in Connected Demand since FY 2006/07.
- Recycled Water Revenues – About $10 million/year (wholesale rate revenue plus MWD rebate). The goal of the program was to eventually be self-funded through recycled water sales revenue.
- The recycled water supply is not impacted by drought and will mitigate the impacts of regional or statewide water supply limitations.

The Business Plan as originally conceived was a three-year plan with an estimated cost of approximately $188 million. With the changes in the construction environment and economy that occurred starting in late 2007, the projects and goals were able to be achieved by less than sixty percent of the original estimate, at $111 million.

The Agency's commitment and coordination with the member agencies within the Chino Basin to increase and ensure a reliable supply of recycled water to residents and customers has been continuous since the adoption of the Business Plan. However, it should be noted that since 2010, the rate of connections for direct use customers to the regional recycled water system has slowed down. The most significant inhibitors to system expansions can be attributed to the recession and limited financial resources. The pace of making new connections by member agencies for direct use customers significantly lowered during the last fiscal year of 2011/12, with a new connection of 600 AFY since the focus of member agencies has shifted to pursuing additional regional groundwater recharge projects. There is little doubt that the recycled water use will continue to increase, but with limited financial resources, the pace of expansion will continue to languish.

Expansion capital has been significantly reduced during the 2008 economic slowdown and continues to inhibit system growth. To promote growth, the Agency has a loan program with limited funding to assist with financing customer retrofits. The Agency will seek additional grant funding in order to help stimulate the connections and recycled water usage in order to make the best use of the investments already made in the regional recycled water distribution system. The Recycled Water Program Plan will be prepared to adjust to the new goals, timelines and projects that will maximize the beneficial reuse of the recycled water in the Chino Basin.

Annual projected recycled water sales numbers are now derived from member agency projections for the near term (three years), and long term sales estimates are derived from the 2010 Urban

Water Management Plan, as summarized in Table 6-1. These forecasts are used in the rate model for the recycled water fund to establish rates for recycled water reuse.

TABLE 6-1: ANNUAL GOALS FOR RECYCLED WATER SALES

	FY 11/12 Actual	FY 12/13	FY 13/14	FY 14/15	FY 19/20
Direct Use	20,606	20,000	21,400	22,600	32,600
Groundwater Recharge	8,634	10,000	10,000	13,650	21,000
Total RW Use	**29,240**	**30,000**	**31,400**	**36,250**	**53,600**

6.3 Regional Recycled Water Priorities

In September 2000, the Agency's Board and Regional Technical and Policy Committees adopted a recycled water policy which defines the roles and responsibilities of the Agency and the Regional Contracting Agencies for the construction and ownership of the regional and local facilities. Regional facilities are defined as pipelines, pump stations, and reservoirs which serve recycled water to a recharge site or to more than one Contracting Agency. Regional facilities will be constructed and owned by the Agency. Local facilities that deliver recycled water from the regional facilities to customers within a Contracting Agency's service area will be the responsibility of that respective agency to plan, build, operate, and maintain such facilities. Local facilities will primarily be pipelines (local laterals) and may also include pump stations and reservoirs. With the implementation of the Business Plan, new policies have been created to include provisions for: regional funding of local storage facilities which reduce regional storage needs; provision for reimbursement of regional facilities constructed by others (local agency or developer); and financing of local facilities and customer on-site retrofits.

The Agency's regional recycled water system consists of a looped pipeline system which connects all four Regional Water Recycling Plants. The regional facilities have been defined in over 50 separate projects of pipelines, pump stations and reservoirs. These projects have been grouped into priorities and categorized into four project areas: Northeast, Northwest, Central and the Southern Project Area. The phasing priority was determined based on the amount of recycled water that each phase could serve, and the proximity of each phase to one of the plants or existing recycled water supply systems. Priorities I and II of the program will deliver recycled water to most of the recharge sites since the recharge sites represent significant recycled water users. The Agency has completed the priority projects in the Northeast and Northwest Areas, and is in the construction phase for the Southern Area and in the final design phase for the Central Area. The Regional Recycled Water Program facilities in the various stages of implementation are shown in Figure 6-1.

6.4 Recycled Water Program Plan

The 2007 Business Plan was unanimously approved by the Agency's Board of Directors and the member agencies, with a goal to implement an aggressive schedule to complete the backbone infrastructure, increase groundwater recharge, and increase direct use customers. With the languishing new direct user connections by member agencies, a shift in focus and goals over the next ten years is needed in order to achieve a stabilized rate structure, implementation phasing, and planning of facilities needed to obtain the added volume of recycled water sales. The updated plan will focus on the current system limitations as designed for "interruptible" groundwater recharge to maximize groundwater recharge year-round, including peak summer months. Key policy issues to consider for the change in the direction will be sales of recycled water outside the member agency service area, and potentially securing long term agreements to have additional recycled water supply available during peak summer months. The goal is to have an updated Recycled Water Program Plan completed by the end of 2013.

6.5 Local Recycled Water Facilities

As described previously, local recycled water facilities are those which serve only one contracting agency. Each local agency is responsible for the planning, design, construction, and operation of local laterals within its service area. Agency staff is working closely with the agencies to coordinate their recycled water planning efforts. In order to assist the local agencies with the implementation of their recycled water systems, the Agency is providing technical assistance and, if requested, financing of the local agency's facilities. Funds for this financing are included in the TYCIP and will be funded via State Revolving Fund Loan proceeds. However, the amount of funding will depend on the Agency's needs. A similar financing approach was used for the construction of the Carbon Canyon Recycled Water Project in the 1990s.

6.6 Regional Recycled Water Program Summary

Major projects and initiatives are summarized below. Key projects (generally over $1 million) are summarized in project forms at the end of this chapter.

Completed Activities & Projects for FY 2011/12:

- RP-1 930 Pump Station Expansion — October 2011
- Prado Sleeve Valve Modifications — October 2011
- Northwest Area Recycled Water Projects — Spring 2012

The RP-1 930 Pump Station Expansion project included the design and construction of the fifth pump station at RP-1 to provide reliability and redundancy to supply the southern service area peak recycled water demands.

The Prado Sleeve Valve Modifications project included the design and replacement of the valve to allow operation at lower flows in order to maximize the beneficial use of recycled water during the summer months and minimize creek discharges.

Northwest Area Regional Recycled Water Facilities project included the design and construction of Regional Recycled Water Facilities (Pipeline, Pump Station and Reservoir) and local laterals; the project serves recycled water primarily to customers in the City of Upland and Cucamonga Valley Water District. The Northwest Area projects include:

- The **1630 West Pump Station** project is located at Vineyard Park in the City of Ontario near Sixth Street and Baker Avenue. The pump station utilizes three 250 horsepower pumps to boost recycled water from the 1299 Pressure Zone to the 1630 zone.

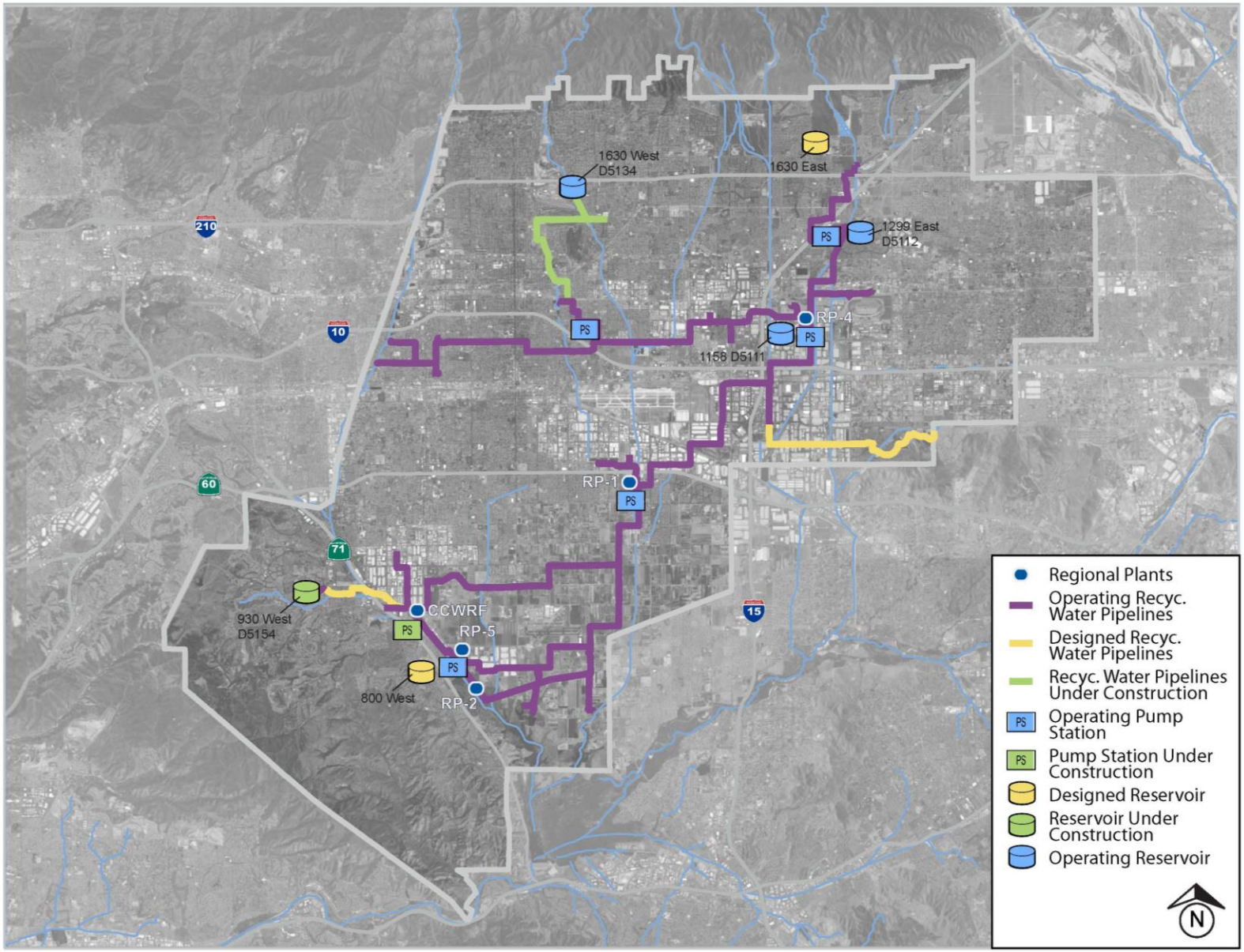
- The **1630 West Recycled Water Pipeline- Segment A** consists of approximately 10,500 linear feet of 24-inch diameter recycled water pipeline that conveys recycled water from the 1630 West Recycled Water Pump Station in the City of Ontario to the Memorial Park in the City of Upland. Segment A is one of three segments of pipe which serves as the backbone for transporting water from the 1299 to the 1630 Pressure Zone.

- The **1630 West Recycled Water Pipeline- Segment B** consists of approximately 13,000 linear feet of 24-inch diameter recycled water pipeline. The 1630 West Recycled Water Pipeline, Segment B, is the second portion of the Regional Pipeline that serves as a backbone to transport water from the 1299 Pressure Zone to the 1630 Pressure Zone. This pipeline starts at the terminus of the 1630 West Recycled Water Pipeline, Segment A, and terminates in Baseline Road on the border of the Cities of Upland and Rancho Cucamonga.

- The **1630 West Recycled Water Pipeline- Segment C** consists of approximately 7,700 linear feet of 30-inch diameter and 800 linear feet of 24-inch diameter recycled water pipeline that conveys recycled water from the terminus of the 1630 West Recycled Water Pipeline, Segment B, to the 1630 West Recycled Water Reservoir Site and Red Hill Park in the City of Rancho Cucamonga. The 1630 West Recycled Water Pipeline, Segment C, is the third portion of the Regional Pipeline that serves as the backbone to transport water from the 1299 Pressure Zone to the 1630 Pressure Zone.

- The **1630 West Recycled Water Reservoir** project consists of one three (3) million gallon recycled water reservoir at the existing CVWD site located at the northwest corner of the intersection of 19th and Sapphire Streets.

FIGURE 6-1: IEUA REGIONAL RECYCLED WATER CAPITAL PROJECT PRIORITIES



Current/Near Term Projects Status as of February 2013:

- Recycled Water Connected Demand — 43,839 AFY (February 2013)
- Southern Area RW Projects - Construction — August 2014
- Wineville RW Pipeline Project – Final Design — April 2013
- Turner Basin Turnout– Construction — September 2013

Southern Area Regional Recycled Water Facilities – The project will design and construct Regional Recycled Water Facilities (Pipeline and Reservoir); the project will primarily serve customers located in the southern service area.
Status: The projects are scheduled for construction completion by August 2014.

Wineville Extension Recycled Water Pipeline – This project includes 4.6 miles of 36-inch pipe which will primarily build the Regional Recycled Water distribution system in the southern part of the City of Fontana and the eastern part of the City of Ontario. The pipeline will allow for the connection of commercial, industrial customers, parks, and schools within the cities of Ontario and Fontana and also utilize RP-3 and Declez Basins for Recycled Water recharge. ***Status: The project is in the final design stage. Permits are expected to be received for the project by April 2013. The construction completion is expected in the winter of 2014.***

Turner Basin Turnout Capacity Improvements - This project is the permanent solution to the required recharge water conveyance limitations at the Turner Basins. The turnout will include approximately 200 linear feet of 20-inch steel pipe and supply 10 cubic feet per second of water to the basins. An automated control valve and flow metering will also be provided. In order to equally supply all four of the recharge basins at the site, a bypass is also being constructed underneath the Deer Creek Channel. ***Status: The project closed bids on January 24, 2013. Construction was awarded on February 20, 2013. Construction completion is scheduled for September 2013.***

6.7 Funding

In order to accomplish the goals of the Business Plan, a financial plan has been developed. Implementation of the Business plan has been programmed and scheduled with the use of state and federal grant funds and SRF low-interest loans to minimize use of Regional Capital Fund transfers. Table 6-8 below summarizes the recycled water program's funding sources.

Annual revenues from recycled water sales are based on the Agency's recycled water rates, and rebates from the MWD LPP program. In the future years with the projected increase in volume of recycled water sales, the sales revenue is forecasted to make the recycled water fund to be self-sufficient, and cover its expenses and debt service costs.

TABLE 6-2: SOURCES OF FUNDS (IN MILLIONS)

Sources of Funds	Existing Projects	Northeast	Northwest	Southern	Central	Total
Grants	$14	$10.2	$8	$4.3	$4	$40.5
SRF Loan	41	18	-	21	-	80
Bond Funds	1.8	0.3	20	-	-	22.1
Other	34.7	-	-	-	-	34.7
Total*	**$91.5**	**$28.5**	**$28**	**$25.3**	**$4**	**$177.3**

*Totals do not include future receipts

6.8 Funding Status

STATE WATER RESOURCES CONTROL BOARD (SWRCB): To date the Agency has received funding contracts from the SWRCB for $22 million in grant funds and $80 million in SRF loans for Recycled Water Capital Projects Phase I through Phase VI. Financial Assistance for the Central/Wineville Area projects (Phase VII) in the amount of $26 million, along with a $4 million grant pending approval from the SWRCB billing, is expected to occur by the end of the fiscal year. Additionally, the Agency may apply for Phase VIII funding to include other projects in the Southern and North Eastern areas.

UNITED STATES BUREAU OF RECLAMATION (USBR): Since 2005, the Agency has received federal appropriations of over $19 million for the recycled water program. The remaining federal authorization of the Title XVI funds of $1 million is expected to be received for the Southern Area projects.

Prop 84 Grant Funding, Santa Ana Watershed Project Authority: The Agency has been informally awarded $1M of grant funding for the Central/Wineville Area projects, and $750,000 for the San Sevaine Improvement Project. Official award of the grant is expected by July 2013.

6.9 Permitting

Several regulatory and environmental permits and approvals are required to implement the Regional Recycled Water Program, and deliver recycled water. The Agency has made significant progress as well as completed many of the regulatory requirements. The following are the regulatory requirements and the current status of each permit process:

- CEQA – The Agency certified a Programmatic EIR in June 2002 which included the Agency's Wastewater Master Plan, Organics Management Business Plan, and the Regional Recycled Water Program. Supplements to the Programmatic EIR are prepared, when necessary, as specific project elements are better defined during each project design;
- RWQCB Waste Discharge Requirements and NPDES permit for direct reuse – All of the Agency's Water Recycling Plants have existing permits from the RWQCB for recycled water deliveries for direct reuse customers, i.e. irrigation, industrial, recreational impoundments.

On a quarterly basis, the Agency reports new customers connected to the recycled water system and recycled water use for each customer;

- DHS (currently named DPH) Title 22 Engineering Report – In order to assure that recycled water is not "cross-connected" to any potable water system, the California Department of Public Health requires an engineering report which identifies the potable and non-potable plumbing systems for each recycled water customer.

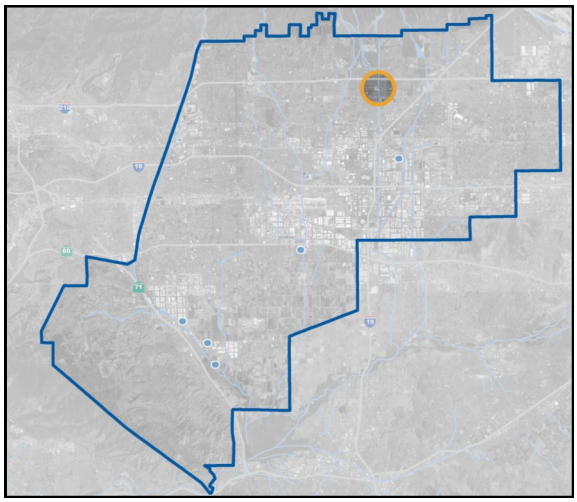
6.10 Current Ten-Year Capital Improvement Plan

The Recycled Water (WC) Fund tracks the revenues and capital project expenses associated with the development of the Agency's Recycled Water Program. The Recharge Water (RW) Fund tracks revenues and capital project expenses for the Recharge Program. The ten-year total of projected capital expenses for the WC Fund is $108 M, and RW Fund is $0.6M. Major new projects in each of these funds are summarized below in Table 6-3. The projects are primarily for the construction of the major new facilities included in the Recycled Water Business Plan, including pipelines, pump stations, and reservoirs, and the recycled water SCADA master plan. The construction program is phased so that the most cost-effective projects can be brought on-line first. As identified in the Business Plan, at the completion of the priority recycled water projects in southern and central service areas, the projects will focus on capacity improvements such as the RP-1 outfall parallel pipeline and increasing pumping and pipeline capacities as needed to meet the increasing connected demand in the system. The RP-1 outfall parallel pipeline will provide the capacity and reliability for the future growth in the southern area. Other projects include pipelines and turnouts for added groundwater recharge capacity for basins that are permitted and basins that could potentially be permitted.

TABLE 6-3: MAJOR NEW PROJECTS (IN MILLIONS)

Project #	Description	FY 13/14	FY 14/15	FY 15/16	FY 16/17-22/23	TYCIP FY13/14-FY22/23
EN07010	CCWRF PS Expansion	$3.8 M	$0.9 M	$0.4 M	$0.4 M	$5.5 M
EN13022	930 RW Pipeline	$5.1 M	$2.5 M	-	-	$7.6M
EN13023	930 RW Reservoir	$6.1 M	$0.5 M	-	-	$6.6M
EN06025	Wineville RW Pipeline – Segment A	$9 M	$5 M	-	-	$14 M
EN13045	Wineville RW Pipeline – Segment B	$7 M	$5 M	-	-	$12 M
EN12019	GWR & SCADA Upgrades	$0.8 M	$1.6 M	-	-	$2.4M
EN13001	San Sevaine Basin Improvements	$1.7 M	$0.8 M	-	-	$2.5 M
WR11017	Turner Basin/Guasti Park Multi Use Project	$1.1M	-	-	-	$1.1M
EN13029	Turner 1 Turnout & Deer Creek Channel	$0.8 M	-	-	-	$0.8 M
EN09007	1630 E. Pipeline, Segment B	-	-	-	$5.4 M	$5.4 M
EN13048	RP-1 RW Electrical Feed Upgrade	$1 M	-	-	-	$1 M
EN14041	RP-4 1158 &1299 RWPS Expansion	$0.1M	$0.5M	$3.0M	$0.4M	$4.0M
EN14042	RP-4 1158 RWPS Upgrades	$0.2M	$0.5M	$3.0M	$0.3M	$4.0M
EN19002	800 Zone Reservoir	-	-	-	$3.4 M	$3.4 M
EN19003	RP-1 Parallel Outfall Extension	-	-	-	$5.7 M	$5.7 M
EN14043	RP-5 Pipeline Bottleneck	$0.2M	$0.5M	$0.3M	$0.3M	$1.3M
EN20001	Lower Day Basin Pipeline	-	-	-	$2.5 M	$2.5 M
EN20003	Montclair Basin Pipeline	-	-	-	$1.5 M	$1.5 M
EN20005	800 PZ Pipeline Bottleneck	-	-	-	$1.3 M	$1.3 M
EN21001	Upland Basin Pipeline	-	-	-	$3 M	$3 M
	All WC/RW Projects	**$43.8M**	**$17.8 M**	**$8.9M**	**$38.1 M**	**$108.6 M**

Project	1630 E Recycled Water Pipeline Segment B
Program	Recycled water
Type	Capital Upgrades at Major Facilities
Priority	High
Project No	EN09007
Agency Contact	Sylvie Lee
Agency Level of Service Goals	Maximize the beneficial use of recycled water supply produced by the Agency



PROJECT DESCRIPTION

The 1630 East Recycled Water Pipeline Segment B will provide recycled water to the Etiwanda Debris Basin, and has the potential to provide service to Lower Day Basin. In the future, it can also be extended to the 1630 East Reservoir, where additional storage can be added to the regional system.

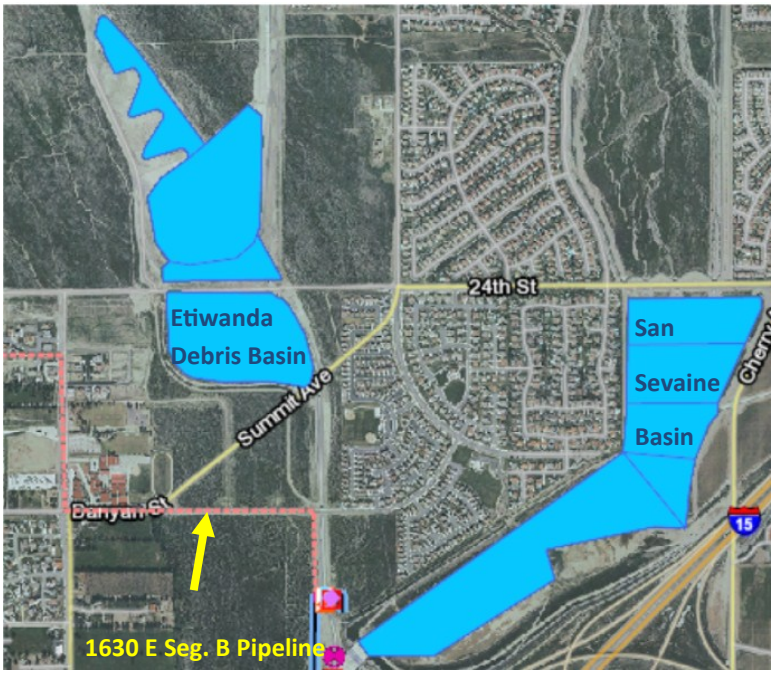
KEY PROJECT BENEFITS

- Maximize the recharge and beneficial reuse of the recycled water

FUNDING SOURCES

Name/Agency	Amount
SRF Loan (Recycled Water Capital)	$5,400,000
TOTAL	**$5,400,000**

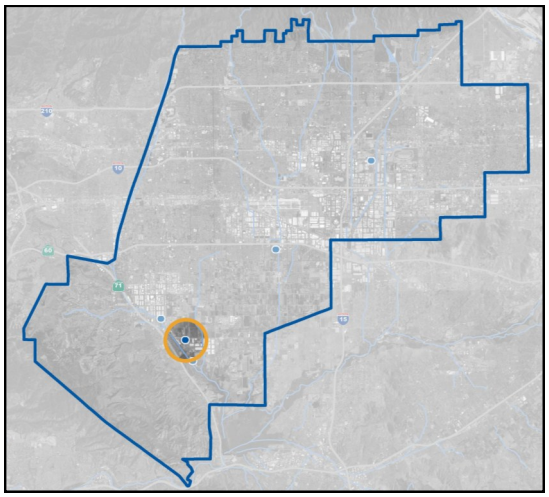
PROJECT LOCATION



PROJECT SCHEDULE

Phase	Cost	Start Date	End Date
Plan	$100,000	07/01/19	9/30/19
Design	$800,000	10/01/19	04/30/20
Construct	$4,400,000	05/01/20	03/31/21
Closeout	$100,000	04/01/21	06/30/21
TOTAL	**$5,400,000**		

Project	930 Zone RW Reservoir Construction
Program	Recycled water
Type	Capital Upgrades at Major Facilities
Priority	High
Project No	EN13022
Agency Contact	Sylvie Lee
Agency Level of Service Goals	Provide capacity for conveyance and treatment of 100% of discharges Meet 100% of planned peak hourly demands for recycled water



PROJECT DESCRIPTION

IEUA has a need for up to 9.5 million gallons (MG) of regional recycled water storage capacity in the west with 930-feet elevation pressure zone of its regional distribution system. The construction of the welded steel reservoir will provide a 5.0 MG of recycled water storage in the city of Chino Hills.

KEY PROJECT BENEFITS

- Manage recycled water (RW) demands more effectively during peak summer demands
- Provide storage and increase pump stations' capacities
- Supply demands from Southern Service Area instead of pumping from the Northern Service Area

FUNDING SOURCES

Name/Agency	Amount
SRF Loan (Recycled Water Capital)	$7,625,000
TOTAL	**$7,625,000**

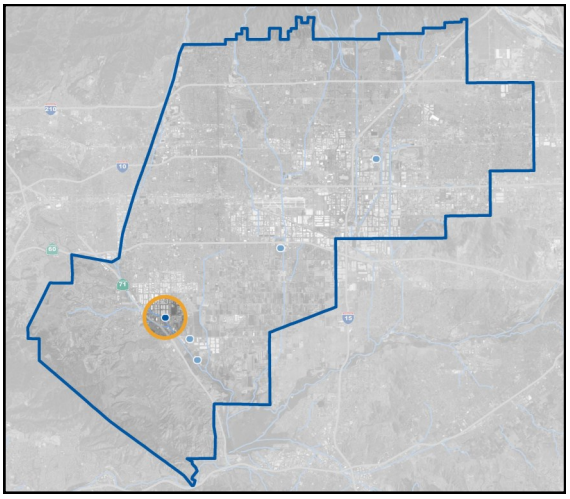
PROJECT SCHEDULE

Phase	Cost	Start Date	End Date
Plan	$40,000	9/17/12	10/17/12
Design	$600,000	10/18/12	12/18/12
Construct	$6,985,000	12/19/12	2/28/13
TOTAL	**$7,625,000**		

PROJECT LOCATION



Project	930 Zone RW Pipeline Construction
Program	Recycled water
Type	Capital Upgrades at Major Facilities
Priority	High
Project No	EN13023
Agency Contact	Sylvie Lee
Agency Level of Service Goals	Provide capacity for conveyance and treatment of 100% of discharges Meet 100% of planned peak hourly demands for recycled water



PROJECT DESCRIPTION

This project will construct 13,500 feet of a pipeline that is 30 inches in diameter. This would connect the 930 Zone Recycled Water Reservoir and the Carbon Canyon Wastewater Recycling Facility (CCWRF) Recycled Water Pump Station. The pipeline will provide direct recycled connections to serve customers in the cities of Chino and Chino Hills.

KEY PROJECT BENEFITS

- Manage recycled water demands more effectively during peak summer demands
- Provide storage, and increase pump stations' capacities
- Supply demands from Southern Service Area instead of pumping from the Northern Service Area

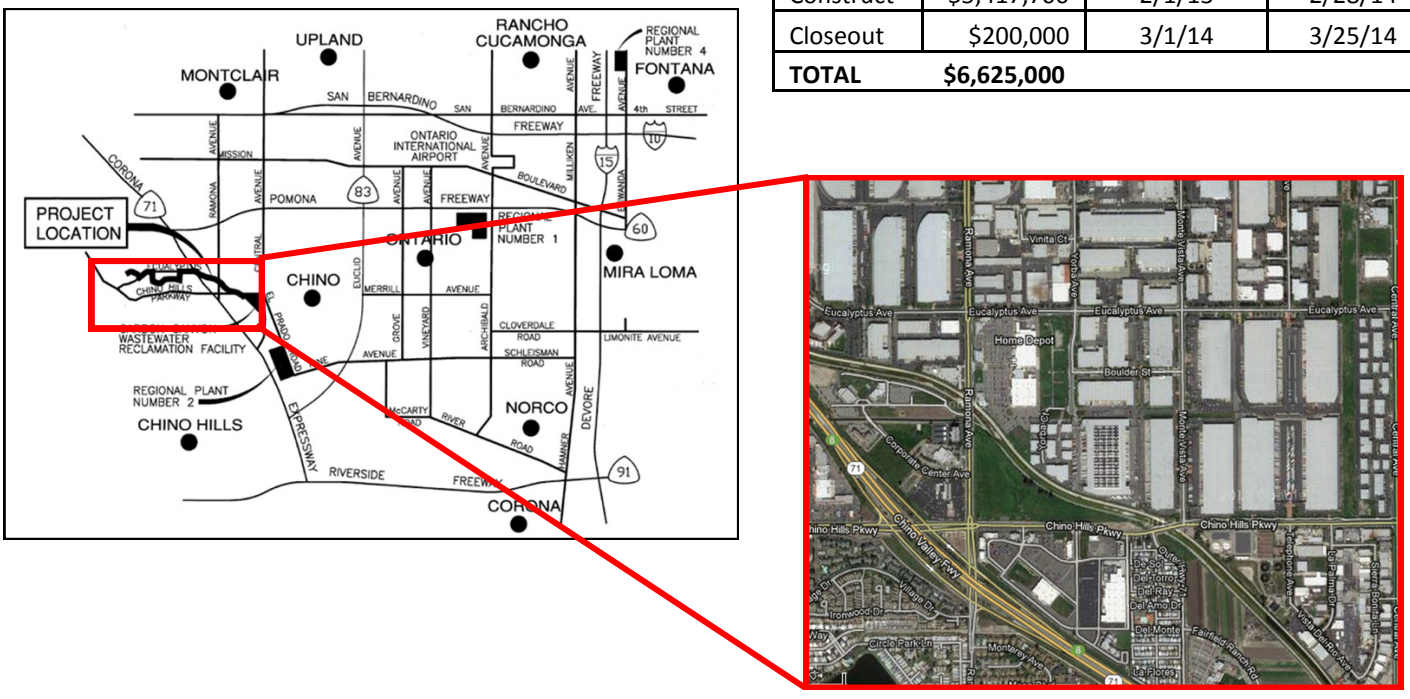
FUNDING SOURCES

Name/Agency	Amount
SRF Loan (Recycled Water Capital)	$6,625,000
TOTAL	**$6,625,000**

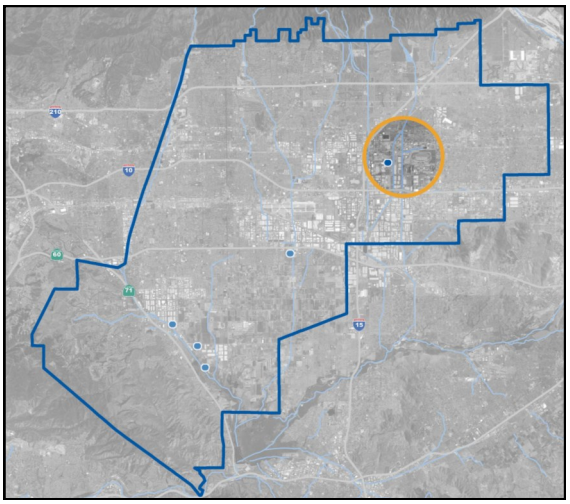
PROJECT SCHEDULE

Phase	Cost	Start Date	End Date
Plan	$307,300	11/01/12	11/30/12
Design	$700,000	11/31/12	1/31/13
Construct	$5,417,700	2/1/13	2/28/14
Closeout	$200,000	3/1/14	3/25/14
TOTAL	**$6,625,000**		

PROJECT LOCATION



Project	Vulcan Basin Development
Program	Recycled water
Type	Capital Upgrades at Major Facilities
Priority	Medium
Project No	EN14028
Agency Contact	Sylvie Lee
Agency Level of Service Goals	Maximize the beneficial use of recycled water supply produced by the Agency



PROJECT DESCRIPTION

This project includes initial site investigation and evaluation to assess the viability of Vulcan Basin as a groundwater recharge site. The project will then move into a design, recharge permitting, and construction phase. The potential for recycled water recharge is expected to be in the range of 500 to 1,500 acre-feet per year (AFY).

KEY PROJECT BENEFITS

- Maximize the recharge and beneficial reuse of the recycled water
- Potential benefit for the project is 3,000 AFY, which includes approximately 500 to 1500 AFY of recycled water
- Potential design/construction for the development of the basin

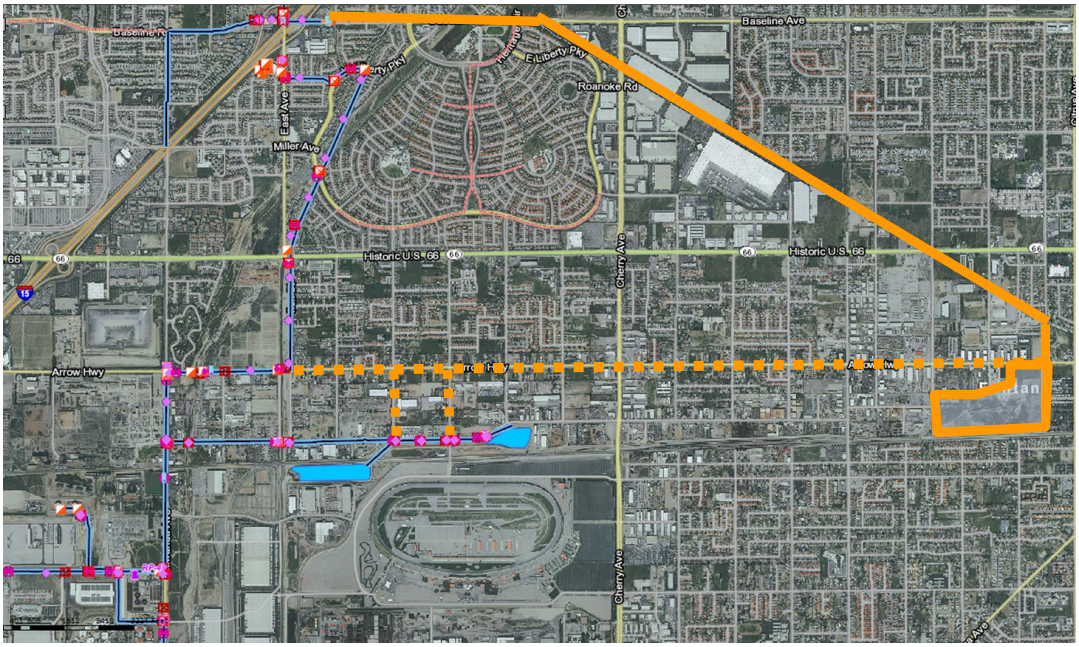
FUNDING SOURCES

Name/Agency	Amount
Wastewater Capital RC	$6,000,000
TOTAL	**$6,000,000**

PROJECT SCHEDULE

Phase	Cost	Start Date	End Date
Plan	$70,000	7/1/12	10/31/12
Design	$2,400,000	11/1/12	4/28/17
Construct	$3,500,000	11/1/13	6/30/17
Closeout	$30,000	7/1/17	12/30/17
TOTAL	**$6,000,000**		

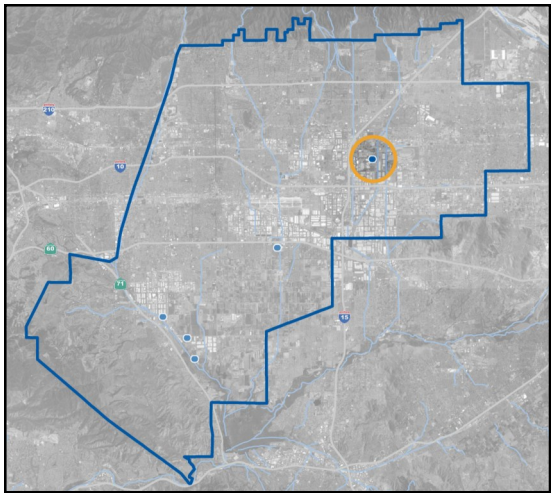
PROJECT LOCATION



Option 1—Storm Drain Construction of 3.2 miles, 0.6 miles of pipeline on Base-line

Option 2– RW Pipeline 3.8 miles

Project	RP-4 1158 & 1299 RWPS Upgrades
Program	Recycled Water
Type	Capital Upgrades at Major Facilities
Priority	High
Project No	EN14041
Agency Contact	Sylvie Lee
Agency Level of Service Goals	Maximize the beneficial use of recycled water supply produced by the Agency



PROJECT DESCRIPTION

RP-4 1158 & 1299 Pump stations needs to be evaluated to see if the pump station needs to be upsized in order to deliver additional recycled water for groundwater recharge in the 1158 and 1299 Pressure Zones. During the off-peak season or shoulder months, pump station and pipeline capacities at certain locations limit the supply of recycled water to the GWR basins. The electrical feed to the pump station will also be analyzed to ensure that it can accommodate the additional electrical loads needed to

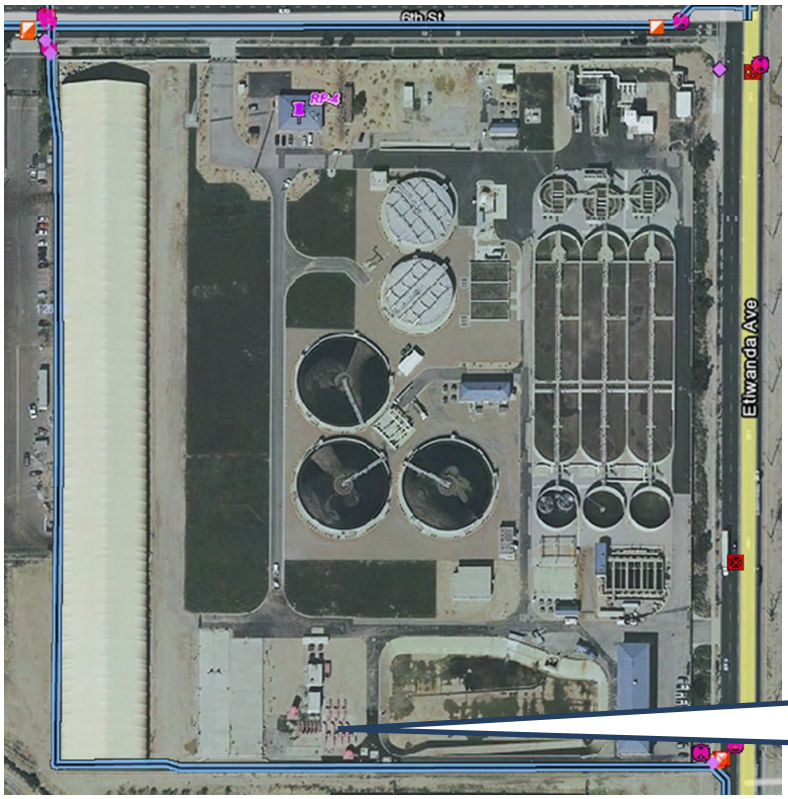
KEY PROJECT BENEFITS

- Maximize the recharge and beneficial reuse of the recycled water
- Upsize pump station capacities
- Upgrade the electrical feed, if necessary

FUNDING SOURCES

Name/Agency	Amount
SRF Loan (Recycled Water Capital)	$4,000,000
TOTAL	**$4,000,000**

PROJECT LOCATION



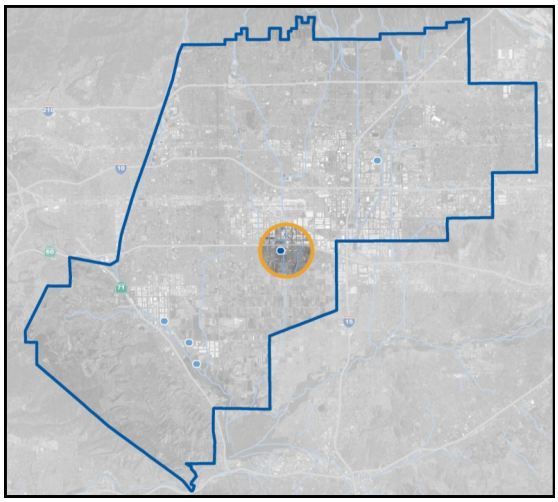
RP-4 1158 and 1299

Recycled Water

PROJECT SCHEDULE

Phase	Cost	Start Date	End Date
Plan	$100,000	07/01/2013	06/30/2014
Design	$600,000	07/01/2014	04/30/2016
Construct	$3,200,000	07/01/2016	11/30/2017
Closeout	$100,000	12/01/2017	06/30/2018
TOTAL	**$4,000,000**		

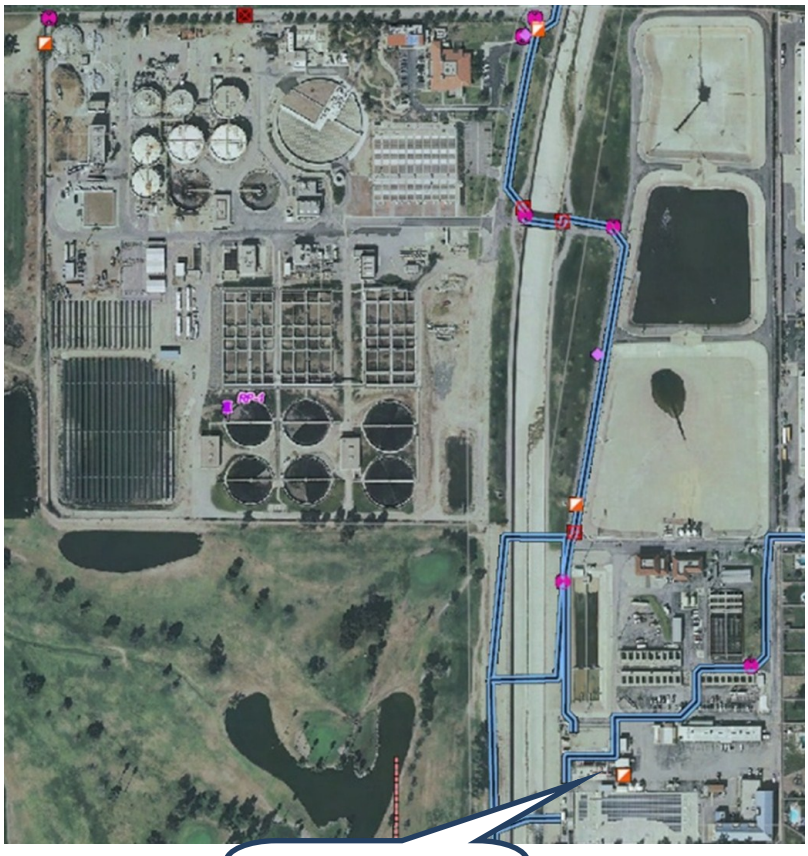
Project	RP-1 1158 RWPS Upgrades
Program	Recycled Water
Type	Capital Upgrades at Major Facilities
Priority	High
Project No	EN14042
Agency Contact	Sylvie Lee
Agency Level of Service Goals	Maximize the beneficial use of recycled water supply produced by the Agency



PROJECT DESCRIPTION

RP-1 has the greatest recycled water supply. Excess recycled water that is not needed to meet demands in the Southern Service Area needs to be moved to the 1158 Pressure Zones for groundwater recharge. At present, the capacity of the 1158 pump station is limited and cannot meet all the groundwater recharge needs in the 1299 Pressure Zone. The RP-1 1158 pump station needs to be upsized in order to deliver the additional recycled water that has been forecasted for groundwater recharge in the 1158 and 1299 pressure zones. This project will also analyze the electrical feed to the pump station to ensure that it can accommodate the additional electrical loads needed to accommodate the increased pumping.

PROJECT LOCATION



KEY PROJECT BENEFITS

- Maximize the recharge and beneficial reuse of the recycled water
- Upsize pump station capacities in order to remove pumping capacity limitations for recharge
- Enables additional RW supply to be provided to the upper zones for groundwater recharge

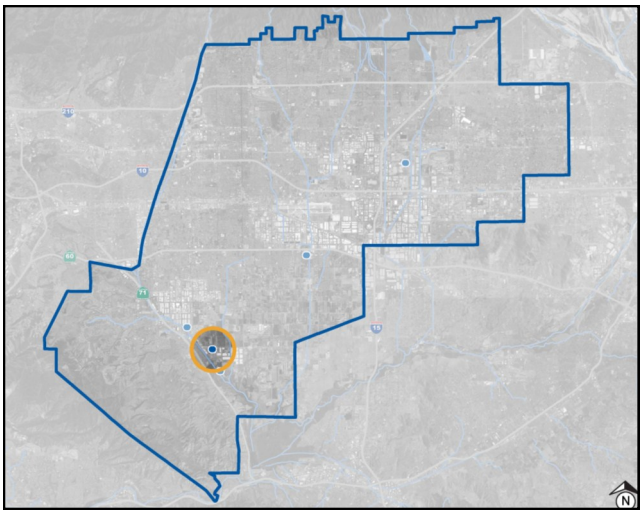
FUNDING SOURCES

Name/Agency	Amount
SRF Loan (Recycled Water Capital)	$4,000,000
TOTAL	**$4,000,000**

PROJECT SCHEDULE

Phase	Cost	Start Date	End Date
Plan	$100,000	07/01/2013	06/30/2014
Design	$600,000	07/01/2014	04/30/2016
Construct	$3,200,000	07/01/2016	11/30/2017
Closeout	$100,000	12/01/2017	06/30/2018
TOTAL	**$4,000,000**		

Project	RP-5 RW Pipeline Bottleneck
Program	Recycled water
Type	Capital Upgrades at Major Facilities
Priority	High
Project No	EN14043
Agency Contact	Sylvie Lee
Agency Level of Service Goals	Minimize recycled water pressure losses Maximize the beneficial use of recycled water supply produced by the Agency



PROJECT DESCRIPTION

The purpose of this project is to identify recycled water bottlenecks within RP-5. Bottleneck limitations will be upsized to enable the Agency to fully utilize the RP-5 recycled water pump station, and allow future expansion to match growth demands in the Agency's southern service area.

KEY PROJECT BENEFITS

- Maximize the beneficial reuse of the recycled water
- Upsize the limitations to eliminate bottlenecks within RP-5
- Allow future expansion to match recycled water demands

FUNDING SOURCES

Name/Agency	Amount
SRF Loan (Recycled Water Capital)	$1,300,000
TOTAL	**$1,300,000**

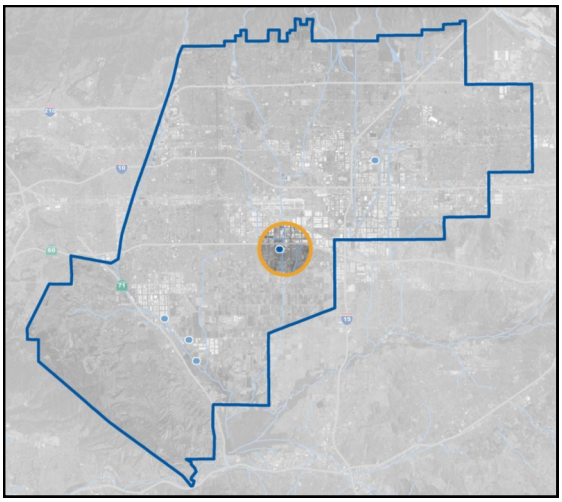
PROJECT LOCATION



PROJECT SCHEDULE

Phase	Cost	Start Date	End Date
Plan	$50,000	07/01/2013	06/30/2014
Design	$200,000	07/01/2014	04/30/2016
Construct	$1,000,000	07/01/2016	11/30/2017
Closeout	$50,000	12/01/2017	06/30/2018
TOTAL	**$1,300,000**		

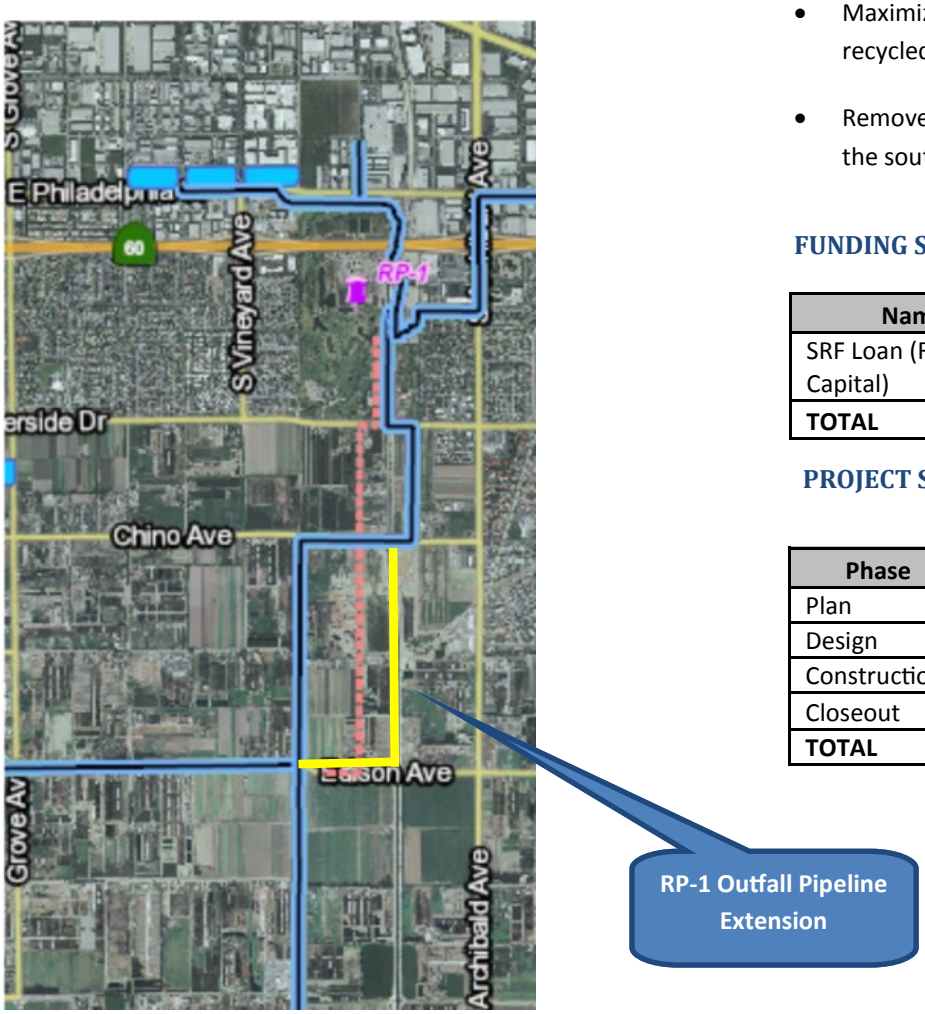
Project	RP-1 Outfall Pipeline Extension
Program	Recycled water
Type	Capital Upgrades at Major Facilities
Priority	High
Project No	EN19003
Agency Contact	Sylvie Lee
Agency Level of Service Goals	Maximize the beneficial use of recycled water supply produced by the Agency



PROJECT DESCRIPTION

The current RP-1 Recycled Water Outfall Pipeline is 30 inches in diameter, and has hydraulic limitations for the current recycled water demands in the Southern Service Area. With the projected growth and demands in the Southern Service Area, the outfall pipeline needs to have a parallel pipeline constructed. This project will construct the parallel pipeline between Chino Avenue and Edison Avenue.

PROJECT LOCATION



KEY PROJECT BENEFITS

- Maximize the recharge and beneficial reuse of the recycled water
- Remove hydraulic limitations in the pipelines serving the southern service area

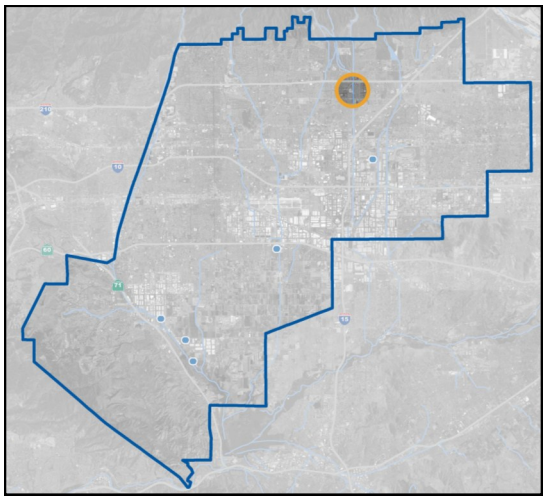
FUNDING SOURCES

Name/Agency	Amount
SRF Loan (Recycled Water Capital)	$5,700,000
TOTAL	**$5,700,000**

PROJECT SCHEDULE

Phase	Cost	Start Date	End Date
Plan	$100,000	07/01/19	10/31/19
Design	$500,000	11/01/19	06/30/20
Construction	$5,000,000	07/01/20	12/31/21
Closeout	$100,000	01/01/22	06/30/22
TOTAL	**$5,700,000**		

Project	Lower Day Basin Pipeline
Program	Recycled water
Type	Capital Upgrades at Major Facilities
Priority	Medium
Project No	EN20001
Agency Contact	Sylvie Lee
Agency Level of Service Goals	Maximize the beneficial use of recycled water supply produced by the Agency Maximize the recharge and beneficial reuse of the recycled water



PROJECT DESCRIPTION

Lower Day Basin has the potential to recharge over 2,300 acre-feet per year (AFY), and is currently permitted for recycled recharge. By constructing the 1630 Segment B Pipeline and Reservoir, Lower Day Basin can be served with recycled water for recharge.

KEY PROJECT BENEFITS

- Enable the Agency to capture an additional 2,300 AFY of recycled water in the Chino Basin via groundwater recharge

PROJECT LOCATION



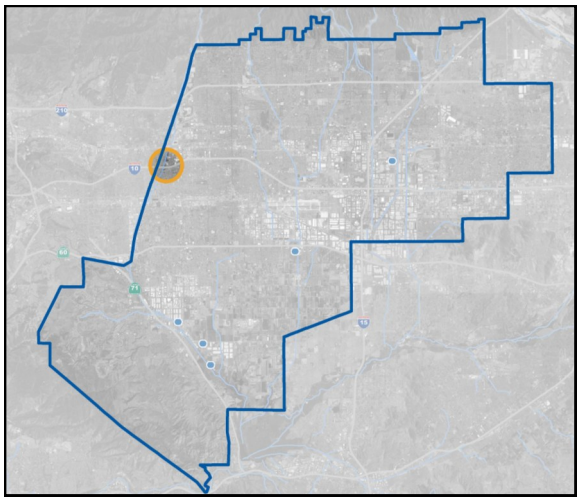
FUNDING SOURCES

Name/Agency	Amount
SRF Loan (Recycled Water Capital)	$2,525,000
TOTAL	**$2,525,000**

PROJECT SCHEDULE

Phase	Cost	Start Date	End Date
Plan	$100,000	07/01/2019	06/30/2020
Design	$350,000	07/01/2020	04/30/2021
Construct	$2,000,000	07/01/2021	11/30/2022
Closeout	$75,000	12/01/2022	06/30/2023
TOTAL	**$2,525,000**		

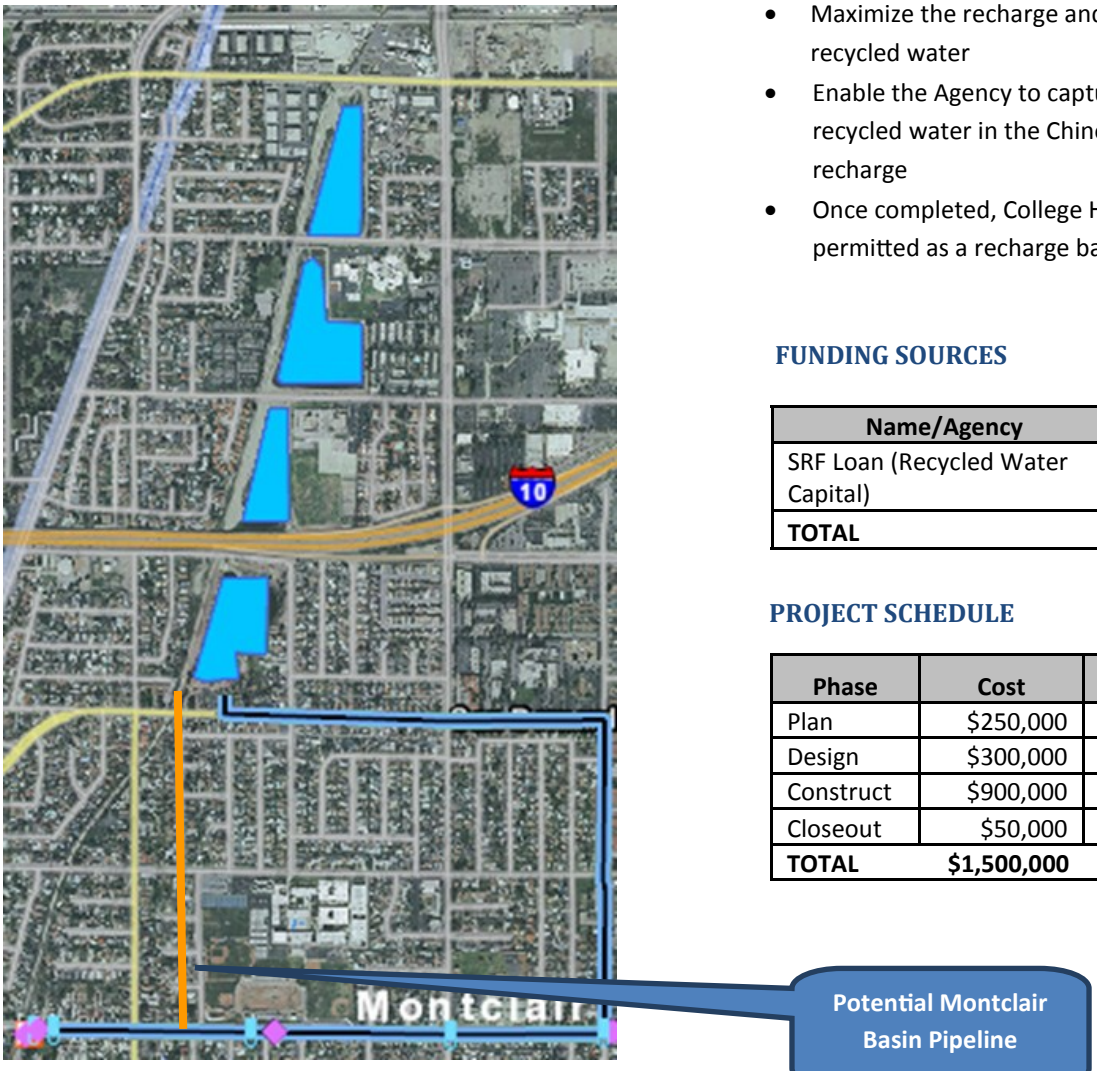
Project	Montclair Basin Pipeline
Program	Recycled water
Type	Capital Upgrades at Major Facilities
Priority	High
Project No	EN20003
Agency Contact	Sylvie Lee
Agency Level of Service Goals	Maximize the beneficial use of recycled water supply produced by the Agency



PROJECT DESCRIPTION

The Montclair Basin, although not currently permitted for recycled water groundwater recharge, has a high infiltration capacity. To maximize the beneficial use of recycled water, the Montclair Basin could be serviced from either the 1630-feet elevation pressure zone extended from the 1630 West Pipeline, or via 1299 Pipeline with an added pump station. This would potentially infiltrate an additional 3,400 acre feet of water per year (AFY).

PROJECT LOCATION



KEY PROJECT BENEFITS

- Maximize the recharge and beneficial reuse of the recycled water
- Enable the Agency to capture an additional 3,400 AFY of recycled water in the Chino Basin via groundwater recharge
- Once completed, College Heights can be potentially permitted as a recharge basin

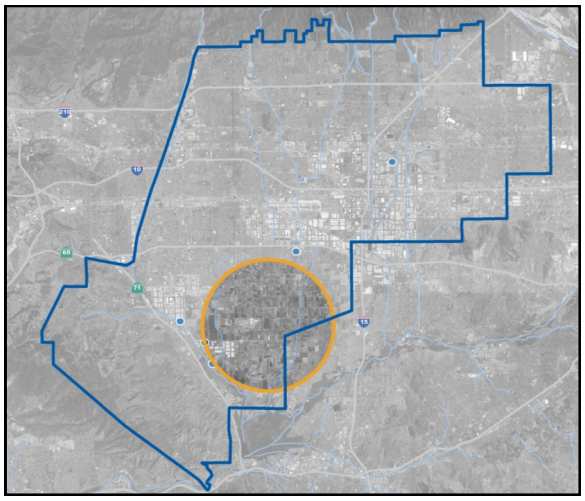
FUNDING SOURCES

Name/Agency	Amount
SRF Loan (Recycled Water Capital)	$1,500,000
TOTAL	**$1,500,000**

PROJECT SCHEDULE

Phase	Cost	Start Date	End Date
Plan	$250,000	07/01/19	12/31/19
Design	$300,000	01/01/20	06/30/20
Construct	$900,000	07/01/20	12/31/21
Closeout	$50,000	01/01/22	06/30/22
TOTAL	**$1,500,000**		

Project	800 PZ Pipeline Bottleneck
Program	Recycled water
Type	Capital Upgrades at Major Facilities
Priority	High
Project No	EN20005
Agency Contact	Sylvie Lee
Agency Level of Service Goals	Minimize recycled water pressure losses Maximize the beneficial use of recycled water supply produced by the Agency



PROJECT DESCRIPTION

The purpose of this project is to alleviate recycled water pipeline flow and pressure problems in the Southern Service Area. The main cause of the pressure problems is some of the regional pipeline is 18 inches in diameter, creating a bottleneck in the area. This needs to be corrected so that hydraulic limitations are addressed, and to ensure that recycled water service is reliable in the future.

KEY PROJECT BENEFITS

- Maximize the recharge and beneficial reuse of the recycled water
- Allow to continue reliable flow and pressures in the southern service area.
- Relieve the bottleneck in the area so that recycled water delivery can be made more reliably

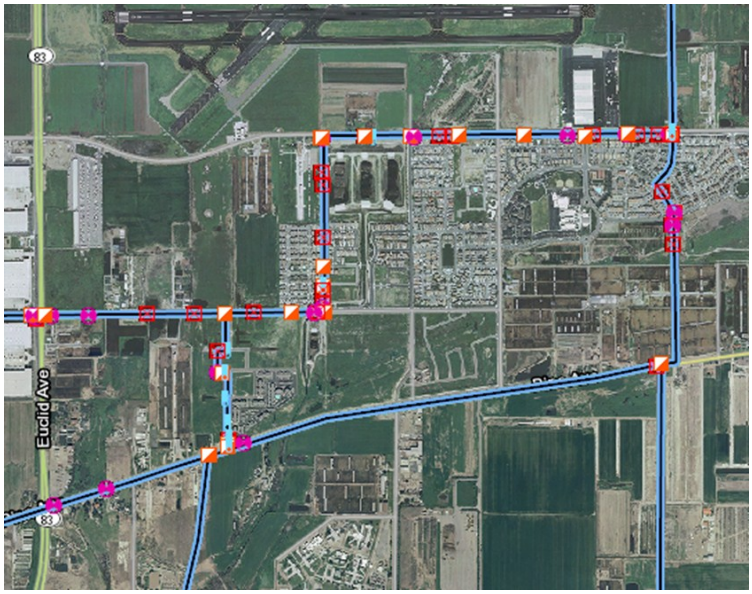
FUNDING SOURCES

Name/Agency	Amount
SRF Loan (Recycled Water Capital)	$1,300,000
TOTAL	**$1,300,000**

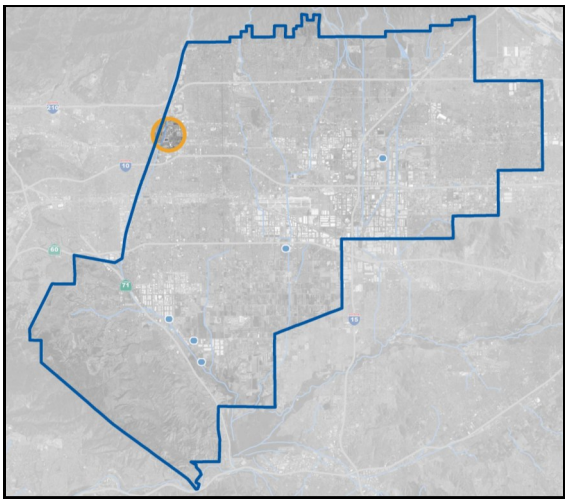
PROJECT SCHEDULE

Phase	Cost	Start Date	End Date
Plan	$50,000	07/01/19	09/30/19
Design	$300,000	10/01/19	03/31/20
Construct	$900,000	04/01/20	02/28/21
Closeout	$50,000	03/01/21	06/30/21
TOTAL	**$1,300,000**		

PROJECT LOCATION



Project	Upland Basin Pipeline
Program	Recycled water
Type	Capital Upgrades at Major Facilities
Priority	Medium
Project No	EN21001
Agency Contact	Sylvie Lee
Agency Level of Service Goals	Maximize the beneficial use of recycled water supply produced by the Agency



PROJECT DESCRIPTION

Upland Basin has a high infiltration capacity, however it is not currently permitted or utilized for groundwater recharge. The purpose of this project is to extend the recycled water pipeline from College Heights to connect Upland Basin to the regional system so that it can be serviced by the 1630-feet elevation pressure zone extended from the 1630 West Pipeline. The potential benefit of the basin is over 500 acre feet per year (AFY) of recycled water recharge.

KEY PROJECT BENEFITS

- Maximize the recharge and beneficial reuse of the recycled water
- Enable the Agency to capture an additional 500 AFY of recycled water in the Chino Basin by groundwater recharge.

FUNDING SOURCES

Name/Agency	Amount
SRF Loan (Recycled Water Capital)	$3,000,000
TOTAL	**$3,000,000**

PROJECT SCHEDULE

Phase	Cost	Start Date	End Date
Plan	$100,000	07/01/20	10/31/20
Design	$500,000	11/01/20	06/31/21
Construct	$2,300,000	07/01/21	12/31/22
Closeout	$100,000	01/01/23	06/30/23
TOTAL	**$3,000,000**		

PROJECT LOCATION

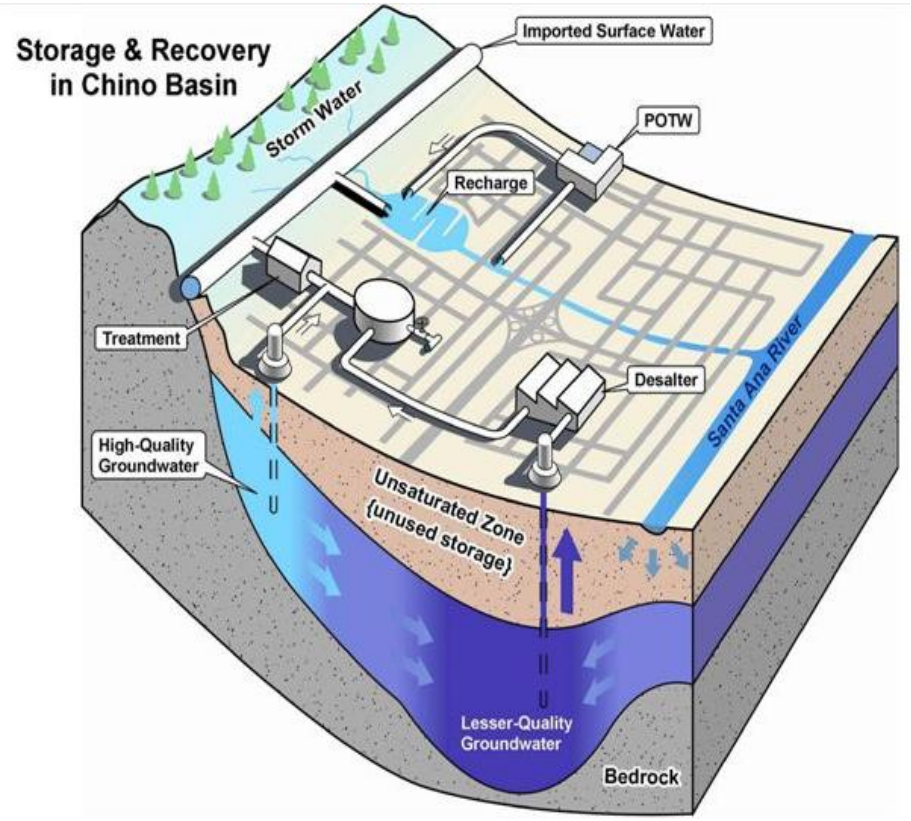


7.0 GROUNDWATER RECHARGE SYSTEM

7.1 Recharge Program Background

The Chino Basin Watermaster (CBWM) and the Agency joint recharge program partnership is described in the CBWM's Optimum Basin Management Program (OBMP) Recharge Master Plan, Phase II Report (August, 2001). It is a comprehensive plan to increase artificial groundwater recharge within Chino Basin using stormwater, recycled water, and imported water. The recharge program is one of the centerpieces of the Chino Basin OBMP. Through the development of increased recharge capacity in the Basin, greater quantities of high quality water can be captured and stored during wet years and be made available during drought years and times of imported water supply shortages. Figure 7-1 illustrates in general how the recharge program fits into the overall plan for Chino Basin groundwater management as outlined in the Watermaster's OBMP and the Recharge Master Plan.

FIGURE 7-1: GROUNDWATER RECHARGE PROGRAM ILLUSTRATION



In January of 2002, the Agency's Board of Directors approved the Recharge Master Plan Implementation Memorandum of Agreement, between CBWM, Chino Basin Water Conservation District, San Bernardino County Flood Control District (SBCFCD), and the Agency. Members of these four agencies formed a Groundwater Recharge Coordinating Committee to implement an initial $40-million program, entitled the Chino Basin Facilities Improvement Project (CBFIP), to develop recharge facilities from existing flood control basins. The Agency serves as the lead agency for implementation (design, construction, operation, and maintenance) of this cooperative program. The Recharge Master Plan included enhancements to existing flood control and recharge basins through the CBFIP (Phase I and Phase II).

The CBFIP will maximize recharge capacity, protect and increase the yield of the Chino Basin, increase the amount of recycled water that can be recharged, and improve groundwater quality. Construction and improvements have been made to 19 recharge sites with a total potential recharge capacity of approximately 110,000 AFY.

In the summer of 2005, Phase I CBFIP improvements were completed and recharge operations commenced in the upgraded facilities. Figure 7-2 is a map of the current CBFIP recharge sites. Operational experience in the ensuing 3 years identified lower infiltration rates, system limitations, and recharge capacity than envisioned during the original recharge master plan. Additional recharge capacity and operational flexibility were the goals of the Phase II CBFIP.

In April 2006, the Agency and CBWM approved the $10.5 million Phase II CBFIP improvements made possible by a Department of Water Resources grant and matching funding from the Agency and CBWM. The Phase II improvements were complete and operational in early 2009, and enhance stormwater capture, imported water delivery, and operational flexibility of the existing recharge facilities.

In October 2009, the Agency and CBWM received an amendment to the program's Recycled Water Groundwater Recharge permit that facilitates increasing the amount of recycled water that may be recharged. Specifically, it will increase the amount of recycled water recharge during dry years by allowing groundwater underflow to a recharge site to be used as a diluent water source when calculating the percentage of recycled water in the total recharge. The amendment also allows compliance with the limit on percent recycled water recharge to be calculated over 120 months rather than 60 months, enabling the recharge of recycled water during extended periods of low rainfall and stormwater recharge.

In July 2010, the original Recharge Master Plan was updated as part of CBWM's Peace II agreement. The updated plan evaluated potential methods of increasing groundwater recharge to the Chino Basin and categorized them based on relative cost per acre-foot of water. Since then, past infiltration rates have been used to update the potential recycled water recharge capacity. Based on updates completed in 2012, Table 7-1 describes the potential monthly recharge capacities of the recharge sites. Annual recharge varies, primarily due to weather patterns, availability of imported water, and availability of recycled water during peak demand periods in the summer by direct use customers. Annual recharge for stormwater can range from one to three months; for recycled water from four to ten months, and imported water based on availability of the water.

FIGURE 7-2: CHINO BASIN RECHARGE SITE LOCATIONS

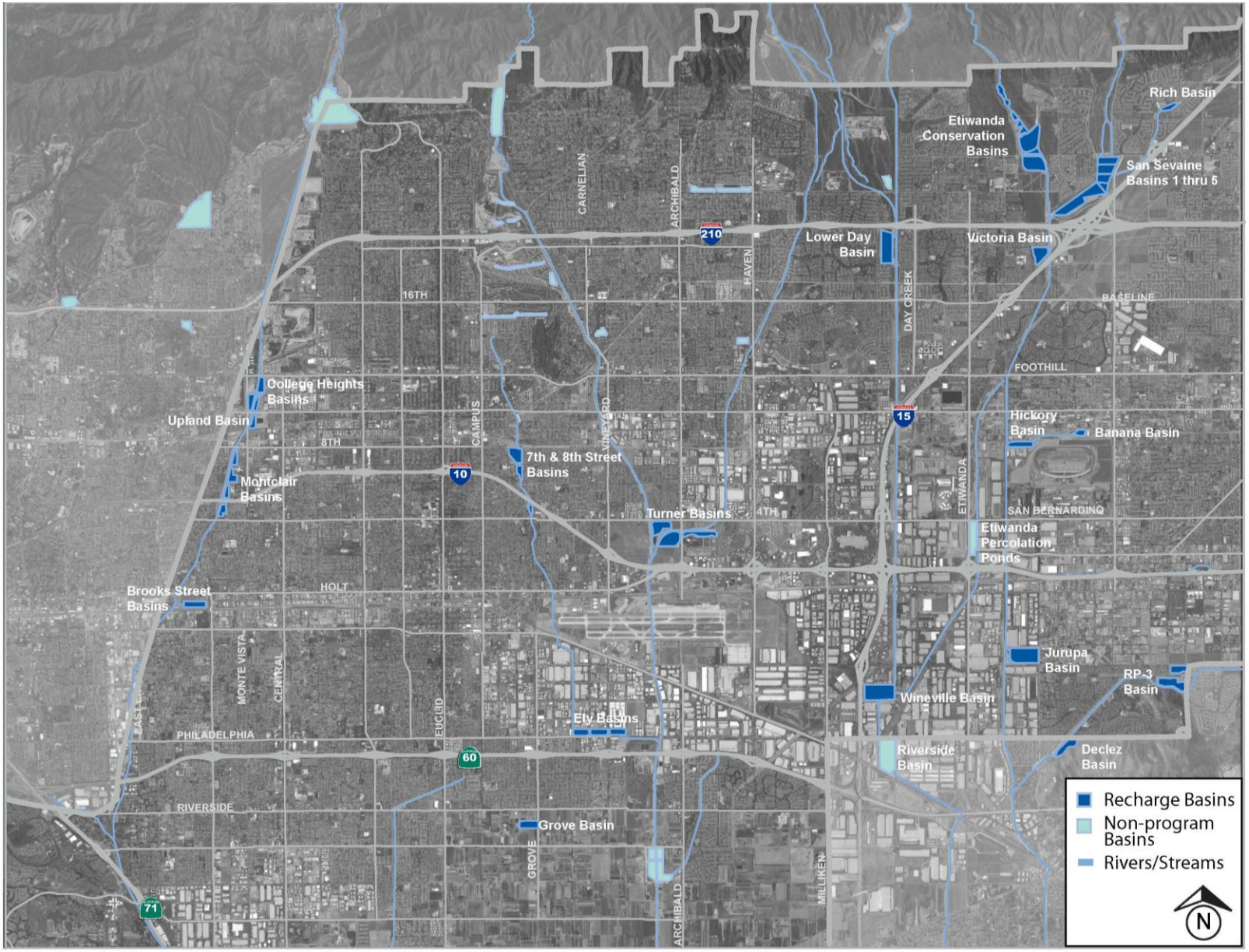


TABLE 7-1: RECHARGE INFILTRATION CAPACITIES

Recharge Site	Recharge Capacity Acre Feet per Month
Ely Basins	193
Banana Basin	117
Declez Basin 1	83
Declez Basin (2 & 3)	151
Etiwanda Conservation Ponds	**
Hickory Basin	136
Jurupa Basin	117
RP-3 Basins	1,047
Turner Basin (1-4)	443
7th & 8th Street Basins	395
Etiwanda Spreading Basins	263
Lower Day Basin	340
Brooks Street Basin	188
College Heights Basins	457
Montclair Basins (1-3)	511
Montclair Basin 4	48
Upland Basin	187
San Sevaine (1-3)	1,235
San Sevaine 5	310
Victoria Basin	212
Wineville Basin	**
Grove Basin	38
Total	**6,471**

*** Data Not Available*

7.2 Recycled Water Use for Recharge

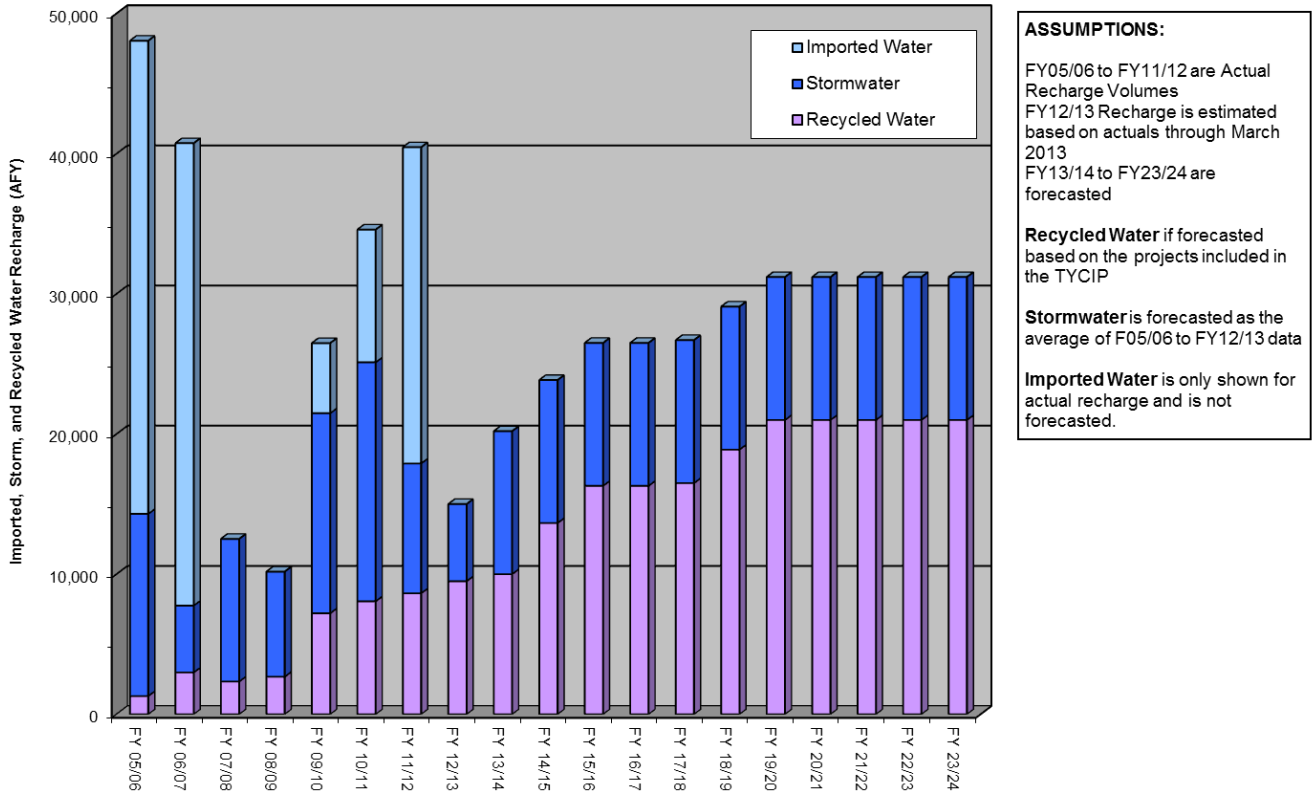
Reuse of recycled water for groundwater recharge is a critical component of the OBMP and water supply plans for the region. It will increase the reliability of water supplies during dry years and save $6 million to $9 million per year in imported water costs. The recharge of high-quality recycled water, high-quality imported water, and stormwater sources will allow Chino Basin groundwater quality objectives to be met. Improvements in groundwater quality through recharge will also ultimately lower the cost of the Chino Basin Desalter groundwater treatment process.

In April 2005, the Agency and CBWM obtained their Phase I Recycled Water Groundwater Recharge Permit which included six recharge sites and a 20 percent by basin recycled water recharge limit. In June 2007, the Agency and CBWM obtained their Phase II Recycled Water Groundwater Recharge

permit, which added seven more recharge sites and included changes allowing as much as 50 percent by basin recycled water recharge as driven by water quality performance. However, operational experiences since 2005 indicate a more likely average of 30 percent recycled water recharge.

In October 2009, the Agency and CBWM received an amendment to the recharge permit that increased flexibility of recycled water recharge operations, especially during a multi-year drought. The amendment allows groundwater underflow to be included as a diluent water source which can now be factored into the volume-based recycled water contribution (RWC) running average. The RWC average calculation period was also increased from 60 to 120 months which helps to maintain a more stable RWC average by allowing the other diluent water sources (stormwater and imported water) to remain in the RWC average for a longer period of time. The schedule for increasing water recharged is illustrated in Figure 7-3.

FIGURE 7-3: IMPORTED, STORM, AND RECYCLED WATER RECHARGE SCHEDULE



7.3 Permitting

Several regulatory and environmental permits and approvals are required. The Agency has made significant progress and has completed many of the regulatory requirements. The following are the regulatory requirements and the current status of each permit process:

- **CBWM Approval** – CBWM Article X approval for groundwater recharge is required under Watermaster's rules and regulations. The Agency obtained Watermaster's approval for the recharge of up to 33,000 AFY in 2002;

- **Basin Plan Amendment** – In order to recharge recycled water in the Chino Groundwater Basin, the Agency and Watermaster prepared a Maximum Benefit Concept Proposal to the Santa Ana Regional Water Quality Control Board (RWQCB) for the basin plan amendment. The proposal was approved by the RWQCB and incorporated into the basin plan amendment in February 2004. The State Water Resources Control Board approved the basin plan amendment in September 2004. The incorporation of "Maximum Benefit" into a basin plan is unprecedented in the state;

- **Department of Public Health (DPH) Title 22 Engineering Report for Groundwater Recharge** – Prior to recharge of recycled water, an engineering report is required. The report is reviewed by DPH and a public hearing is required to solicit comments. The Agency prepared and submitted a Title 22 Engineering report for the recharge basins served by the Phase I facilities in 2003 and another in 2006 for the Phase II facilities. Public hearings were held for both phases and many supportive letters and comments were received; the DHS public hearing held in April 2006 received strong support and no opposition;

- **RWQCB Permit for Recycled Water Recharge** - The Santa Ana Regional Water Quality Control Board approved the permit for recycled water recharge in April 2005. The RWQCB permit for recycled water recharge for the Phase II basins was issued in summer 2007; and

- **RWQCB 2009 Permit Amendment** – In 2009, the RWQCB permit was amended to allow diluent water to include groundwater underflow and to allow the recycled water contribution (RWC) average to be based on a 120 month running average (increase from the previously approved 60 month running average). These modifications allow significant operational flexibility specifically during a multiyear drought when stormwater and imported water supplies are not available.

7.4 Current Ten-Year Capital Improvement Plan

The capital project costs identified in the current TYCIP for Recharge Capital Program mainly involve capacity improvements and refurbishment at selected basins (e.g., Turner Basins and San Sevaine Basins) and total approximately $13 million over ten years. Capital projects for Lower Day, Etiwanda Debris Basin, Etiwanda Conservation Basin, Montclair Basin, and Upland Basin are currently included in the TYCIP. The capital projects are included in the recycled water fund (WC) since they also include piping and turnouts that are not specifically included in the cost share agreement with CBWM. Additional future capital improvements to the recharge program (Phase III CBFIP) may be identified following stakeholder evaluation of the recommendations of the recycled water recharge forecast update of 2012 and of Chino Basin Recharge Master Plan, 2010 Update. The determination of what is needed and when to implement any capital changes will be the subject of a future review and collaborative effort of the Agency and the CBWM. The financial impact of any

significant capital requirements for the groundwater recharge basins will be addressed in revisions and updates to this TYCIP.

Capital projects that will specifically increase the recycled water groundwater recharge that are greater than $1 million are provided below in Table 7-2. Additional project details for key projects are provided in the project forms at the end of this chapter. Projects that are currently identified in the TYCIP for the next ten years focus on adding additional GWR basins that have a high expectation of infiltration performance. Some of these basins will require new permitting through the DPH for groundwater recharge.

TABLE 7-2: MAJOR GROUNDWATER RECHARGE CAPITAL PROJECTS ($M)

Project Number	Project Title	FY 13/14	FY 14/15	FY 15/16	FY 17/18-22/23	Total FY 2013/14-2022/23
EN06025	Wineville RW Pipeline – Segment A	$8 M	$5.4 M	-	-	$14 M
EN13045	Wineville RW Pipeline – Segment B	$7 M	$5 M	-	-	$12 M
EN12019	GWR & SCADA Upgrades	$.8 M	$1.6 M	-	-	$2.4 M
EN13001	San Sevaine Basin Improvements	$1.7 M	$0.8 M	-	-	$2.5 M
WR11017	Turner Basin/Guasti Park Multi Use Project	$1.1M	-	-	-	$1.1M
EN13029	Turner 1 Turnout & Deer Creek Channel	$0.8 M	-	-	-	$0.8 M
EN14041	RP-4 1158 &1299 RWPS Expansion	$0.1M	$0.5M	$2.5M	$0.9M	$4.0M
EN14042	RP-4 1158 RWPS Upgrades	$0.2M	$0.5M	$3.0M	$0.3M	$4.0M
EN14043	RP-5 Pipeline Bottleneck	$0.2M	$0.5M	$0.3M	$0.3M	$1.3M
EN20001	Lower Day Basin Pipeline	-	-	-	$2.5 M	$2.5 M
EN20003	Montclair Basin Pipeline	-	-	-	$1.5 M	$1.5 M
EN21001	Upland Basin Pipeline	-	-	-	$3 M	$3 M
	All WC/RW Projects	**$43.8M**	**$17.8 M**	**$8.9M**	**$38.1 M**	**$108.6 M**

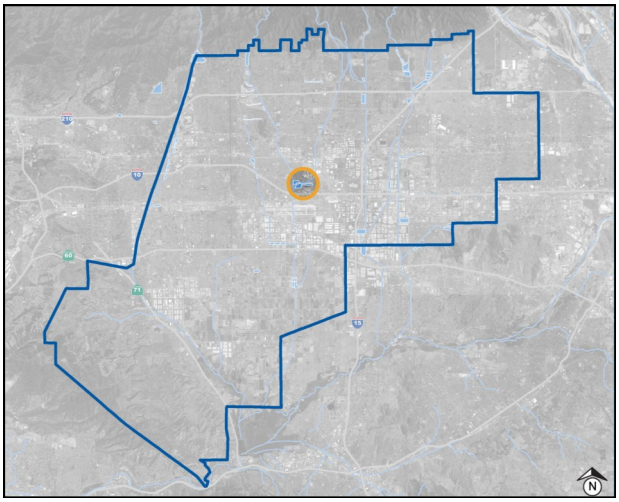
An updated Recycled Water Program Plan is currently under development that will be part of the Agency's FY 2013/14 Integrated Water Resources Plan. It will re-evaluate the role the recycled water program plays in the regional water management portfolio and a revised, robust financial model will be developed to meet the future goals of the region. Alternatives for the use of recycled water for direct use and recharge will be evaluated and priorities for future use may be established.

The master plan updates and collaboration efforts for the next TYCIP will be based on an analysis of costs and benefits to the region.

In the interim, Agency staff will evaluate the effectiveness of the constructed Phase II basin improvements towards increasing basin recharge capacity. Within this TYCIP, the Groundwater Recharge Basins are assumed to be sufficient to provide adequate stormwater, recycled water, and imported water recharge capacity for the foreseeable future.

With the change in focus of increasing groundwater recharge to better manage the water portfolio for the region, the operation and maintenance of the basins may need to be modified. The biggest impact for the money that has already been invested in the recharge program is to increase the basin maintenance frequency, which will increase the basin performance. These are low cost projects that can potentially increase infiltration by 20 percent per basin. These types of projects and other investigative projects will be explored and funded in the future years as a means to diversify the water supply for the region and maximize the beneficial reuse of the recycled water.

Project	Turner Basin Recharge Improvements
Program	Groundwater Recharge
Type	Facility Expansion and Improvement
Priority	High
Project No	WR11017
Agency Contact	Sylvie Lee
Agency Level of Service Goals	Maximize the beneficial use of recycled water supply produced by the Agency



PROJECT DESCRIPTION

The project involves the installation of new pipelines and a gate within the two new recharge basins currently being excavated east of Turner Basin 4. This project will also create a connection to Basin 5, an existing flood control retention facility, so that it can be utilized as a new recharge basin. Construction will include running new stormwater piping upstream of the Deer Creek Channel to Basin 8, which will convey flow into Basin 5. This project is partially funded by the Bureau of Reclamation (USBR) with grant of $406,712. The remaining cost of the project is shared between IEUA and Chino Basin Watermaster (CBWM).

KEY PROJECT BENEFITS

- Maximize recycled water recharge
- Improve recharge basin operation

FUNDING SOURCES

Name/Agency	Amount
Recycled Water Capital	$718,288
U.S.B.R.	$406,712
TOTAL	**$1,125,000**

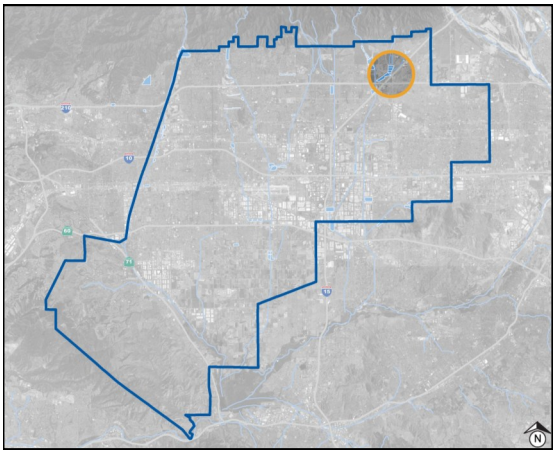
PROJECT LOCATION



PROJECT SCHEDULE

Phase	Cost	Start Date	End Date
Plan	$10,000	11/15/11	2/29/12
Design	$385,000	3/1/12	2/20/13
Construct	$725,000	2/20/13	11/30/13
Closeout	$5,000	12/1/13	1/15/14
TOTAL	**$1,125,000**		

Project	San Sevaine Basin Improvements
Program	Groundwater Recharge
Type	Facility Expansion and Improvement
Priority	High
Project No	EN13001
Agency Contact	Sylvie Lee
Agency Level of Service Goals	Maximize the Beneficial Use of Recycled Water Supply Produced by the Agency



PROJECT DESCRIPTION

The project will implement cost-effective improvements to increase the infiltration of recycled water and stormwater in the San Sevaine Basins. The project will include the design and construction of approximately 5,000 linear feet of pipeline and a new pump station capable of pumping either stormwater and/or recycled water to the upper basins, which have high infiltration rates. Geophysical investigations will also be conducted at Basin 5 to determine if poor infiltration rates can be improved.

KEY PROJECT BENEFITS

- Increase infiltration of 4,500 acre-feet per year (AFY) of Recycled Water Recharge
- Provide an additional 350 AFY of Storm Water capture and storage
- Provide 25.5 acres of open water and shoreline habitat preservation and restoration
- Increase infiltration of imported water recharge to meet desalter replenishment obligations and water banking for dry years
- Improve the aquifer's water quality by removing an estimated 126 tons of salt over ten years by infiltrating lower TDS concentrated water sources
- Reduce greenhouse gases (GHGs) as CO2 equivalents by an estimated 4,766 metric tons/yr due to reduced pumping demands into the Region from the State Water Project.

PROJECT LOCATION



FUNDING SOURCES

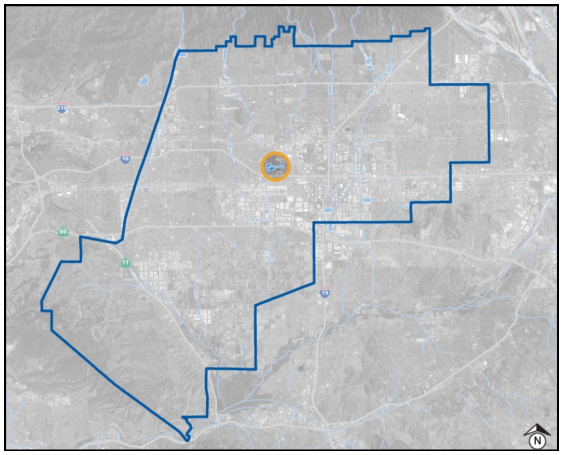
Name/Agency	Amount
Regional Waste Water Operations & Management CC Projects	$ 1,002,314
Integrated Regional Water Management (IRWM) Prop 84 Grant Program	$ 1,500,000
TOTAL	**$2,502,314**

PROJECT SCHEDULE

The project is currently in the Planning phase and should be completed by February 2015.

Phase	Cost	Start Date	End Date
Plan	$ 130,000	10/01/2012	05/01/2013
Design	$ 250,000	03/1/2013	09/01/2013
Construct	$ 2,102,314	11/1/2013	12/30/2014
Closeout	$ 20,000	12/30/2014	02/01/2015
TOTAL	**$ 2,502,314**		

Project	Turner 1 Turnout & Deer Creek Drop-Inlet Mods
Program	Groundwater Recharge
Type	Facility Expansion and Improvement
Priority	High
Project No	EN13029
Agency Contact	Sylvie Lee
Agency Level of Service Goals	Maximize the beneficial use of recycled water supply produced by the Agency



PROJECT DESCRIPTION

This project will provide a new recycled water turnout for the Turner Basins. The turnout will be approximately 200 linear feet of 16 inch steel pipe and supply 10 cubic feet per second of water to the basins. An automated control valve and flow meter will also be provided. In order to equally supply all four of the recharge basins at the site, a bypass will also be constructed underneath the Deer Creek Channel. A majority of the design was prepared by IEUA in-house engineers with the exception of the structural and electrical disciplines which were provided by IEUA's on-call consultants.

PROJECT LOCATION



KEY PROJECT BENEFITS

- Maximize recycled water recharge
- Improve recharge basin operation

FUNDING SOURCES

Name/Agency	Amount
Recycled Water Capital	$ 825,000
TOTAL	**$ 825,000**

PROJECT SCHEDULE

The project is currently in the Design phase and should be completed by January 2014.

Phase	Cost	Start Date	End Date
Plan	$ 10,000	11/15/2011	2/29/2012
Design	$ 346,000	3/1/2012	2/20/2013
Construct	$ 464,000	2/20/2013	11/30/2013
Closeout	$ 5,000	12/1/2013	1/15/2014
TOTAL	**$ 825,000**		

8.0 NON-RECLAIMABLE WASTEWATER SYSTEM

This chapter discusses ongoing and future projects for the Non-Reclaimable Wastewater System (NRWS) in accordance with the asset management program. The Agency's 2002 Salinity Management Action Plan, which calls for maximizing the use of the NRWS and developing a program to reduce the salt impacts from water softeners to the Agency's water recycling facilities, is reflected in these capital projects.

8.1 Background

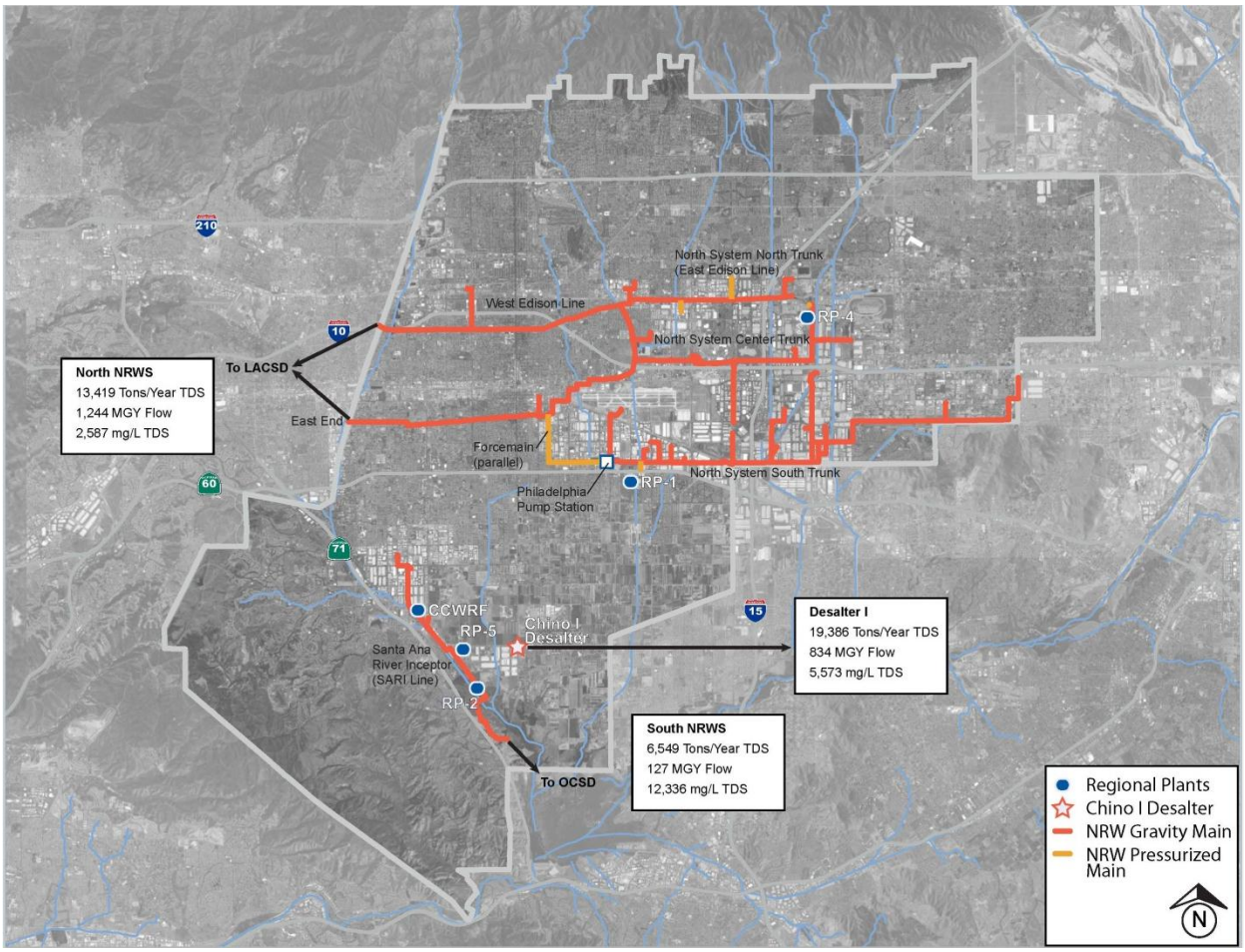
The Agency operates the NRWS pipelines and pump stations which export high-salinity industrial wastewater generated within the Agency's service area to the Pacific Ocean. The wastewater discharged to the NRWS consists mainly of industrial and groundwater treatment brines. The Agency also discharges belt press filtrate resulting from the dewatering of the biosolids generated within the Agency's water recycling treatment facilities and some domestic waste from non-sewered areas. The NRWS is physically separated from the Regional Wastewater System and provides a means for segregating poor-quality saline wastewater and exporting it out of the Agency's service area.

By maximizing the use of the NRWS, the quality of the recycled water is improved for local use and helps ensure that the Agency can comply with the final effluent total dissolved solids (TDS) and total nitrogen limits listed in the National Pollutant Discharge Elimination System (NPDES) permits.

For FY 2011/12, the NRWS exported approximately 36,674 tons of salt to the ocean, as summarized below and illustrated in Figure 8-1 and Table 8-1.

The NRWS collection system includes 75 miles of pipeline and is comprised of a north and a south system. The north system, which serves approximately 47 industries, conveys wastewater to adjacent interceptor sewer lines owned and operated by the County Sanitation Districts of Los Angeles County (CSDLAC). From there, it is conveyed to CSDLAC's treatment facility in Carson, where it is treated and discharged to the ocean. The south system, which serves approximately 11 industries, conveys wastewater to the Inland Empire Brine Line (Brine Line), owned by the Santa Ana Watershed Project Authority (SAWPA), and from there it is carried to the Orange County Sanitation Districts (OCSD) facility in Fountain Valley for treatment and ocean discharge.

FIGURE 8-1: SALT EXPORT FROM CHINO BASIN
60 MILE NON-RECLAIMABLE WASTEWATER SYSTEM (NRWS)



The NRWS removes a total of 36,675 Tons of TDS each year from the Agency's service area.

TABLE 8-1: TONS OF SALT REMOVED

FY 2011/12	Million Gallons/Year	TDS (mg/L)	Tons/Year
North NRW System	1,180	2,808	13,817
South NRW System	131	11,246	6,124
Desalter 1, (14 MGD)	704	5,700	16,733
Total	**2,015**	**4,366** (Flow-Weighted)	**36,674**

Export of saline and industrial wastewater from the local area in this manner protects the quality of the Agency's recycled water and is a key element of the CBWM's Optimum Basin Management Plan (OBMP). Diverting saline wastewater to the NRWS instead of collecting it in the regional wastewater system has reduced the TDS levels in the recycled water by approximately 250 mg/l. It is estimated that by diverting most of the existing industrial users discharging to the regional sewer with TDS concentrations above 550 mg/l to the NRWS, it could lower the TDS level of the recycled water by another eight to eleven mg/l. In addition, reducing salts from residential water softeners could further reduce the TDS level. Most important, brine from the groundwater desalter facilities should also be diverted to the NRWS in order to avoid raising the TDS level of the recycled water.

8.2 NRWS and Salinity Management Action Plan

The Agency developed a Salinity Management Action Plan in 2002 in cooperation with the Regional Technical and Policy Committees. This was done to protect and enhance the ability of the region to use recycled water for groundwater recharge, outdoor irrigation, and industrial process water. Use of recycled water is critical to the reliability of future water supplies for the region. Some of the strategies that were identified to reduce the salinity of recycled water supplies included:

- Maximizing the use of the NRWS
- Developing a program to reduce the salt impacts from water softeners
- Reducing salinity contributions from the Agency's water recycling facilities
- Construction of regional groundwater desalters

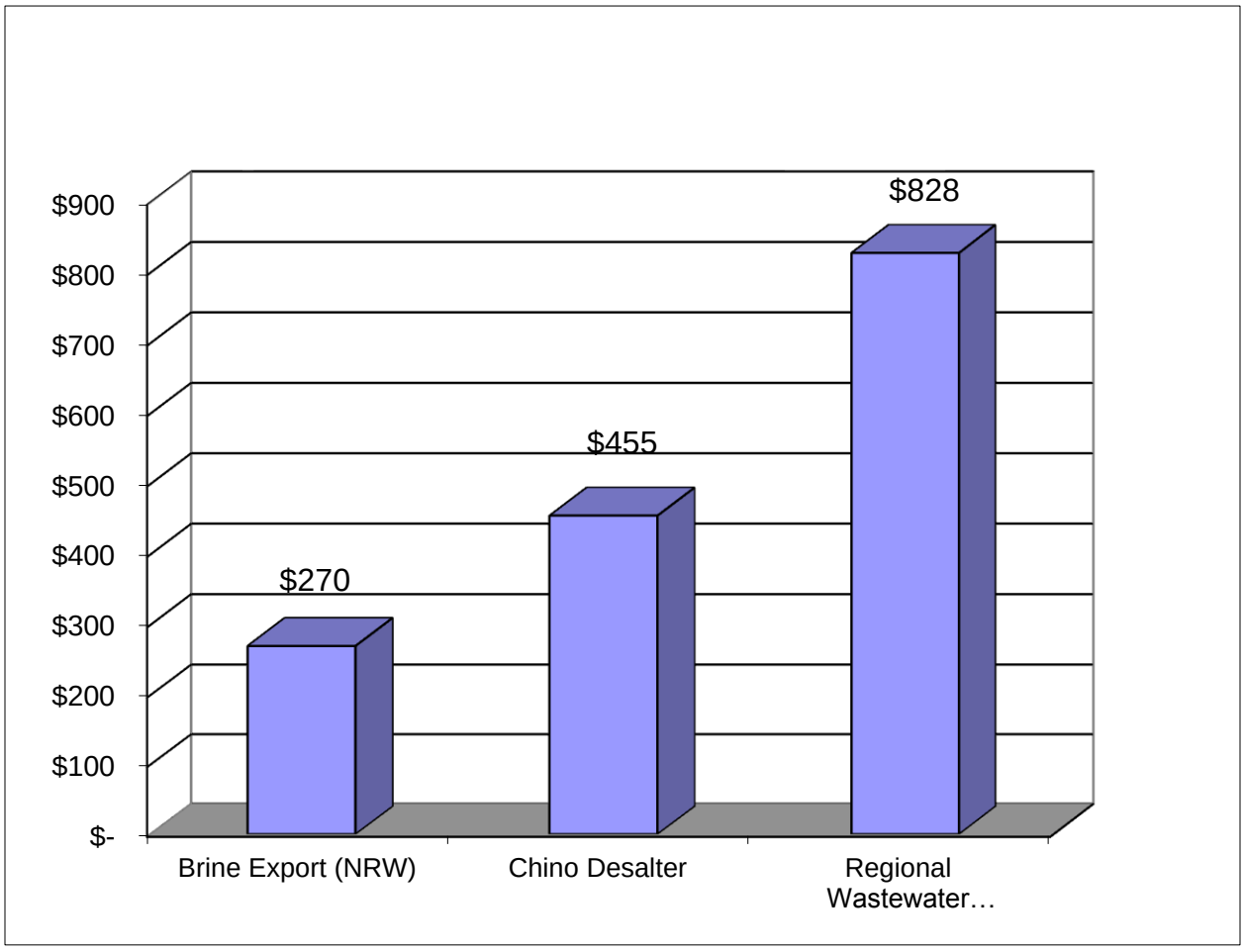
These actions were incorporated into the Basin Plan Amendment adopted by the Santa Ana Regional Water Quality Control Board in 2004, which included the salt and nutrient management plan for the Chino Basin. Regional implementation of these actions over the past decade has resulted in the annual export of over 40,000 tons per year of salt from the region.

A study by Parsons Engineering Science (2000) evaluated the long-term issues and future funding needs for operating and maintaining the NRWS in the most cost-effective manner. Parsons suggested that the most cost-effective strategies for maximizing the use of the NRW system were: (1) diverting more high-salinity wastewater flow from the Regional System to the NRWS, thereby reducing the need for expansion of the Regional system; and (2) melding the NRW user rates and charges with the Regional system, "Regionalization". The study confirmed that utilization of the NRWS minimizes the Agency's treatment costs for salt, as illustrated in Figure 8-2.

In 2003, the Agency in partnership with the Regional Technical and Policy Committees, the CBWM and the Santa Ana Regional Water Quality Control Board, developed a strategy to reduce TDS at the Agency's regional water recycling plants and to encourage salt export through optimum utilization of the NRWS consistent with the OBMP.

Implementation of the current Salinity Action Plan is expected to achieve substantial avoided costs and valuable benefits for the region. The Plan consists of the following:

FIGURE 8-2: RELATIVE COST OF SALT REMOVAL FROM CHINO BASIN ($/TON)



Water Softener Removal Rebate Program — The Agency developed an *Automatic Water Softener Removal Rebate Program* that was launched in September 2008. Implemented in partnership with the Metropolitan Water District of Southern California, National Water Research Institute, and the Southern California Salinity Coalition, the program developed fact sheets, newspaper and cable TV ads, and a video that could be shown on local cable stations explaining the impact of the salt from the use of residential self-regenerating water softeners on the regional recycled water supply. As of February 2013, over 575 residents have participated in the Self-Regenerating Water Softener Rebate Program keeping approximately 132 tons per year of salt out of the Regional system. As a result of this program, an estimated 11 acre-feet of water has been saved each year. A focused campaign promoting the rebate program will continue throughout the year with the goal of removing as many self-regenerating water softeners as possible.

- The objective of this project is to achieve significant reductions in salinity contributed to the wastewater systems from automatic water softeners. It is estimated that by removing all self-regenerating water softeners, recycled water TDS will be reduced by about 15 to 25 mg/L. This program provides an opportunity to educate the public on why salinity is such

an important water quality issue and also places emphasis on the growing importance of recycled water as one of the core water supplies for the Agency's service area.

- Water Softener Legislation (AB 1366) – In 2009, the Agency successfully sponsored legislation, AB 1366, that now provides local agencies with expanded authority to regulate residential self-regenerating water softeners, especially in areas of the state with water bodies adversely impacted by salinity and high use groundwater basins that are hydro-geologically vulnerable to salinity pollution, such as the Chino Basin.

Water Softener Ordinance Passage — Subsequent to the passing of AB 1366, in March 2010, the Santa Ana Regional Water Quality Control Board (Regional Board) amended the Agency's Regional Water Recycling Permit and stated that the discharge of salt from residential self-regenerating water softeners into the collection systems will contribute to the achievement of the water quality objectives approved in the Basin Plan Amendment. As a result, in the summer of 2010, the Agency's Regional Technical Committee approved the formation of a Regional Water Softener Task Force, comprised of representatives from each of the contracting agencies, to draft a model ordinance to regulate self-regenerating water softeners. By February 2011, the Agency's Regional Technical and Policy Committees unanimously approved the ordinance for adoption.

On July 20, 2011, the Ordinance 87 amendment was adopted at the Agency's Board of Directors meeting. Thus far, the Cities of Montclair, Upland, and Fontana have adopted their ordinances prohibiting the future installation of residential self-regenerating water softeners. The other member agencies are in the process of revising their ordinances.

Implementation of the Maximum Benefit Basin Plan —In order to ensure compliance with the Maximum Benefit Basin Plan requirements and with the Memorandum of Understanding with the Orange County Water District and Regional Board the Agency has implemented the Maximum Benefit Basin Plan. Critical near-term action items undertaken include: (1) developing a monitoring work plan with the Chino Basin Watermaster; (2) evaluating regional wastewater pretreatment ordinance technical TDS increment; and (3) preparing annual reports on salt balance[1].

Buyback Agreement with CSDLAC —The Agency relinquished 3 MGD of owned capacity in the NRW to LACSD in April 2004, which has lowered annual payments to CSDLAC by approximately 23% or approximately $350,000 annually. Savings will be passed on to NRWS customers through more favorable rates and charges. These benefits will also encourage new and existing industries to discharge their saline effluent through the NRWS and increase the salt exports.

Chino Desalter "Brine Line" Capacity Alternatives —In April 2004, the Agency made an agreement with the Chino Desalter Authority (CDA) to sell the Agency's Brine Line capacity to the CDA. This allowed the CDA to discharge the brine wastewater from the Chino I Desalter Expansion and the future Chino II Desalter to the Brine Line Chino II Desalter. Subsequently, management of

[1] Report preparation is Chino Basin Watermaster's responsibility.

the Chino II Desalter decided to design and construct a different technology to eliminate the brine wastewater to the Brine Line.

Leasing of Temporary Brine Line Capacity to Lewis Operating Company —The Agency entered into an agreement with Lewis Operating Company (LOC) to lease a portion of the Brine Line capacity for their Chino Preserve Expansion. The Agency has made this lease available to LOC until the City of Chino completes the design and construction of the new Preserve Lift Station. The permanent sewer facilities are expected to be completed by March 2015. The California Institution for Women (CIW) will divert their discharge from the Brine Line to the new Lift Station after the new lateral from the CIW to this pump station is constructed.

Leasing of Temporary NRWS Capacity to GenOn —The Agency entered into an agreement with GenOn to lease a portion of the north NRWS capacity for their power generation plant located in the City of Rancho Cucamonga. The Agency has made this lease available to GenOn for two years and added a provision for two one-year extensions, if needed.

8.3 Economic Benefits of the NRWS and Salinity Management Action Plan

The Agency expects to achieve substantial avoided costs as well as benefits for the service area by implementation of the NRWS Action Plan. The Agency will avoid the cost of treating non-reclaimable industrial wastewater at the Agency's water recycling plants, which would require additional secondary and tertiary treatment capacity to handle the flow, plus desalination facilities, to remove TDS. A resulting economic benefit to the Agency is the ability to use 35,000 acre-feet per year of recycled water for groundwater recharge instead of more expensive imported water. The Agency expects to avoid an estimated $430 million in future costs over the next ten years as a result of the full implementation of the NRW Action Plan. Avoided costs are summarized in Table 8-2.

TABLE 8-2: COSTS AVOIDED BY THE NRW ACTION PLAN

Action Avoided	Estimated Future Costs Avoided ($ Millions)
Construction & Operation of Desalination Facilities at Regional Plants	$270
Construction of Secondary and Tertiary Treatment Facilities at Regional Plants for 15 MGD (at a rate of $8 per gallon per day including solids handling)	$120
Annual O&M Expenses	$12 per year
Total Net Economic Benefits Over Ten Years	**$510**

8.4 Future Brine Line Alternatives Evaluation

Agency staff prepared a technical memorandum to identify and evaluate various brine-concentrate treatment technologies and disposal options for the NRWS in lieu of current arrangement. Negotiations with current partners are currently underway and will be discussed further in the FY 14/15 TYCIP.

8.5 Current Ten-Year Plan

The Ten-Year Plan cost for the NRWS is $26.70 million. Several actions are being taken to increase the economic value of the NRWS and to improve or retain the integrity of the NRWS. The major CIP projects for the NRWS are described below and listed in Table 8-3.

The Agency is obligated to make annual payments to CSDLAC to cover its proportional share of the capital repair, relocation, reconstruction, and rehabilitation (4R) costs for the CSDLAC sewer and treatment systems. The relinquishment of three MGD of unused NRWS capacity to CSDLAC resulted in a total savings of $3.3 million over ten years.

As a part of the Ten-Year CIP, one of the goals of the Agency is to identify and assess the condition, rehabilitation, and replacement costs for the NRWS. The Agency retained the services of an engineering consulting firm and performed an exhaustive condition assessment of the NRWS pipelines and infrastructure including manholes using Closed Circuit Television (CCTV) and Global Positioning System (GPS) technology.

TABLE 8-3: NRW SYSTEM CAPITAL IMPROVEMENT PROGRAM—MAJOR PROJECTS

Project Number	Project Title	FY 2012/13 Projected Actual	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17-FY 2022/23	Total TYCIP FY 2012/13-FY 2022/23
EC13009	CSDLAC Capital Replacement Costs	1.43	$ 1.0 M	$1.18 M	$1.1 M	$9.8 M	$14.51 M
	NRW System Upgrades	$0.95 M	$2.36 M	$1.35 M	$0.85 M	$5.95 M	$11.46 M
	Misc. NRWS Special Projects	$0.025 M	$0.17 M	$0.06 M	$0.06 M	$0.42 M	$0.735 M
	Total - All NC Projects	**$2.4 M**	**$3.54 M**	**$2.59 M**	**$2.0 M**	**$16.17 M**	**$26.70 M**

The Agency continued implementation of the NRWS Condition Assessment recommendations for capital improvements. The relatively good condition of the NRWS allowed the improvements to be competed sooner, reducing the annual capital expenditure. An aggressive cleaning and on-going system maintenance program is in progress with the goal to clean every segment of the NRWS over the next several years. This cleaning effort will be supplemented with CCTV inspection of the pipe

after cleaning. If any additional repairs are identified from the CCTV inspection, a capital project will be initiated to refurbish the pipeline as needed. The on-going system maintenance program will help meet the requirements of the State mandated Wastewater Discharge Requirements for the Sanitary Sewer Management Program (SSMP).

9.0 FINANCING

9.1 Introduction

Economic recovery from the end of the recession in December 2009 has been slow with the labor force, capital stock, and productivity growing less rapidly than normal. California has recently begun showing signs of recovery; however the results of recent federal sequestration that targets cuts of $1.2 trillion over a ten-year period to local governments and public agencies could have profound impacts on the fragile growth. In addition, potential cuts to defense related jobs could further inhibit the state's economic recovery and affect funding for regional and local agencies.

Nonetheless, improved economic conditions are noticeable at the national, state, and local levels. Recovery has been evident in the manufacturing sector, where rising factory output has been observed, strong manufacturing production gains, and decreasing labor costs in the United States. The natural gas boom currently underway in the U.S. is another area that many economists believe will lower energy costs for U.S. manufacturers, thus improving the economy.

9.1.1 Employment Levels

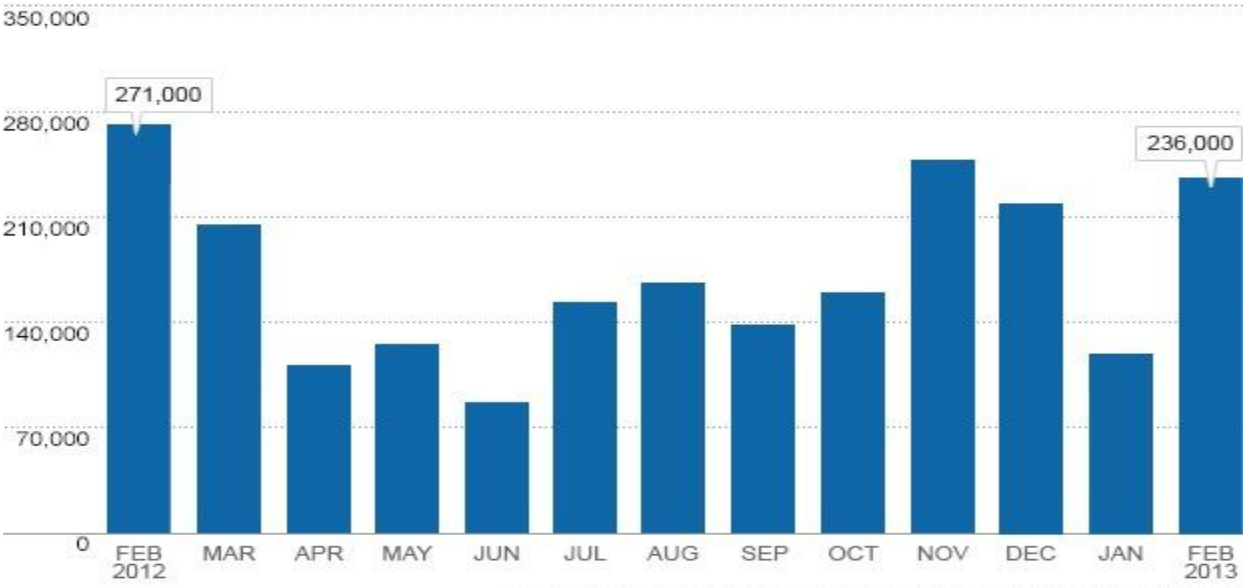
United States

Increases in jobs and decreases in unemployment rates over the past year have exceeded expectations. In February 2013 alone, 236,000 jobs were added[1], nearly doubling growth from January. Jobs gains were seen across multiple sectors with offices, restaurants, construction firms, and hospitals all experiencing growth. At the same time unemployment decreased from 8.2% in February 2012 to 7.7% with 12 million workers still unemployed[2].

The construction sector has recently begun showing signs of recovery, with 48,000 new jobs in February 2013 and 151,000 jobs over the past five months. This is encouraging because construction was the hardest hit sector during the "Great Recession" and single-handedly accounted for a quarter of the 8.8 million jobs lost in the financial crisis. Figure 9-1 below shows the positive trend of employment gains the US made between February 2012 and February 2013.

[1] Source: U.S. Labor Department
[2] Source: U.S. Bureau of Labor Statistics

FIGURE 9-1: TREND OF US EMPLOYMENT GAINS



Source: Bureau of Labor Statistics. All numbers are seasonally adjusted.

California

In February 2013, California added 41,200 jobs, and the unemployment rate dropped from 11.2% in February 2012 to 9.6% (the lowest since 2008). The 9.6% unemployment rate is a remarkable improvement but it is far above the 6% unemployment rate that preceded the 2008 economic downturn. The state's economy is continuing to gain momentum and February's growth was strong enough to decrease the number of unemployed residents below 1.8 million for the first time since 2009.

Inland Empire

The Inland Empire (IE), one of the regions hardest hit by the recession, has also begun showing signs of recovery. As reported in *The Sun Newspaper* in February 2013, the Inland Empire exhibited a dramatic reduction in unemployment with its jobless rate falling from 11.5% to 10.8% in January 2013. The counties of San Bernardino and Riverside added a combined total of 2,900 jobs in February 2013 and 27,500 over the past year for a 2.4 % increase in jobs. The Inland Empire's strongest job gains were in education and health services (+2,200 jobs), followed by professional and business services (+1,700), and construction (+1,300). From January 2012 to November 2012, the Inland Empire created over 16,000 jobs, according to Dr. John Husing's economic report for January 2013. If the trend holds, the region will gain back the 19,840 jobs lost in 2011 and 2012.

Housing

The developing job growth will encourage more buyers into the housing market. As indicated in Dr. Husing's report, the IE continues to have the advantage of more affordable housing prices than the coastal and Los Angeles areas, with median IE home prices at $197,000 as opposed to $352,000 in Los Angeles County, and $521,000 in Orange County. Another positive sign of recovery is the

projected increase in property valuation for FY 2013/14 of 1.25% by the San Bernardino County Assessor. This compares favorably to the 0.8% assessment roll of FY 2012/13. As a result of this assessment, the Agency projected a 1% growth on property tax receipts for FYs 2012/13 through 2022/23.

As rising home prices help free homeowners from negative equity, the region's rate of underwater mortgage homes, as reported in February 2013, has seen improvement which is lowered to 44% from the peak of 54% in 2011, and foreclosures on the market have significantly reduced as more investors coming into the region are purchasing properties.

FY 2013/14 Budget and FY 2014-2023 TYCIP

The IE's unemployment rate, assessment roll, and housing demand over the past two years have continued to show positive signs of recovery. The unemployment rate of 10.8% is still behind the national and state unemployment rates of 7.7% and 9.6%, respectively. The region's high 44% rate of underwater mortgages indicates the IE housing market is recovering relatively slower than the other southern California areas. As a result, the FY 2013/14 budget and the FY 2014-2023 TYCIP is conservatively optimistic about the economic recovery, the Agency's Levels of Service (LOS), and its enduring commitment to cost containment.

As part of the LOS, the Agency is committed to deliver high-quality, reliable services to customers in a regional, cost-effective manner through prudent financial planning and strategic resource management. As part of the broader Asset Management Plan, the LOS aligns to the Agency's operations and management (O&M) and capital decisions with customer expectations. To ensure supply reliability and quality, a significant component of the proposed budget and TYCIP is the reinstatement of repair and replacement (R&R) projects previously deferred as part of the Agency's cost containment plan. Future expansion and improvements to existing facilities are also included in preparation for the future anticipated growth and increased service demand. The proposed budget for the Regional Wastewater and Recycled Water programs is based on the multi-year rates adopted by the Agency's Board of Directors (Board) in February 2012 for Fiscal Years (FYs) 2012/13-2014/15.

Improvement and Expansion Projects

As discussed in Chapters 2 and 3, growth is anticipated in the Agency's service area. As a result, many of the projects listed in the TYCIP are capital projects targeting required improvements and expansions of existing facilities to meet the projected future service demands. Notable expansion projects include the relocation of the solids handling facility from Regional Water Recycling Plant No. 2 (RP-2) to Regional Water Recycling Plant No.5 (RP-5), and the expansion of the liquids handling capacity at RP-5. These projects are concentrated in the southern portion of the service area where the majority of the growth is expected to occur.

Another key component is the continuation of construction for the Recycled Water Distribution System (RWDS). The last two major segments of the RWDS, the Southern Area and Central/Wineville Area projects are targeted for completion in July and September 2014, respectively. The completion of these projects will help the Agency meet its goals of increasing recycled water use and reducing dependence on more costly imported potable water.

Repair and Replacement (R&R)

Maintenance, repair, and replacement (R&R) of aging equipment and facilities are other critical components of the proposed TYCIP. Beginning in FY 2008/09, the Agency embarked on a cost reduction initiative in response to the economic downturn. As a result of the cost containment efforts, R&R projects formerly deemed to be "non-critical" were deferred. One of the unintended consequences of this has been an increase in the amount of high cost emergency repairs as a result of postponed repair and replacement activities. Table 9-1 lists some of the major R&R projects included in the TYCIP.

TABLE 9-1: MAJOR REPAIR AND REPLACEMENT PROJECTS (> $1M)

R&R Project	Total in TYCIP
RP-1 Headworks Rehabilitation Project	$ 10,725,000
RP-1 Sludge Thickening System Improvement	8,450,000
RP-1 Secondary Clarifier Asset Rehabilitation	5,300,000
CCWRF Odor Control System Replacement	3,030,095
HVAC & Server Room Fire Suppression Improvements	2,621,616
San Sevaine Basin Improvements	2,525,000
RP-1 Outfall Relocation	2,000,000

9.2 Agency Capital Funding Sources

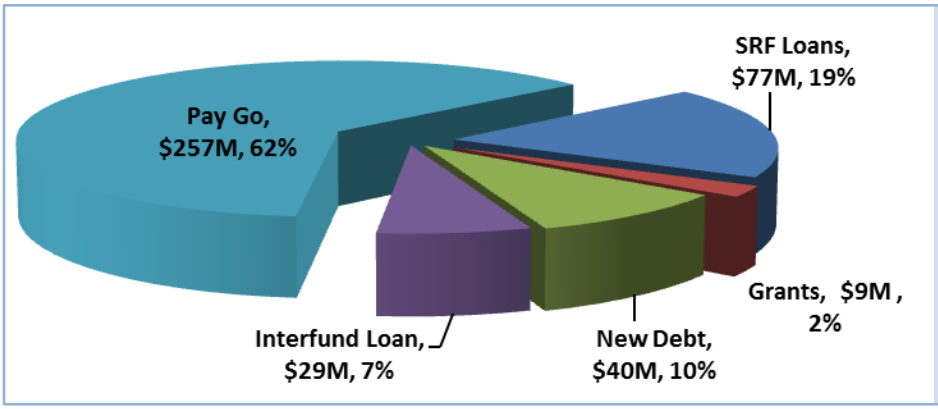
In general, the Agency's capital financing is derived from four primary sources (Figure 9-2):

1. Pay-go cash at $257 million or 62% of the total TYCIP which is defined as net system revenues[3]
2. New debt borrowing at $117 million or 29% of the total TYCIP; $77 million will be from State Revolving Fund (SRF) loans and $40 million will be through issuance of new debt
3. Federal and State grant receipts in the amount of $9 million or 2%
4. Inter-fund loans of $23.5 million; $8.5 Million from Regional Capital Program and $15 million from Non-Reclaimable Wastewater Program for supporting Recycled Water Program projects

Illustrated below in Figure 9-2 is a brief description of the Agency's primary revenue sources for capital expenditures.

[3] Primarily user charges, connection fees and property taxes not needed for debt service.

FIGURE 9-2: TYCIP FUNDING SOURCES



Sources of funding for the $413M FY 2013/2024 TYCIP

9.2.1 EDU Connection Fees

Any new development that connects to the Agency's regional sewer system pays a connection fee. These fees are collected by each of the Agency's contracting cities/agencies, and yearly estimates about the number and amount of connection fees collected are estimated based on EDUs (see Chapter 3 for additional discussion about EDU projections). In accordance with the Chino Basin Regional Sewage Service Contract (Regional Contract), collected funds are held in trust in a Capital Capacity Reimbursement Account (CCRA) by each of the contracting cities/agencies until the Agency requests the funds. Capital calls, or draws, from the CCRA funds are based on capital needs as identified and projected by the Agency. New EDU connection fee funds may only be utilized for capital acquisition, construction, enhancement, equipment, and process modifications.

TABLE 9-2: PROJECTED NEW EDU CONNECTION AND FEES

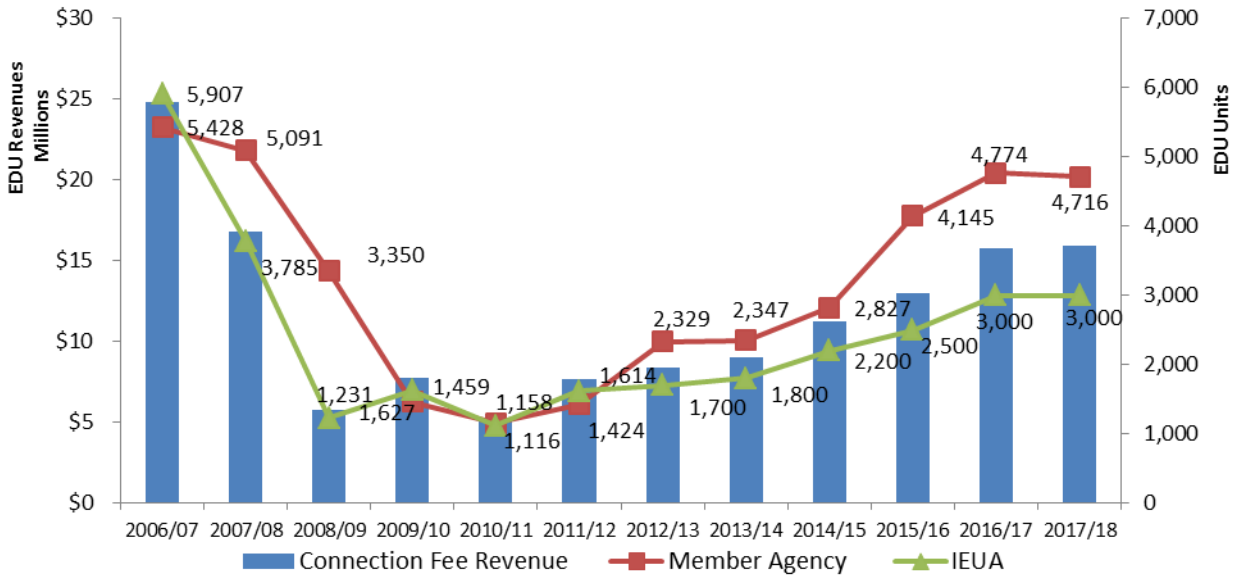
		Member Agencies Projections		IEUA Projections		Variance (IEUA – Member)	
FY	Rate/EDU* Connections	EDUs	$ (millions)	EDUs	$ (millions)	EDUs	$ (millions)
2013/14	$5,007	2,347	$12	1,800	$9	-547	($3)
2014/15	$5,107	2,827	$14	2,200	$11	-627	($3)
2015/16	$5,235	4,145	$22	2,500	$13	-1,645	($9)
2016/17	$5,392	4,774	$26	3,000	$16	-1,774	($10)
2017/18	$5,553	4,716	$26	3,000	$17	-1,716	($10)
2018/19	$5,692	4,261	$24	2,500	$14	-1,761	($10)
2019/20	$5,835	3,151	$18	2,200	$13	-951	($6)
2020/21	$5,980	2,941	$18	1,800	$11	-1,141	($7)
2021/22	$6,130	2,185	$13	1,500	$9	-685	($4)
2022/23	$6,283	2,147	$13	1,200	$8	-947	($6)
FY 2014 - FY 2023		**33,494**	**$187**	**21,700**	**$121**	**-11,794**	**($66)**

**Each Equivalent Dwelling Unit (EDU) is equal to 270 gallons per day of raw sewage flow as specified in the Regional Sewerage Service Contract – Exhibit J.*

The Agency's objective is to have new EDU connection fees primarily support capital improvements associated with new development. For example, connection fees can be used to support new treatment capacity for the Regional Wastewater Program, but are not to be used for ongoing operations or capital replacement of existing facilities. Operations and capital replacement costs should be supported by service rates.

Current projections indicate growth in the number of new EDU connections. For example, in FY 2012/13, the numbers of new EDU connections are currently projected to reach 1,700, exceeding the anticipated 1,100 connections. Table 9-2 above shows the projected new EDU connections in the TYCIP through FY 2023. As one may note, the Agency projections are more conservative than member agency projections; however, the Agency projections show considerable growth, which is in line with the expectations of new developments in the service area. As Figure 9-3 illustrates, the Agency's historically conservative estimates have more closely followed actual connection fee revenues than member agency's projections.

FIGURE 9-3: COMPARISON OF IEUA AND MEMBER AGENCIES NEW EDU CONNECTIONS



Note: the connection fees revenues are based on the Agency's projections.

Based on Agency projections, the connection fee revenues for FY 2013/14 are estimated at $9 million. This forecast assumes 21,700 new residential units will be connected to the sewer system over the course of the next ten years for a total of $120.7 million. The annual estimates of connection rates reported in Table 9-2 are conservatively aligned to the historical Construction Cost Index (CCI), which has an average growth rate of 2%, and incorporate the Agency's Board of Director's February 1, 2012 rate increases for FY 2012/13 through FY 2014/15, effective July 1 of each year as shown in Table 9-3 below.

TABLE 9-3: RATES FOR REGIONAL WASTEWATER AND RECYCLED WATER

Program	Rate	FY 2012/13 Effective July 1	FY 2013/14 Effective July 1	FY 2014/15 Effective July 1
Regional Wastewater	Monthly EDU Volumetric Fee	$12.39	$13.39	$14.39
	New Per EDU Connection Fee	$4,909	$5,007	$5,107
Recycled Water	Direct Delivery Rate Per AF	$155	$215	$290
	Groundwater Recharge Per AF	$195	$255	$335

9.2.2 Capacity Improvement Fees

Under the current rate structure, revenues for the Non-Reclaimable Wastewater System (NRWS) Program to support capital replacement costs consist of a monthly capacity improvement fee of $90 per capacity unit owned. These fees also support debt service costs related to the NRW system capital improvement financed with 2008A Revenue Bonds. The NRWS rate structure is currently under review and the final evaluation may result in some modifications prior to Board adoption of FY 2013/14 budget.

9.2.3 Property Tax Receipts

The Agency receives an allocated share of the San Bernardino County secured property tax levy, pursuant to the California Revenue and Taxation Code. Payments from the County are regulated by the California Teeter Plan[4] which allows taxing agencies to collect 100% of assessed taxes each year in lieu of receiving only those taxes actually collected by the County.

Figure 9-4 shows that property taxes and property values have experienced significant and gradual increases. Property tax revenues peaked in year FY 2008/09 and then began to steadily decline following the 2008 economic downturn. The IE in particular experienced significant declines in assessed property values; similarly the Agency's property tax receipts followed the same trend of declines.

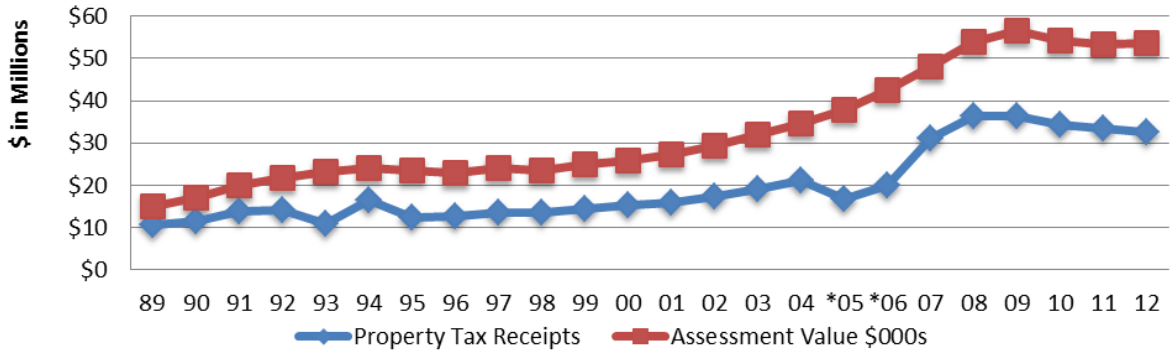
In the proposed budget for FY 2013/14, property tax receipts are projected at $33.4 million representing a 1% increase relative to the FY 2012/13 amended budget. An additional 1% increase is projected each year for the next ten year period. Property tax revenues contribute approximately 21% of the Agency's total revenues. While property taxes are an important revenue source, they are also very uncertain due the ability of the State's redirection of property taxes to other uses during fiscal periods of budget crisis.

[4] The California Teeter Plan is an alternative method for distribution of secured property tax revenues from the counties to local agencies that was established by California legislation in 1949.

Redevelopment Agency Taxes

Redevelopment Agency (RDA) tax revenues account for approximately $8 million or 25% of the Agency's total property tax receipts. These funds are utilized in the same manner as general ad valorem property taxes. The allocation of RDA taxes to Agency's various programs is the same as general taxes: 65% to Regional Capital Program, 22% to Regional Operations and Maintenance Program, 8% to Administrative Service Program, and a temporary allocation 5% to Recycled Water.

FIGURE 9-4: HISTORICAL PROPERTY ASSESSMENTS AND REVENUES



1) *Property tax shift by State of California for the Education Revenue Augmentation Fund (ERAF) in FY 1993*
2) *Prop 1A, property tax shift in FY 2005 & 2006 ($7M per fiscal year)*

State legislation ABx1 26 dissolved redevelopment agencies on December 29, 2011 and created successor agencies to bring the RDA's work to an end by year 2016. The Agency expects to maintain its share of RDA incremental taxes going forward with the only change being a direct payment from the San Bernardino County Auditor Controller Property Tax Trust Fund instead of the successor agencies.

Use of Property Tax Receipts

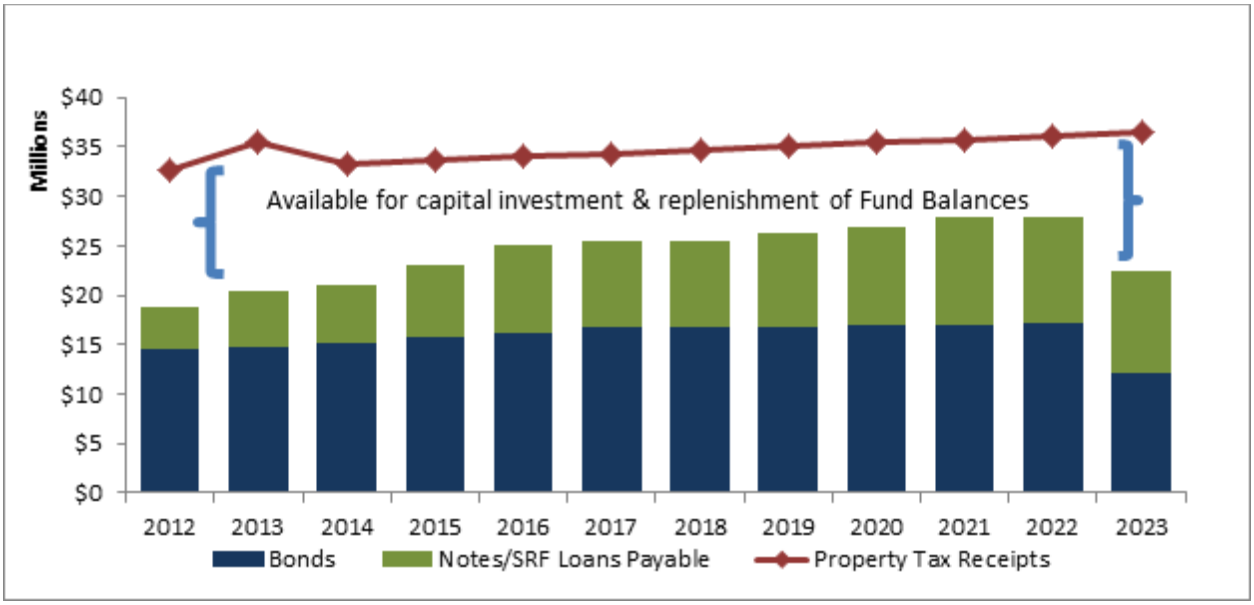
The Agency's policy on the utilization of property taxes has been to: (1) support annual debt service payments; (2) fund the acquisition of the capital assets; and (3) subsidize operational costs not supported by user charges and fees, primarily in the Wastewater Program.

Consistent with the Agency's policy since FY 2009/10, 8% of property tax revenues were temporarily allocated from the Regional Operations & Maintenance (RO) Fund to the Recycled Water (WC) Fund to support debt service. This allocation was reduced to 5% in FY 2011/12 and through FY 2013/14. In FY 2014/15, the 5% temporary allocation is set to be returned to the RO Fund.

The ultimate goal of the Agency is to have programs that are self-supported by user charges and fees, thereby minimizing reliance on property tax revenue to support operating costs and maximize property tax support of debt service costs, capital construction, and replacement costs.

Figure 9-5 illustrates how the Agency prioritized the use of property tax receipts, and the expected property tax receipts and its use during the TYCIP period. First, funds are used to pay debt services (bonds, notes, and SRF loans payable). The fund balance is used to replenish reserves.

FIGURE 9-5: USE OF PROPERTY TAX RECEIPTS

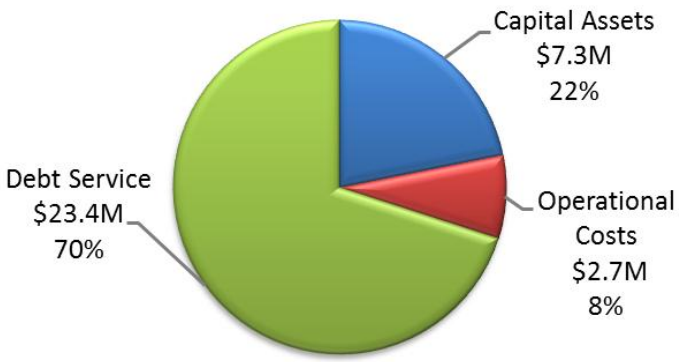


Decrease in 2023 is due to maturity of 2010A Bond (Refunding of 1994 Bond) in 2023

In the proposed FY 2013/14 budget, property tax revenues are allocated as shown in Figure 9-6 and by program as follows:

- Regional Capital Improvement (RC) fund - 65% to support the debt service costs, acquisition, construction, and improvement of wastewater facilities.
- Regional Operations and Maintenance (RO) fund - 22% to support capital replacement of wastewater facilities, debt service, and operating costs.
- Recycled Water (WC) fund temporarily 5% to support debt service costs.
- Administrative Services (GG) fund - 8% to support acquisition of Agency wide assets such as fleet vehicles, computers, and hardware.

FIGURE 9-6: USE OF PROPERTY TAX RECEIPTS FY 2013/14



9.2.4 Grant and Loan Proceeds

Over the years, grants have been a significant source of funding for the Agency's capital investment program. As a Special District[5], the Agency is eligible for various Federal, State, and local grant programs. The Agency has previously received grants from various Federal, State, and local entities, but the major sources have been the California State Water Resources Control Board (SWRCB), the California Department of Water Resources (DWR), and the United States Department of Interior's, Bureau of Reclamation (USBR). Table 9-4 below presents a summary of grant awards received by the Agency over the previous ten year period.

TABLE 9-4: SUMMARY OF GRANT AWARDS FY 2003 TO FY 2012 ($ Millions)

Type of Award	Total	Active	Closed
IEUA Grants	$102.9	$52.5	$50.4

During the "Great Recession," the Agency benefited from a $61 million grant award of the American Recovery and Reinvestment Act 2009 (ARRA) grants from the Environmental Protection Agency (EPA)/SWRCB and USBR. For Recycled Water projects, the Northwest Area Recycled Water Project of $7.9 million is supported by USBR Grant. In FY 2011/12, the Agency was also awarded a $4 million grant by the SWRCB for the Southern Recycled Water Project.

The Groundwater Recharge and Water Resources Programs have also benefited from grant funding. The Agency received $2.5 million ARRA grant funding for the Greater Prado Cleanup and Restoration Project, the Chino Creek Integrated Plan and Cleanup Project, and the Magnolia Channel Project. In addition, the Agency received funding from Federal Emergency Management Agency (FEMA) for repairs related to the 2010 Winter Storm Disaster.

An additional $3.3 million grant funding was received from various state and federal agencies for the Chino Creek Wetlands Earth Day Program, the Water Discovery Field Trip and Bus Transportation Program, the Multi-Family ULF Toilet Direct Install Program, the Landscape Audit and Training Program, and the Water Reuse Research and Study Program.

Due to the ongoing fiscal crisis in both the State and Federal budgets, competition over grant funds has increased. The Agency intends to continue to vigorously pursue grant opportunities.

9.2.5 State Revolving Fund (SRF) Loan Program

Another important source of funding for the Agency's capital programs is the State Revolving Fund (SRF) Loan Program from the EPA and SWRCB. The Agency has received a total of $105 million of SRF loan funding agreements from the SWRCB for the Regional Recycled Water Distribution System (System) and RP-1 dewatering improvements. A $20.6 million SRF loan agreement was awarded to

[5] Special Districts are independent governmental units that provide specialized services, function separately from local governments financially, administratively, and have their own governing boards.

the Agency for the Southern Area recycled water project which is expected to be completed in August 2014.

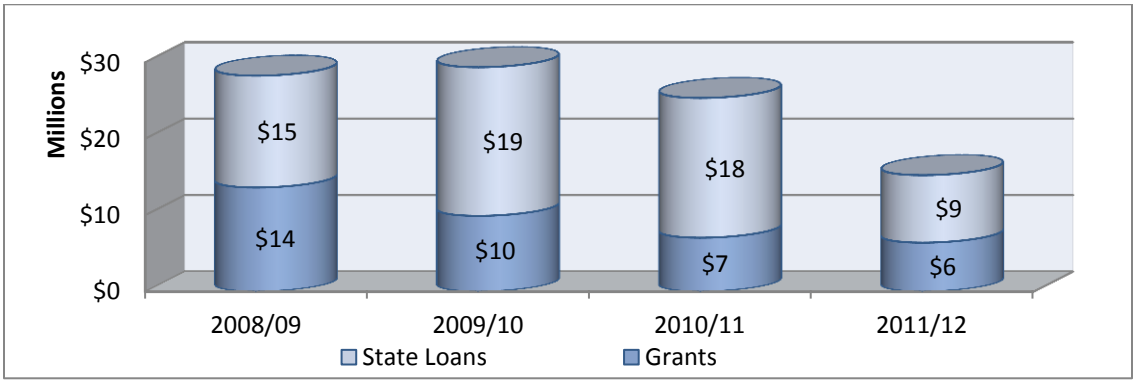
TABLE 9-5: SUMMARY OF SRF LOAN AWARDS FROM FY 2002 TO FY 2012

Type of Award	Total	Active	Closed
IEUA SRF Loans	$142.7	$83.8	$58.9

($millions)

The Agency is finalizing the Central/Wineville Area System SRF loan funding, which is estimated at $26 million and is eligible for a grant of up to $4 million, and the RP-1 Dewatering Facilities Improvement Project ($27 million SRF Loan) completed in FY 2012/13. Table 9-5 above presents a summary of SRF loans including the active and closed amounts.

FIGURE 9-7: SUMMARY OF GRANTS AND SRF LOANS RECEIPTS



From FY 2008/09 to FY 2011/12 the Agency has received a total of $98 million in grants and loans. See Figure 9-7 for proportions, above.

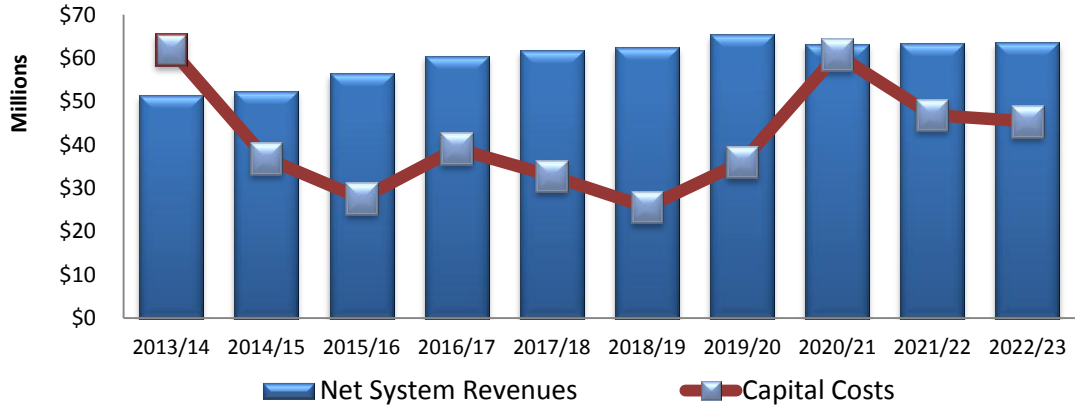
9.3 Financing Strategy

This section describes the Agency's financing strategy to address long term capital needs with the goals of minimizing borrowing costs and maintaining target fund balances. Aside from paying for capital projects with grants and low interest state loans, the Agency seeks to pay for capital projects first with system revenues (pay-go basis) whenever possible and pursue various forms of debt financing only when net revenues are insufficient.

In addition to the SRF loans financing for the Recycled Water Program and the replacement of the Operations Laboratory in the Regional Wastewater Program, the $413 million TYCIP requires the issuance of long term bonds, primarily to support the Southern Area Wastewater Expansion project of $90 million scheduled to begin in FY 2018/19. The majority of the funds, totaling approximately $99 million, or 24% of the total $413 million TYCIP, is scheduled for the first two fiscal years, (FYs 2013/14 and 2014/15).

Figure 9-8 shows that capital investments outpace net system revenues[6] by approximately $11 million only during the first year of the 10-year term. Thereafter, net system revenues are projected to exceed planned capital investments. In contrast to prior TYCIPs, the current projected revenue trend shows that the collected property tax and new connection fees will be more capable of supporting capital costs.

FIGURE 9-8: TOTAL CAPITAL COSTS VS. NET SYSTEM REVENUES



Debt Coverage Ratio Requirement

Bond covenants require the Agency to maintain a minimum total debt ratio (DCR) of 1.25 times (X) or higher on total outstanding debt. Moreover, the Agency has also established a minimum debt coverage ratio target of 1.6X (160%) for parity debt. Parity debt includes all of the currently outstanding bonds, (i.e., 2005A, 2008A, 2008B, and the 2010A Refunding the 1994 Bonds), as well as the SRF Loan for the RP1 Dewatering project, and any subsequent SRF loans (i.e., Southern Area and Central/Wineville Area projects). Sustainability of these debt coverage ratios is both a legal requirement (1.25X) under current bond covenants and a key objective (1.6X) in order to sustain the Agency's financial wellbeing.

The Debt Coverage Ratio (DCR) is the measurement of an entity's ability to generate enough cash to cover debt payments (principal payments and related interest). DCR also serves as a critical financial measure in determining its overall credit rating, ability to refinance existing debt, and accessibility to lower rates for future borrowing costs. Maintaining the Agency's financial condition also relies on sustaining the DCR to the covenanted requirement under current bond indentures.

Improvement of the Agency's DCR was a key driver of multi-year rate increases adopted by the Board in February 2012 for the Regional Wastewater and Recycled Water programs. The Board established a minimum DCR target of 1.50X and 1.70X to be achieved by the end of FY 2013/14 and FY 2014/15, respectively, as shown in Table 9-6.

[6] Net system revenues are revenues generated through the Agency's business activities such as EDU volumetric charges, meter charges, EDU connection fees, etc. They do not include borrowed funds.

TABLE 9-6: TARGETED DEBT COVERAGE RATIO

FY 2012/13	FY 2013/14	FY 2014/15
1.43X	1.50X	1.70X

Based on current assumptions, and the combined effect of the higher user charges and ongoing cost-containment initiatives, the DCR is projected to improve from 1.75X in FY 2013/14 to 2.18X by FY 2015/16, which exceeds the DCR target of 1.70X as reported in Table 9-4.

TABLE 9-7: DEBT COVERAGE RATIO BASED ON CURRENT ASSUMPTIONS

	Actual FY 2011/12	Projected Actual FY 2012/13	Proposed FY 2013/14	Forecast FY 2014/15	Forecast FY 2015/16
DCR	1.67X	1.92X	1.75X	2.01X	2.18X

The projected achievement of a DCR of 1.75X in FY 2013/14 is significant (the Board's target was 1.50X); however, it is still below the 1.90X average credit rating identified by Fitch for comparable AA rated medium size wastewater/water agencies. Table 9-7 shows the Agency's expected DCRs based on current budget and expenditure assumptions. Table 9-8 shows the DCR required by Fitch to achieve AA and AAA ratings.

TABLE 9-8: FITCH AVERAGE CREDIT RATING FOR MEDIUM SIZED WASTEWATER/WATER AGENCIES

Rating Agency	AA rating	AAA rating
Fitch	1.9X	2.7X

Growth and Financing Needs

Considering the anticipated growth and expansion projects needed to meet increasing service demands in the next ten years, improving the Agency's long term credit rating from AA- to AAA is essential. By attaining the AAA credit rating (considered high quality borrower) the Agency will be better positioned to acquire new debt at a significantly lower cost. In the current market, the differential cost of borrowing between AA and AAA is about 20 basis points. On a $40 million bond issue, this equates to a borrowing-cost-savings of over $2.4 million over a 30 year term.

The Agency applies a priority tiered financing strategy to ensure the lowest cost of borrowing while maximizing flexibility. This tiered financing strategy includes system revenues, fund balance draws, and SRF loans by prioritizing low-cost funds and approaching expensive funding sources last.

Projections indicate that in order to fund aggregate capital expenses of $413 million over 10 years, the Agency will require borrowing of approximately $77 million in SRF loans to support recycled water projects and a $40 million bond issues in FY 2018/19 for the $90 million Southern Area Expansion project. The application for SRF loans reflects the Agency's goal to fund capital investment on a pay-as-you-go basis, or utilize the lowest cost of financing, and minimize the use of bonds. Securing federal and state economic stimulus grants and loans will continue to be part of the overall financing strategy. Table 9-9 shows the Agency's expected borrowing schedule for the TYCIP.

TABLE 9-9: BORROWING REQUIREMENTS
($ Millions)

Fiscal Year	Bonds	SRF Loans	Aggregate Borrowing
2014	$0	$25	$25
2015	0	14	39
2016	0	3	42
2017	0	9	51
2018	0	4	55
2019	40	0	95
2020	0	7	102
2021	0	11	113
2022	0	4	117
2023	0	0.2	117
Total	**$40**	**$77**	**$117**

It is important to note that the capital expenditure estimates beyond 2016 carry some uncertainty and that new, unforeseen capital costs may arise in the later years that have not been contemplated in this current TYCIP program. As the TYCIP is reviewed and updated each fiscal year, adjustments will be made as necessary.

9.4 AB-1600 Nexus Test

Each year, the Agency assists its Contracting Agencies to demonstrate compliance with AB1600 (the "Mitigation Fee Act"), which requires that Capital Capacity Reimbursement Payments (CCRP), most commonly referred to as development fees, be reasonably related to the service provided. This is accomplished by summarizing the projected capital needs for the estimated funds and the duration that the funds will be held.

Table 9-10 summarizes the Agency's projected capital needs for CCRP to support the Regional Wastewater Capital Improvement (RC) fund capital investments over the next 10 years.

TABLE 9-10: PROJECTED STATUS OF REIMBURSEMENT PAYMENTS ($1000S)

Fiscal Year	Annual Contracting Agency Receipts (Reimbursement Fees)	IEUA Expenditure of Funds (Capital Calls)	Balance of Funds Collected	Balance of Funds Collected for 5 or More Years
2003/04	29,726	0	53,725	0
2004/05	26,868	51,200	29,393	0
2005/06	20,800	58,270	0	0
2006/07	22,615	20,100	2,515	0
2007/08	16,626	14,676	4,465	0
2008/09	5,752	11,000	0	0
2009/10	7,754	0	7,754	0
2010/11	5,398	7,000	6,151	0
2011/12	7,694	7,500	6,345	0
2012/13	8,345	6,000	8,690	0
2013/14	9,013	7,000	10,703	0
2014/15	11,235	11,000	10,938	0
2015/16	13,087	6,000	18,025	0
2016/17	16,175	17,000	17,200	0
2017/18	16,660	12,000	21,860	0
2018/19	14,231	0	36,091	0
2019/20	12,836	0	48,927	0
2020/21	10,765	9,000	50,692	0
2021/22	9,195	29,000	30,887	0
2022/23	7,540	29,000	9,427	0

Compliance with AB-1600 Nexus Test requires that funds collected from CCRP be expended within five years. As indicated in Table 9-8 in the column labeled "Balance of Funds Collected for 5 or More Years," reimbursement payment receipts are not projected to stay in deposit for more than five years during the ten-year period. Funds in the CCRP accounts are expected to be expended to support capital investments costs, and to provide adequate coverage for cash flow shortages arising from receipt of state loan or grant reimbursements. The expected bond issuance of $40 million in FY 2018/19 to support the $90 million Southern Area Expansion project will result in there being no draw from the CCRP account until FY 2021/22. Overall, the CCRP balance is projected to meet the statutory requirements of AB-1600.

9.5 Conclusion

The financing strategy for the Agency's TYCIP of $413 million is to utilize funding from the following sources: user charges (Pay-Go), 62% or $257.4 million; a combination of new bonds and low interest state loans from the State Water Resources Control Board (SWRCB), 28.4% or $117.3 million; inter-fund loans, $29 million or 7%, and Federal and State grants, 2.3% or $9.3 million as indicated in Table 9-11.

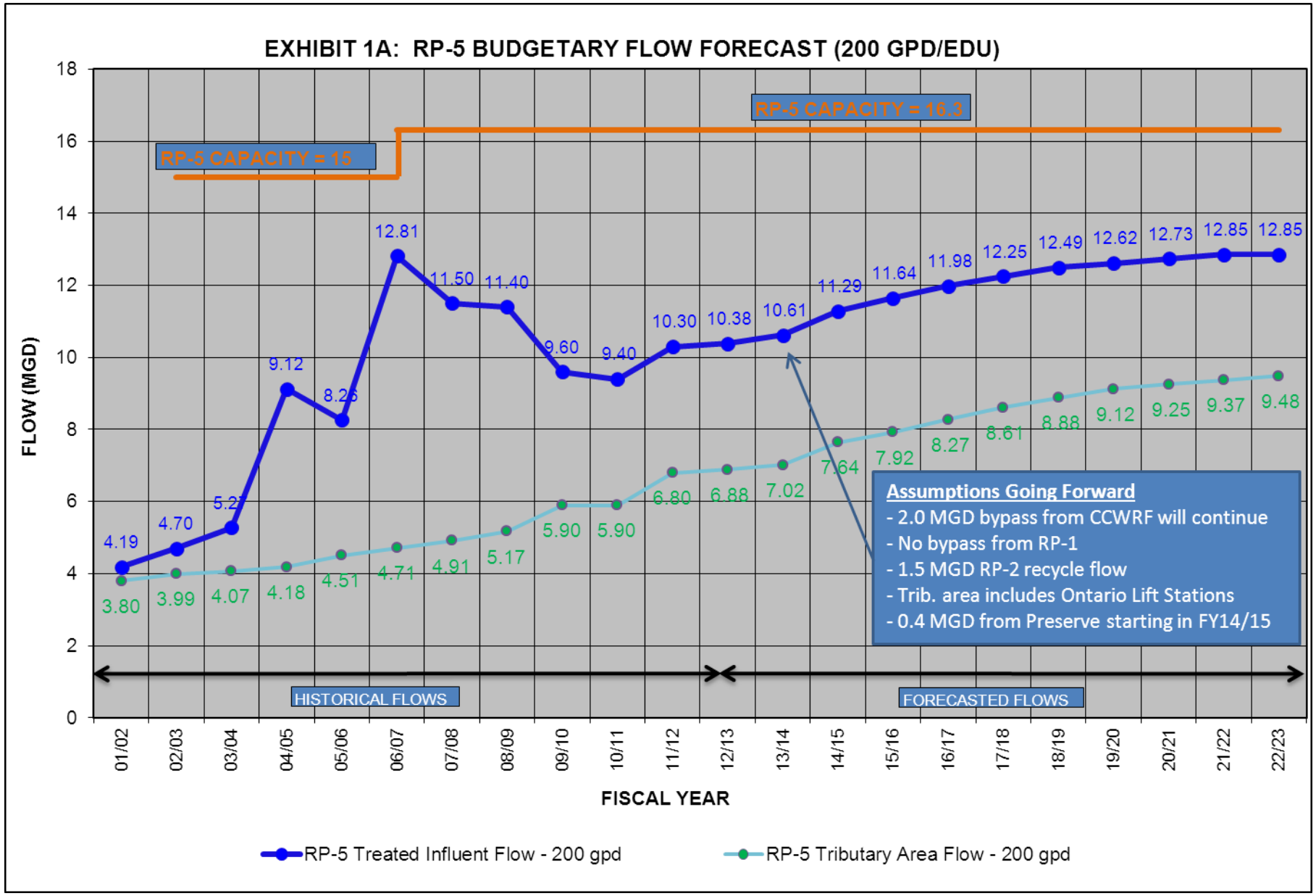
The current economic outlook predicting local economic improvement and growth indicates that the Agency should proactively improve existing facilities in order to continue to meet the LOS commitment. In order to renovate aging infrastructure to levels that can successfully meet

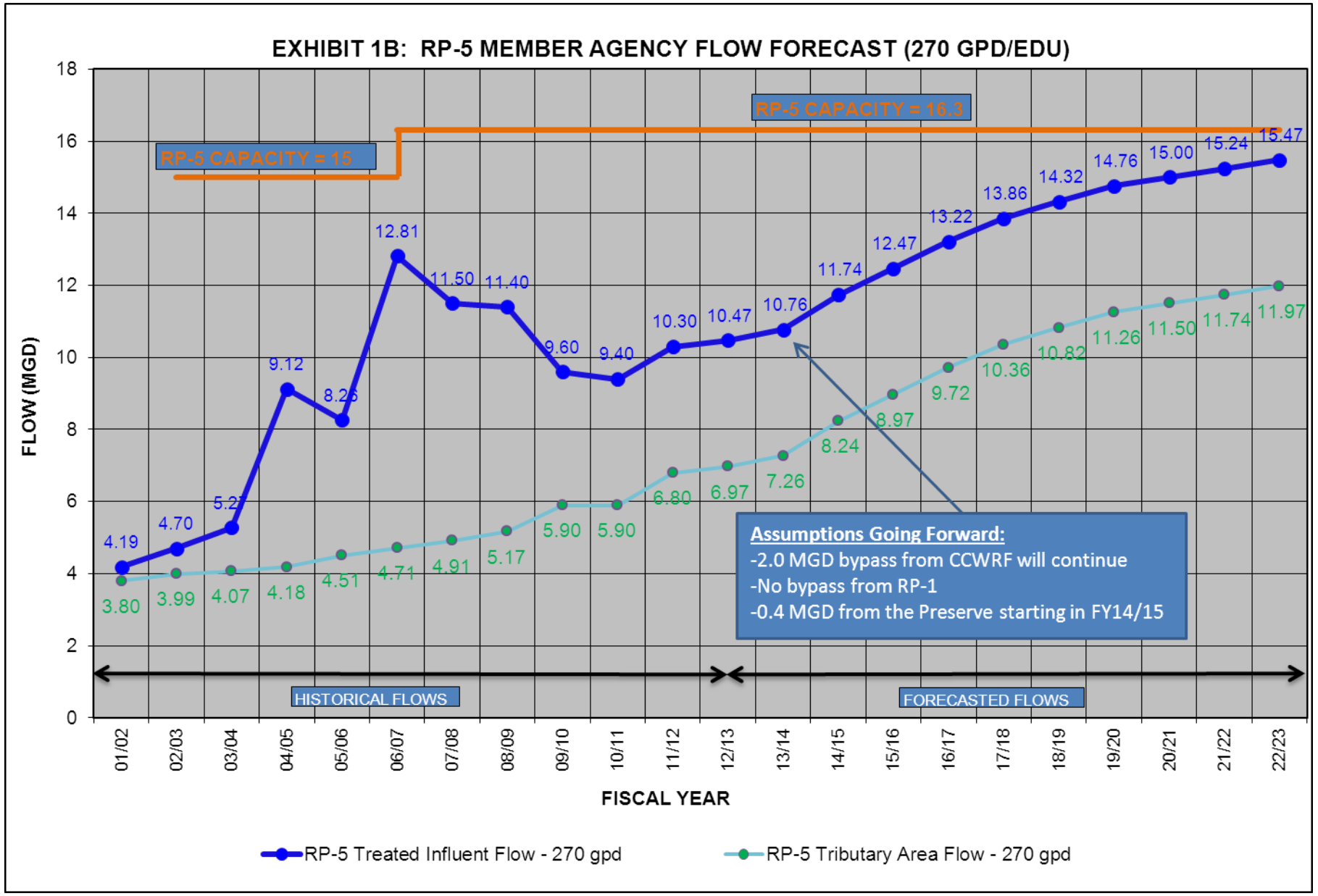
anticipated demands, annual repair and replacement spending will require more than double the previous year's budget, from $6 million to $20 million as recommended by the Agency's Asset Management Plan. The proposed TYCIP of $413 million addresses these needs, with a strong focus on the southern portion of the service area where the majority of the growth is projected.

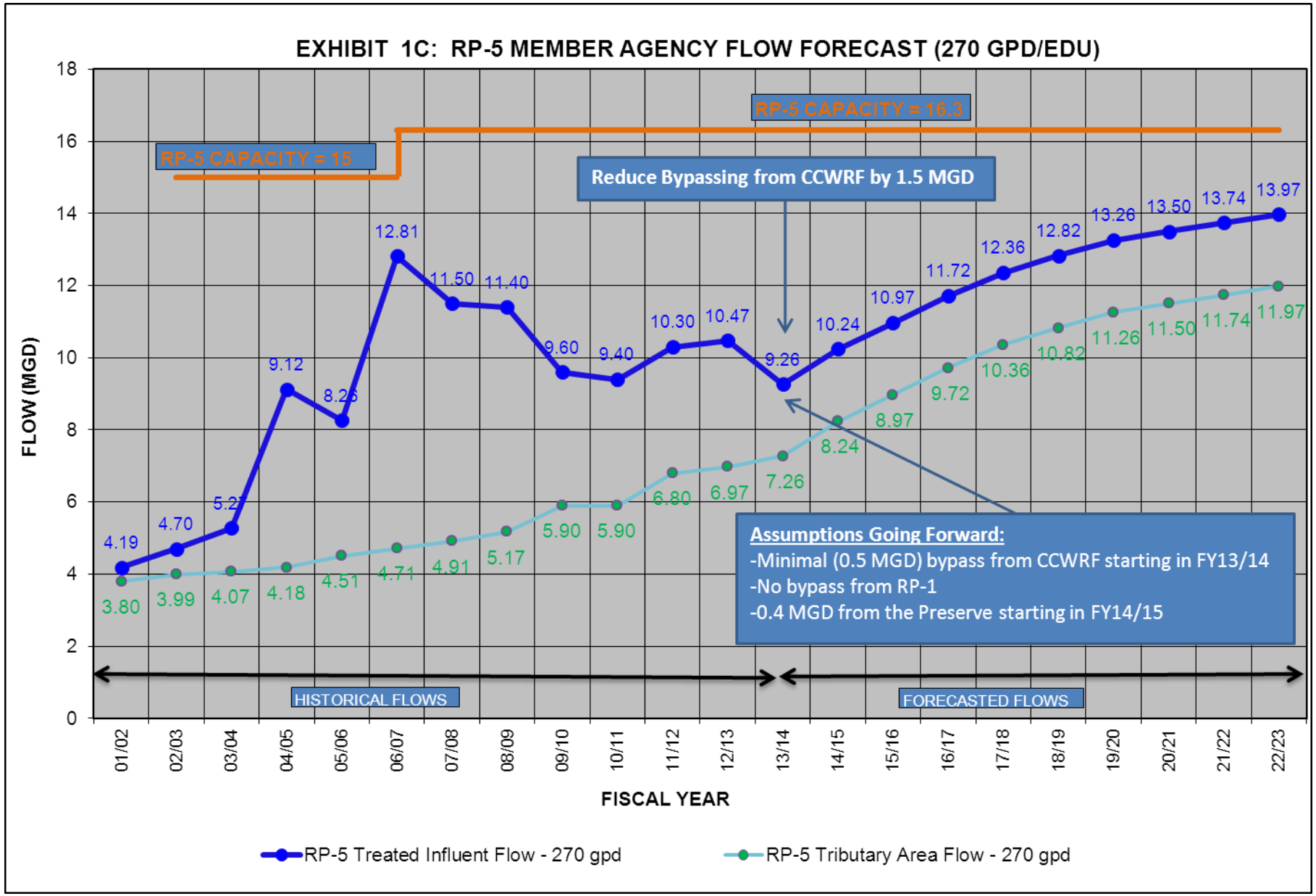
Future capital investments in the expansion and improvement of Agency facilities will be supported through a combination of pay-go and external financing, such as bonds or State Revolving Fund loans. To secure low borrowing costs and support moderate increases in the future, it is essential that the Agency improve its long term credit rating from AA- to AAA.

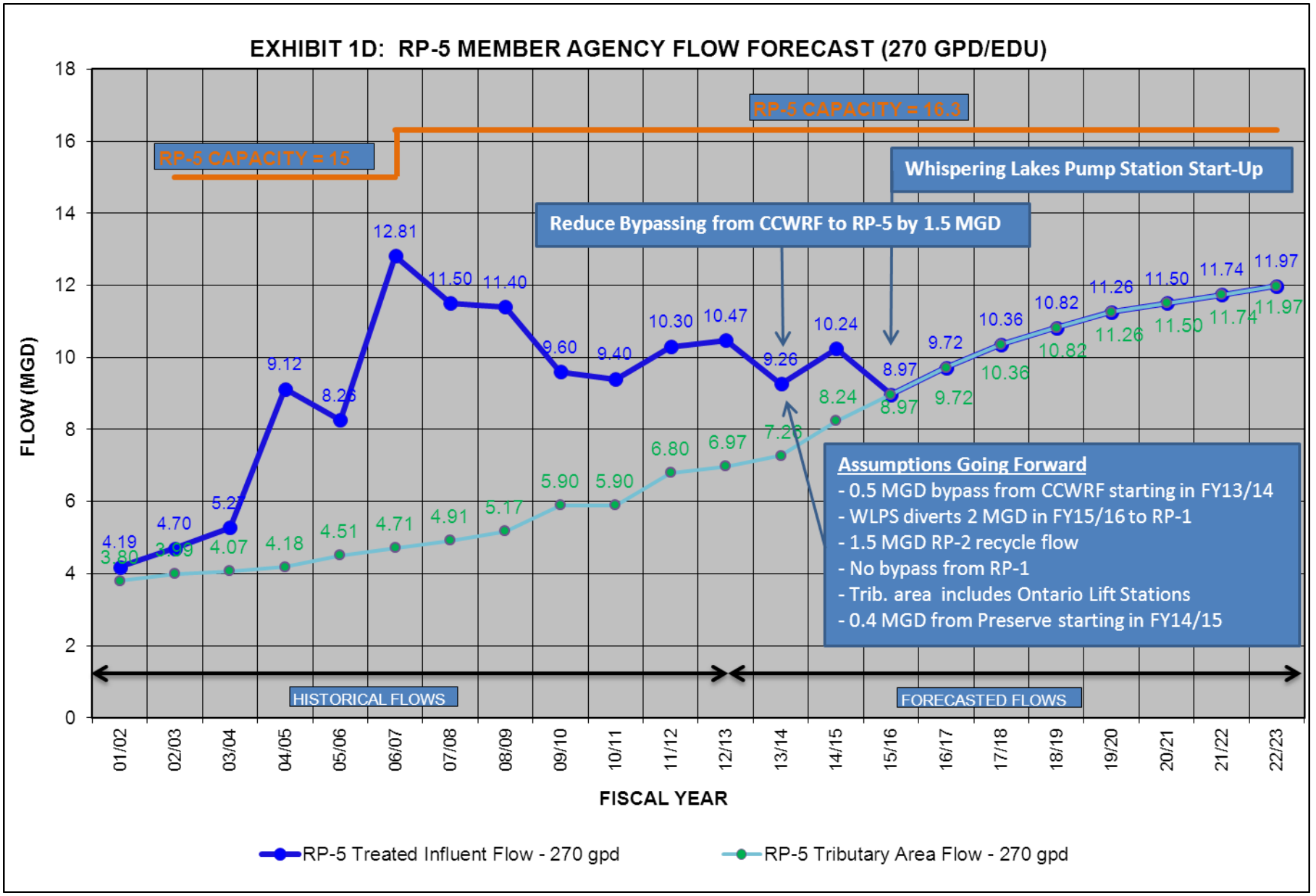
TABLE 9-11: KEY TYCIP FINANCING ASSUMPTIONS

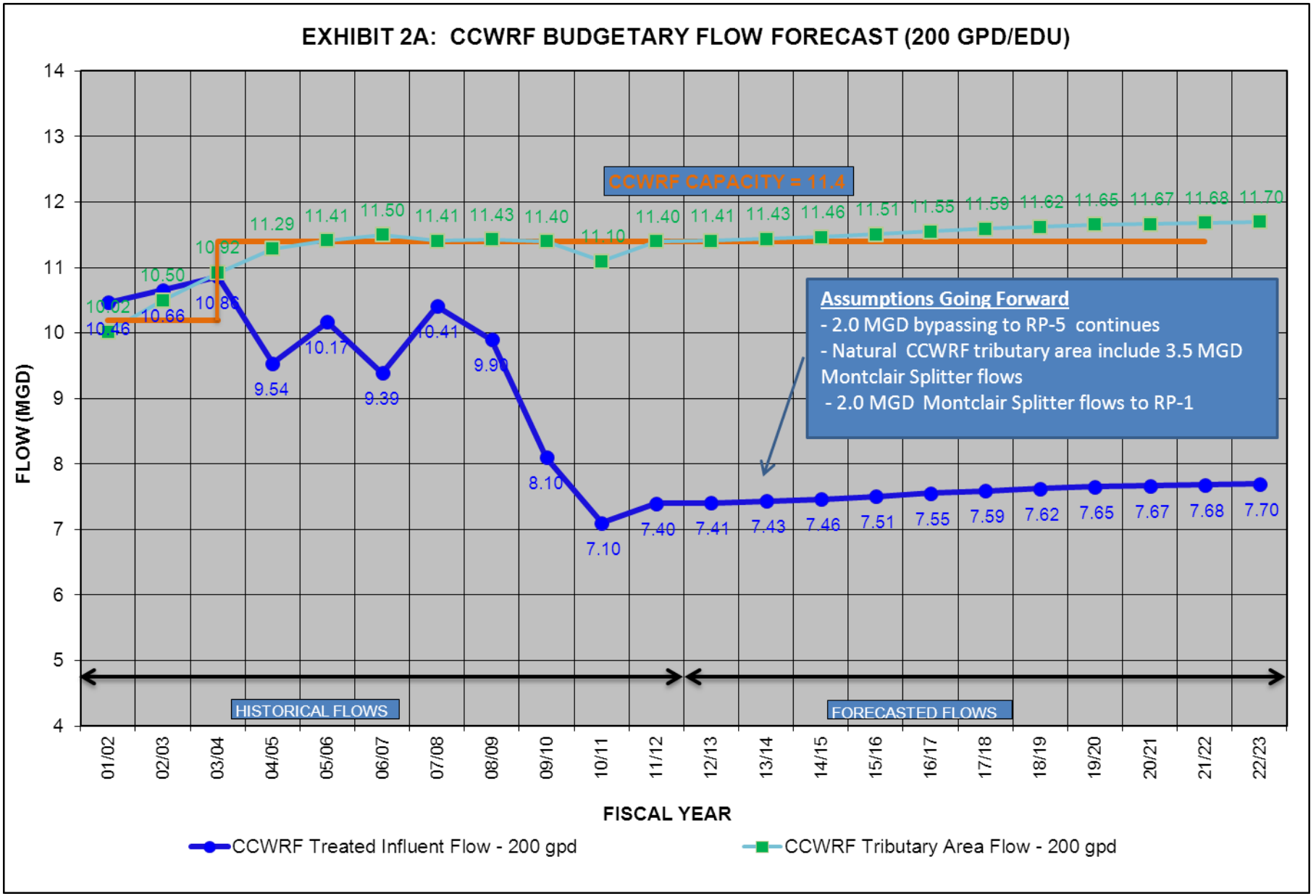
Revenue Category	10-YR TYCIP	% of TYCIP	Key Assumption(s)
New Debt	$117.3M	28.4%	$40M Bond issue in FY 2018/19 to finance Southern Area Expansion $40M SRF loans beginning in FY 2013/14 for Southern Areas and Central/Wineville $23M SRF loans for future recycled water projects $14M SRF loan to support new laboratory
Pay-Go	$257.4M	62.3%	Higher connection fee rates, increasing from $5,007 in FY 2013/14 to $6,283 by FY 2022/23 Peg estimates of property tax receipts on estimates provided by the San Bernardino County Assessor. FY 2013/14 estimated growth is 1%
Grants	$9.3M	2.3%	Research and apply for grants to support Agency capital projects
Inter-fund Transfers	$29.0M	7.0%	Optimize inter-fund loans within funds to meet critical project demands and mitigate the need for new debt
Total	$413.0M	100.0%	

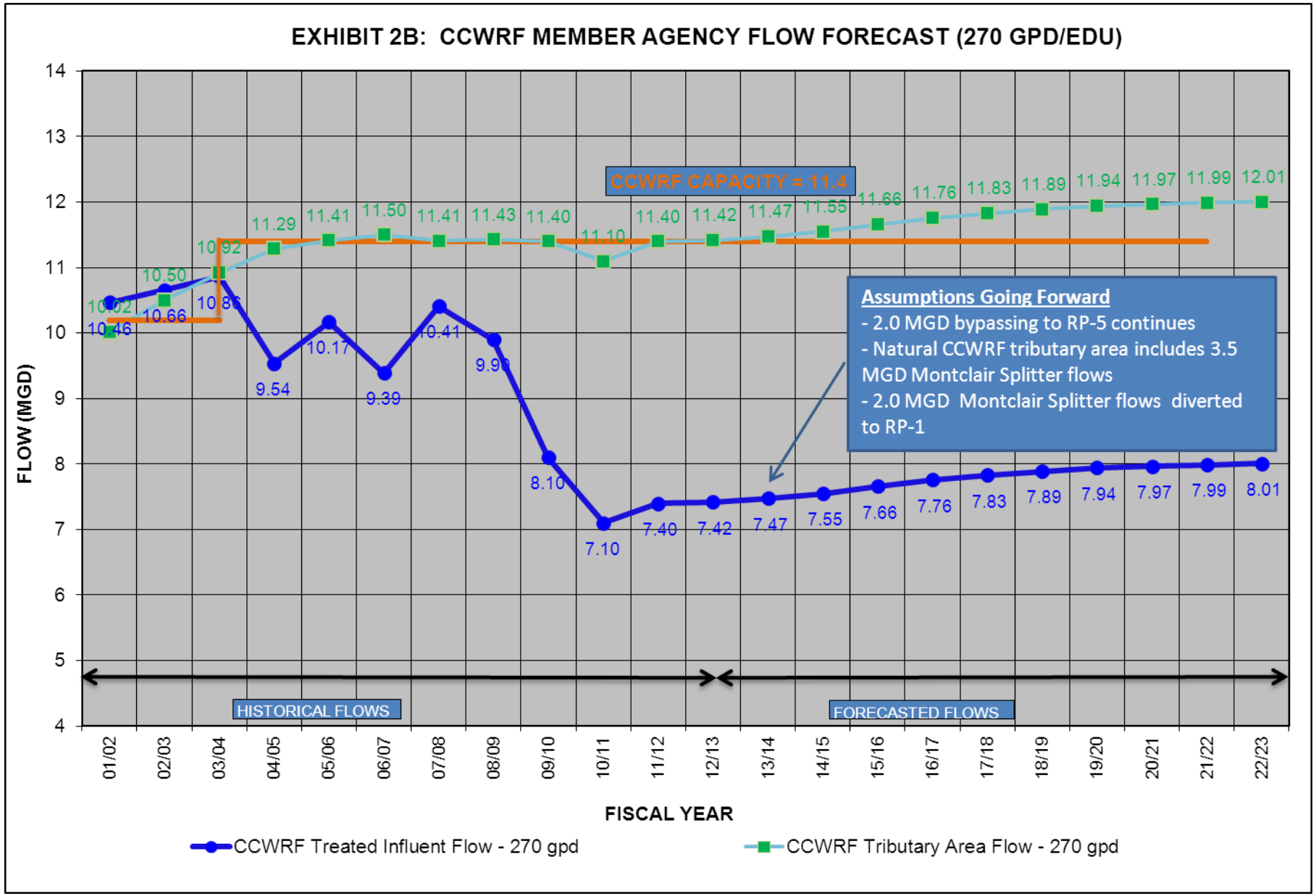

EXHIBIT 1A: RP-5 BUDGETARY FLOW FORECAST (200 GPD/EDU)
RP-5 CAPACITY = 15
RP-5 CAPACITY = 16.3
FLOW (MGD)
FISCAL YEAR
HISTORICAL FLOWS
FORECASTED FLOWS
Assumptions Going Forward
- 2.0 MGD bypass from CCWRF will continue
- No bypass from RP-1
- 1.5 MGD RP-2 recycle flow
- Trib. area includes Ontario Lift Stations
- 0.4 MGD from Preserve starting in FY14/15
RP-5 Treated Influent Flow - 200 gpd
RP-5 Tributary Area Flow - 200 gpd

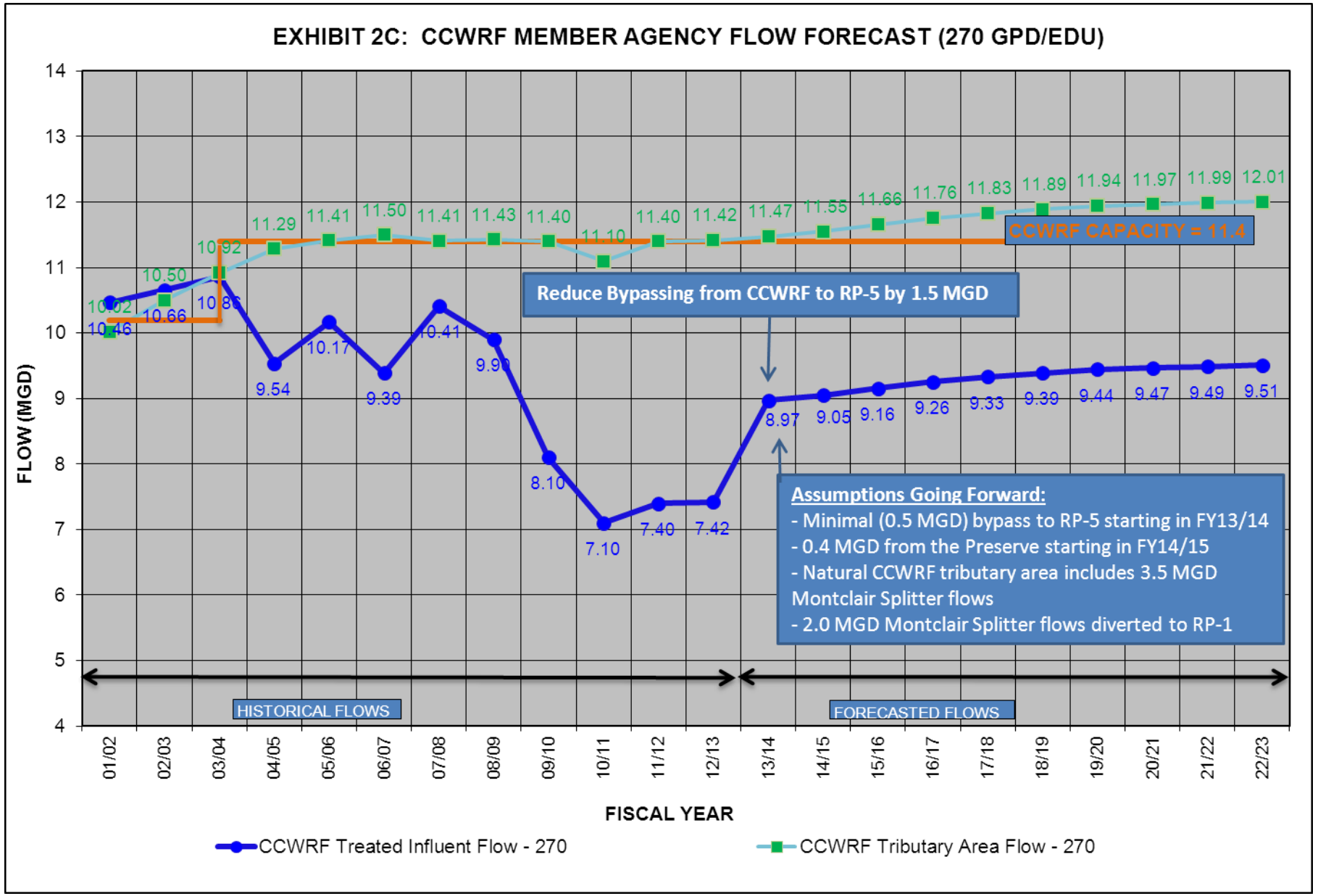

EXHIBIT 1B: RP-5 MEMBER AGENCY FLOW FORECAST (270 GPD/EDU)
RP-5 CAPACITY = 15
RP-5 CAPACITY = 16.3
FLOW (MGD)
FISCAL YEAR
HISTORICAL FLOWS
FORECASTED FLOWS
Assumptions Going Forward:
-2.0 MGD bypass from CCWRF will continue
-No bypass from RP-1
-0.4 MGD from the Preserve starting in FY14/15
RP-5 Treated Influent Flow - 270 gpd
RP-5 Tributary Area Flow - 270 gpd
4.19
4.70
5.27
9.12
8.26
12.81
11.50
11.40
9.60
9.40
10.30
10.47
10.76
11.74
12.47
13.22
13.86
14.32
14.76
15.00
15.24
15.47
3.80
3.99
4.07
4.18
4.51
4.71
4.91
5.17
5.90
5.90
6.80
6.97
7.26
8.24
8.97
9.72
10.36
10.82
11.26
11.50
11.74
11.97

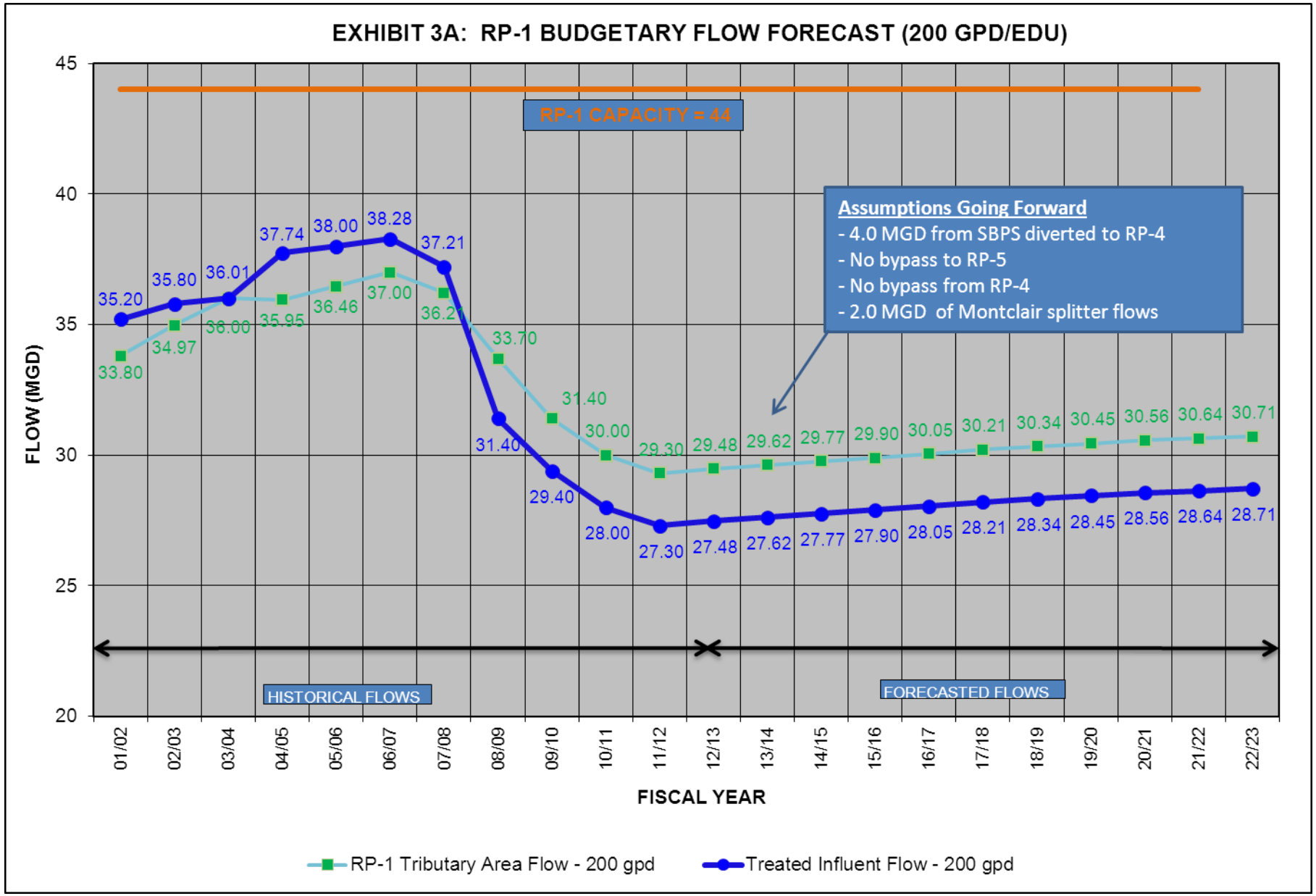

EXHIBIT 1C: RP-5 MEMBER AGENCY FLOW FORECAST (270 GPD/EDU)
RP-5 CAPACITY = 15
RP-5 CAPACITY = 16.3
Reduce Bypassing from CCWRF by 1.5 MGD
Assumptions Going Forward:
-Minimal (0.5 MGD) bypass from CCWRF starting in FY13/14
-No bypass from RP-1
-0.4 MGD from the Preserve starting in FY14/15
HISTORICAL FLOWS
FORECASTED FLOWS
FLOW (MGD)
FISCAL YEAR
01/02 02/03 03/04 04/05 05/06 06/07 07/08 08/09 09/10 10/11 11/12 12/13 13/14 14/15 15/16 16/17 17/18 18/19 19/20 20/21 21/22 22/23
4.19 4.70 5.27 9.12 8.26 12.81 11.50 11.40 9.60 9.40 10.30 10.47 9.26 10.24 10.97 11.72 12.36 12.82 13.26 13.50 13.74 13.97
3.80 3.99 4.07 4.18 4.51 4.71 4.91 5.17 5.90 5.90 6.80 6.97 7.26 8.24 8.97 9.72 10.36 10.82 11.26 11.50 11.74 11.97
RP-5 Treated Influent Flow - 270 gpd
RP-5 Tributary Area Flow - 270 gpd

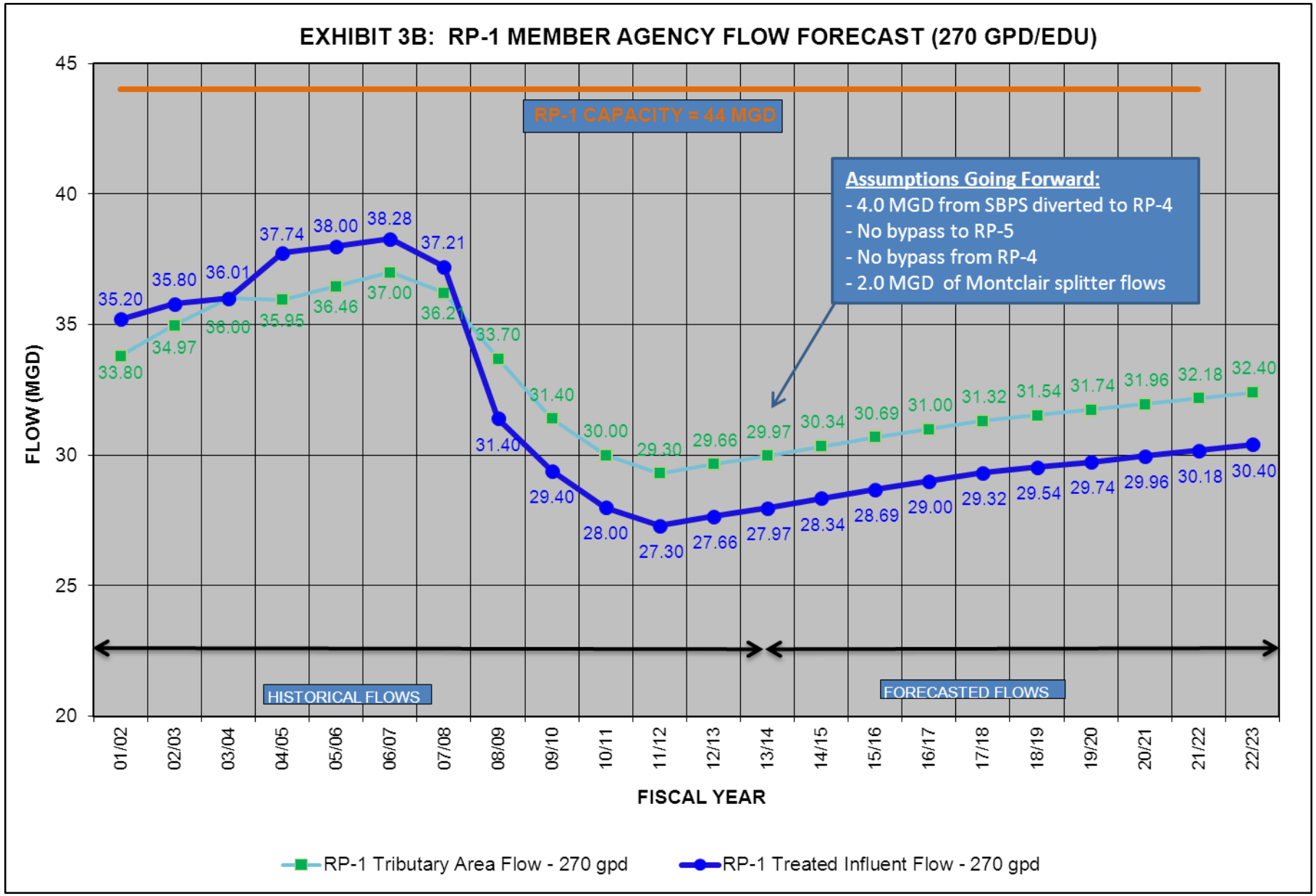

EXHIBIT 1D: RP-5 MEMBER AGENCY FLOW FORECAST (270 GPD/EDU)
RP-5 CAPACITY = 16.3
RP-5 CAPACITY = 15
Whispering Lakes Pump Station Start-Up
Reduce Bypassing from CCWRF to RP-5 by 1.5 MGD
Assumptions Going Forward
- 0.5 MGD bypass from CCWRF starting in FY13/14
- WLPS diverts 2 MGD in FY15/16 to RP-1
- 1.5 MGD RP-2 recycle flow
- No bypass from RP-1
- Trib. area includes Ontario Lift Stations
- 0.4 MGD from Preserve starting in FY14/15
HISTORICAL FLOWS
FORECASTED FLOWS
FLOW (MGD)
FISCAL YEAR
01/02
02/03
03/04
04/05
05/06
06/07
07/08
08/09
09/10
10/11
11/12
12/13
13/14
14/15
15/16
16/17
17/18
18/19
19/20
20/21
21/22
22/23
4.19
4.70
5.22
9.12
8.26
12.81
11.50
11.40
9.60
9.40
10.30
10.47
9.26
10.24
8.97
9.72
10.36
10.82
11.26
11.50
11.74
11.97
3.80
3.99
4.07
4.18
4.51
4.71
4.91
5.17
5.90
5.90
6.80
6.97
7.26
8.24
8.97
9.72
10.36
10.82
11.26
11.50
11.74
11.97
RP-5 Treated Influent Flow - 270 gpd
RP-5 Tributary Area Flow - 270 gpd

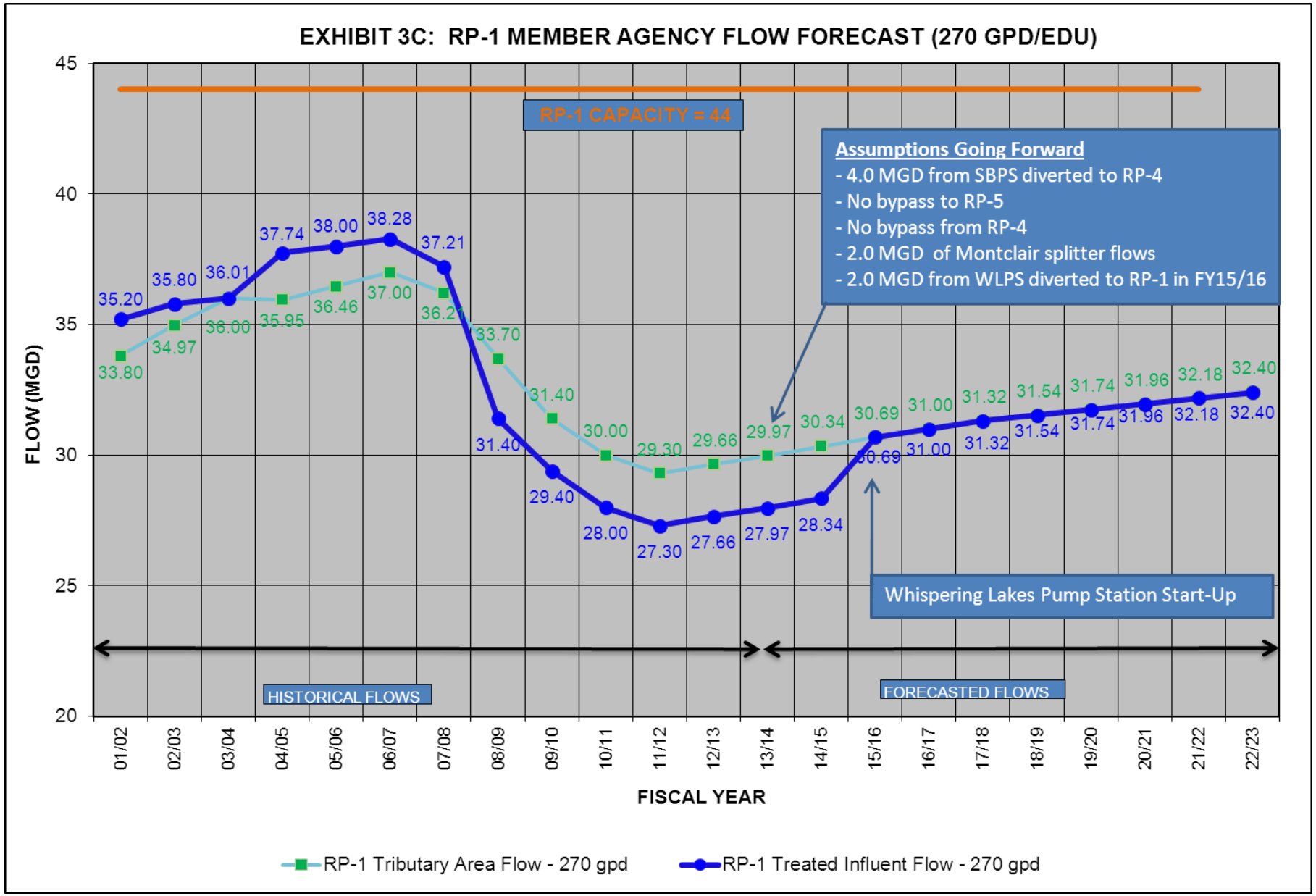

EXHIBIT 2A: CCWRF BUDGETARY FLOW FORECAST (200 GPD/EDU)
FLOW (MGD)
FISCAL YEAR
CCWRF CAPACITY = 11.4
Assumptions Going Forward
- 2.0 MGD bypassing to RP-5 continues
- Natural CCWRF tributary area include 3.5 MGD Montclair Splitter flows
- 2.0 MGD Montclair Splitter flows to RP-1
HISTORICAL FLOWS
FORECASTED FLOWS
CCWRF Treated Influent Flow - 200 gpd
CCWRF Tributary Area Flow - 200 gpd

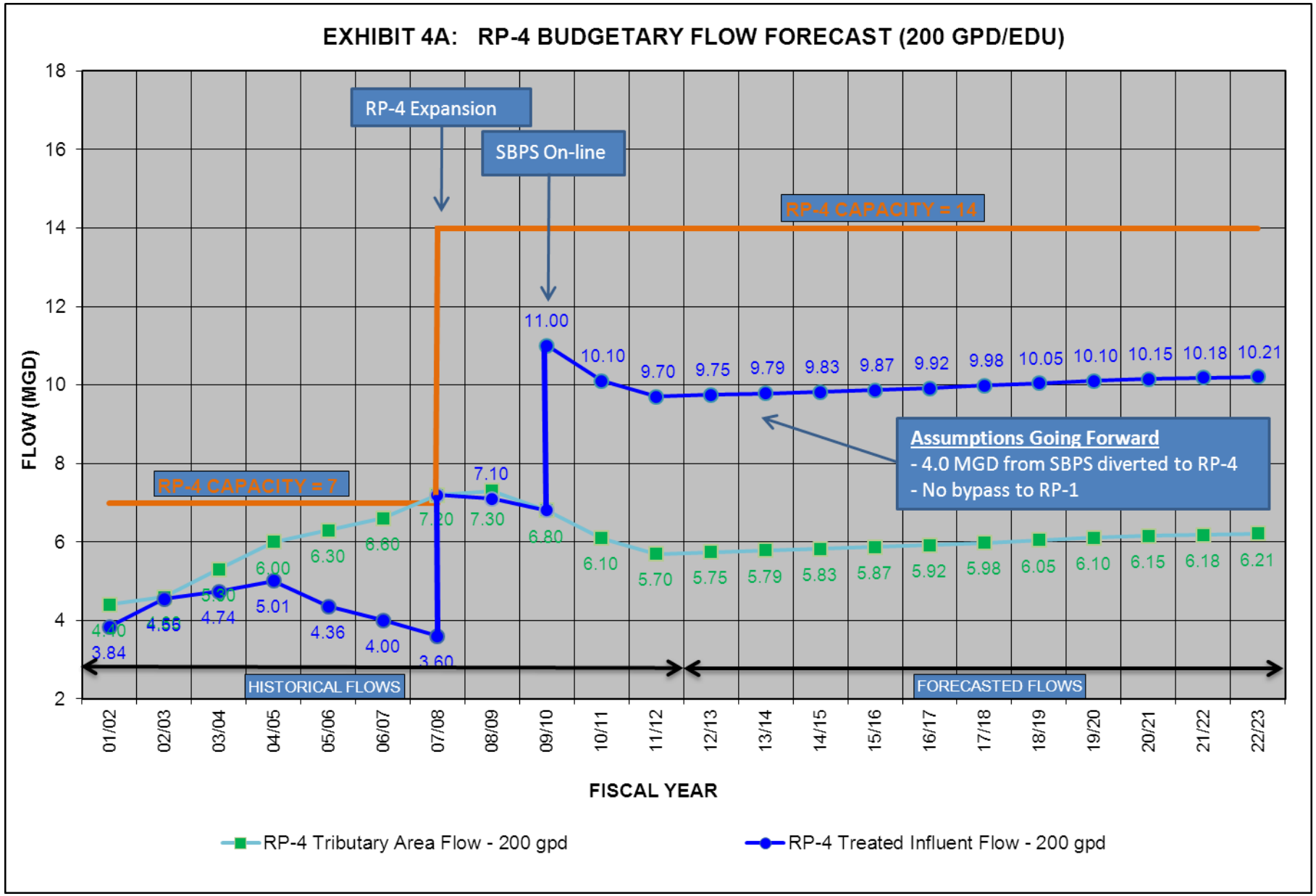

EXHIBIT 2B: CCWRF MEMBER AGENCY FLOW FORECAST (270 GPD/EDU)
FLOW (MGD)
FISCAL YEAR
CCWRF CAPACITY = 11.4
Assumptions Going Forward
- 2.0 MGD bypassing to RP-5 continues
- Natural CCWRF tributary area includes 3.5 MGD Montclair Splitter flows
- 2.0 MGD Montclair Splitter flows diverted to RP-1
HISTORICAL FLOWS
FORECASTED FLOWS
CCWRF Treated Influent Flow - 270 gpd
CCWRF Tributary Area Flow - 270 gpd

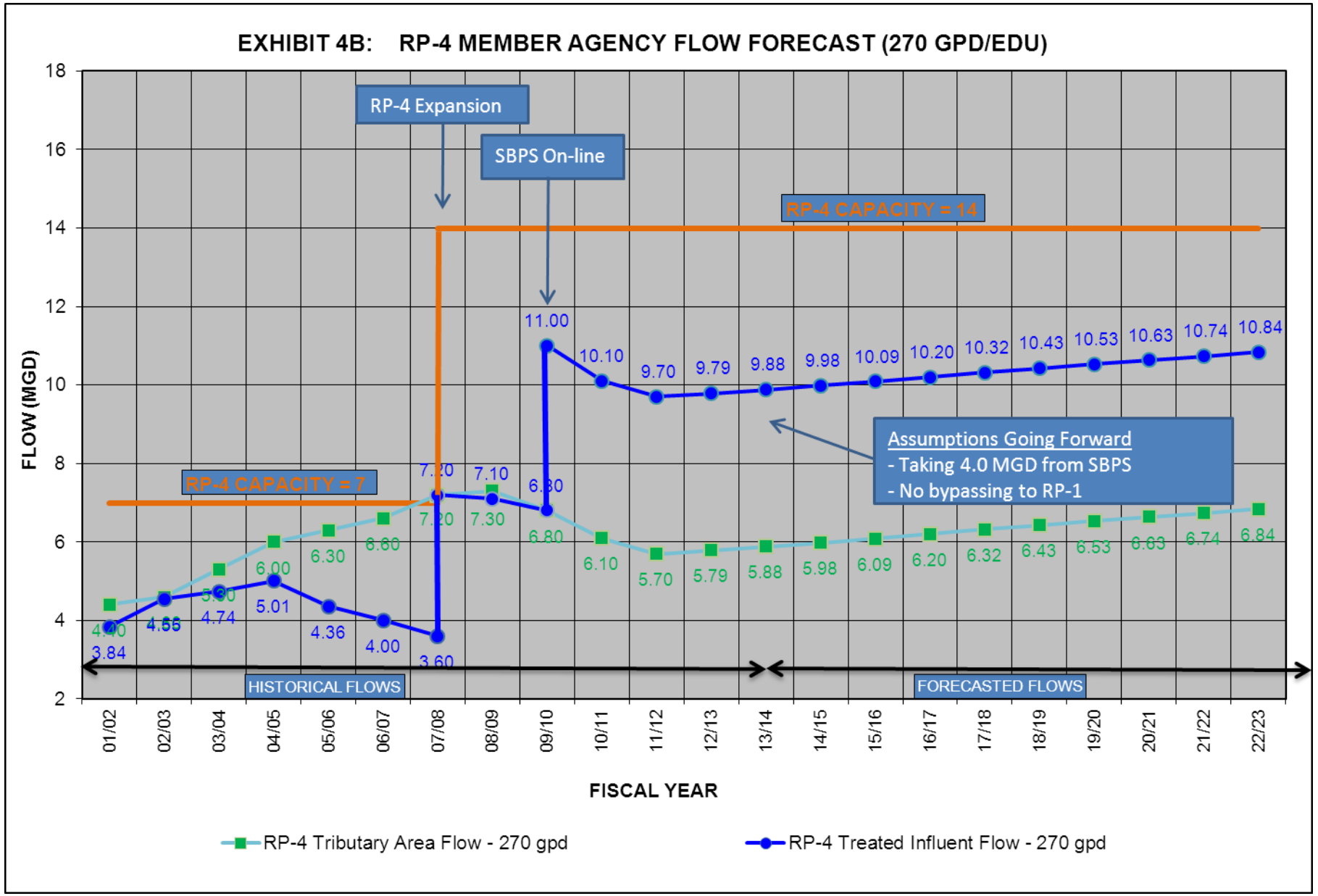

EXHIBIT 2C: CCWRF MEMBER AGENCY FLOW FORECAST (270 GPD/EDU)
FLOW (MGD)
FISCAL YEAR
CCWRF CAPACITY = 11.4
Reduce Bypassing from CCWRF to RP-5 by 1.5 MGD
Assumptions Going Forward:
- Minimal (0.5 MGD) bypass to RP-5 starting in FY13/14
- 0.4 MGD from the Preserve starting in FY14/15
- Natural CCWRF tributary area includes 3.5 MGD Montclair Splitter flows
- 2.0 MGD Montclair Splitter flows diverted to RP-1
HISTORICAL FLOWS
FORECASTED FLOWS
CCWRF Treated Influent Flow - 270
CCWRF Tributary Area Flow - 270

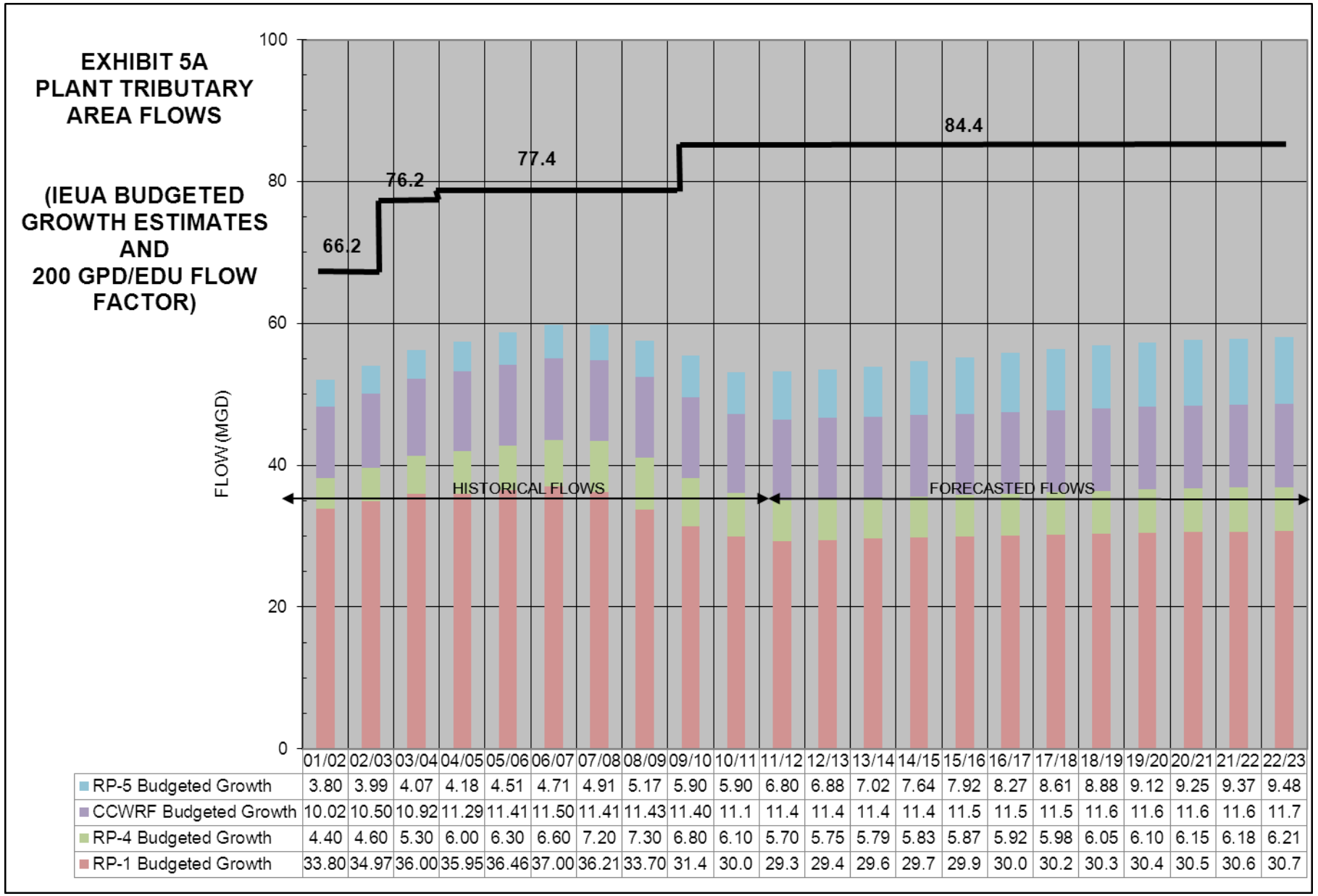

EXHIBIT 3A: RP-1 BUDGETARY FLOW FORECAST (200 GPD/EDU)
RP-1 CAPACITY = 44
Assumptions Going Forward
- 4.0 MGD from SBPS diverted to RP-4
- No bypass to RP-5
- No bypass from RP-4
- 2.0 MGD of Montclair splitter flows
HISTORICAL FLOWS
FORECASTED FLOWS
FLOW (MGD)
FISCAL YEAR
01/02 02/03 03/04 04/05 05/06 06/07 07/08 08/09 09/10 10/11 11/12 12/13 13/14 14/15 15/16 16/17 17/18 18/19 19/20 20/21 21/22 22/23
RP-1 Tributary Area Flow - 200 gpd
Treated Influent Flow - 200 gpd


EXHIBIT 3B: RP-1 MEMBER AGENCY FLOW FORECAST (270 GPD/EDU)
RP-1 CAPACITY = 44 MGD
Assumptions Going Forward:
- 4.0 MGD from SBPS diverted to RP-4
- No bypass to RP-5
- No bypass from RP-4
- 2.0 MGD of Montclair splitter flows
HISTORICAL FLOWS
FORECASTED FLOWS
FLOW (MGD)
FISCAL YEAR
01/02 02/03 03/04 04/05 05/06 06/07 07/08 08/09 09/10 10/11 11/12 12/13 13/14 14/15 15/16 16/17 17/18 18/19 19/20 20/21 21/22 22/23
RP-1 Tributary Area Flow - 270 gpd
RP-1 Treated Influent Flow - 270 gpd


EXHIBIT 3C: RP-1 MEMBER AGENCY FLOW FORECAST (270 GPD/EDU)
RP-1 CAPACITY = 44
Assumptions Going Forward
- 4.0 MGD from SBPS diverted to RP-4
- No bypass to RP-5
- No bypass from RP-4
- 2.0 MGD of Montclair splitter flows
- 2.0 MGD from WLPS diverted to RP-1 in FY15/16
Whispering Lakes Pump Station Start-Up
HISTORICAL FLOWS
FORECASTED FLOWS
FLOW (MGD)
FISCAL YEAR
RP-1 Tributary Area Flow - 270 gpd
RP-1 Treated Influent Flow - 270 gpd


EXHIBIT 4A: RP-4 BUDGETARY FLOW FORECAST (200 GPD/EDU)
RP-4 Expansion
SBPS On-line
RP-4 CAPACITY = 14
RP-4 CAPACITY = 7
Assumptions Going Forward
- 4.0 MGD from SBPS diverted to RP-4
- No bypass to RP-1
HISTORICAL FLOWS
FORECASTED FLOWS
FLOW (MGD)
FISCAL YEAR
01/02
02/03
03/04
04/05
05/06
06/07
07/08
08/09
09/10
10/11
11/12
12/13
13/14
14/15
15/16
16/17
17/18
18/19
19/20
20/21
21/22
22/23
RP-4 Tributary Area Flow - 200 gpd
RP-4 Treated Influent Flow - 200 gpd

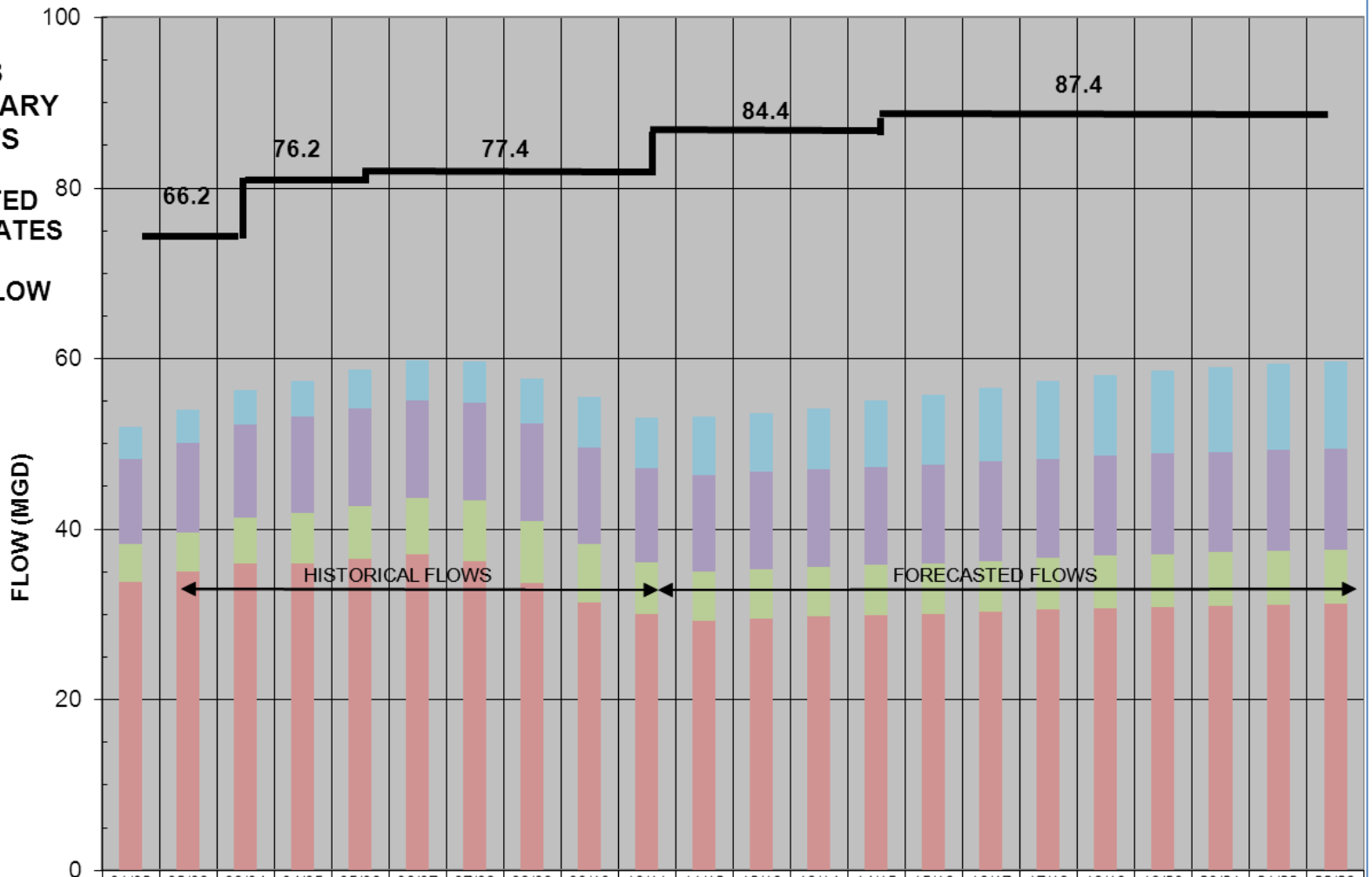

EXHIBIT 4B: RP-4 MEMBER AGENCY FLOW FORECAST (270 GPD/EDU)
RP-4 Expansion
SBPS On-line
RP-4 CAPACITY = 14
RP-4 CAPACITY = 7
Assumptions Going Forward
- Taking 4.0 MGD from SBPS
- No bypassing to RP-1
HISTORICAL FLOWS
FORECASTED FLOWS
FLOW (MGD)
FISCAL YEAR
01/02
02/03
03/04
04/05
05/06
06/07
07/08
08/09
09/10
10/11
11/12
12/13
13/14
14/15
15/16
16/17
17/18
18/19
19/20
20/21
21/22
22/23
RP-4 Tributary Area Flow - 270 gpd
RP-4 Treated Influent Flow - 270 gpd



	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
RP-5 Budgeted Growth	3.80	3.99	4.07	4.18	4.51	4.71	4.91	5.17	5.90	5.90	6.80	6.88	7.02	7.64	7.92	8.27	8.61	8.88	9.12	9.25	9.37	9.48
CCWRF Budgeted Growth	10.02	10.50	10.92	11.29	11.41	11.50	11.41	11.43	11.40	11.1	11.4	11.4	11.4	11.4	11.5	11.5	11.5	11.6	11.6	11.6	11.6	11.7
RP-4 Budgeted Growth	4.40	4.60	5.30	6.00	6.30	6.60	7.20	7.30	6.80	6.10	5.70	5.75	5.79	5.83	5.87	5.92	5.98	6.05	6.10	6.15	6.18	6.21
RP-1 Budgeted Growth	33.80	34.97	36.00	35.95	36.46	37.00	36.21	33.70	31.4	30.0	29.3	29.4	29.6	29.7	29.9	30.0	30.2	30.3	30.4	30.5	30.6	30.7

EXHIBIT 5B
PLANT TRIBUTARY AREA FLOWS

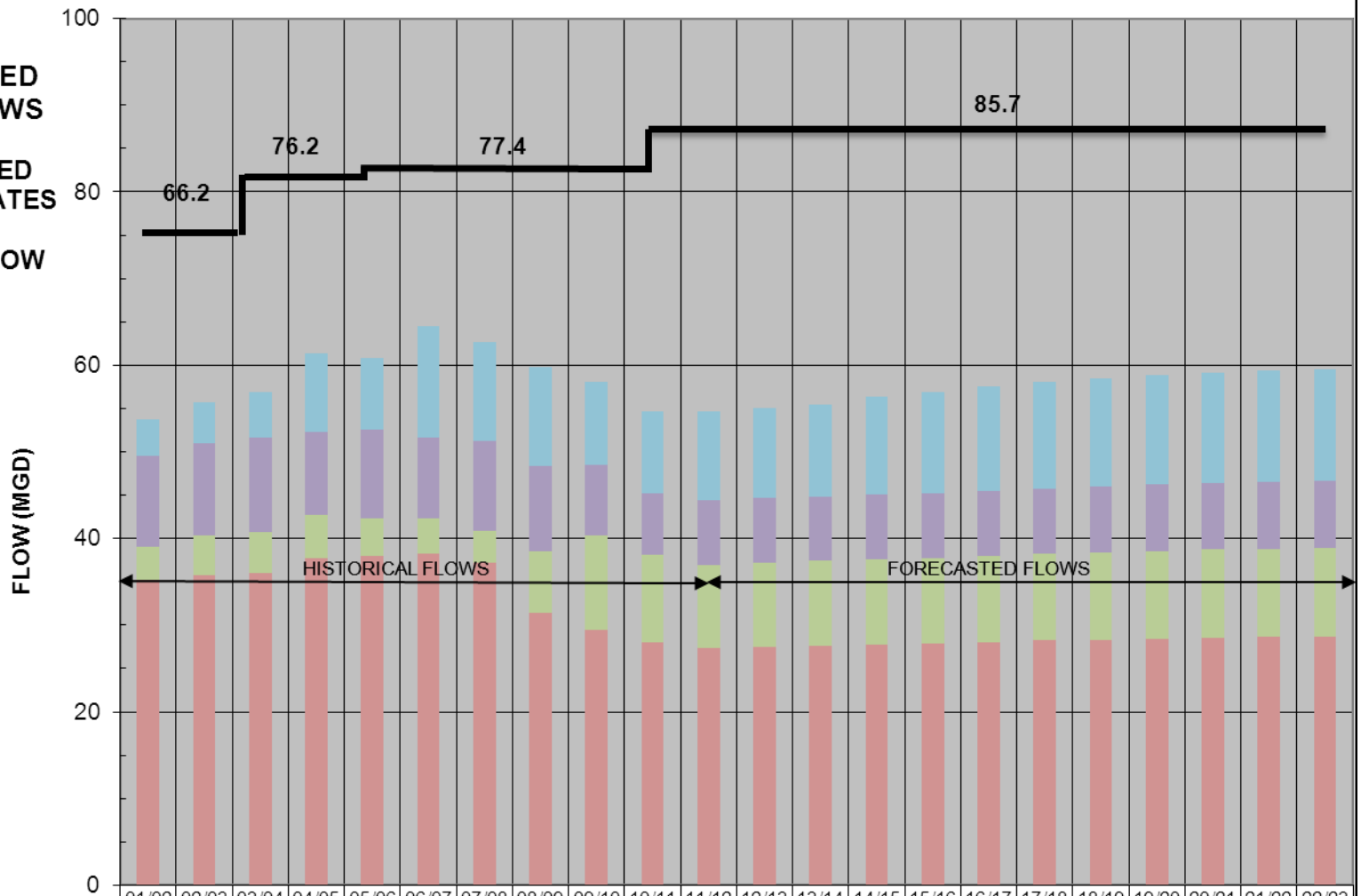
(IEUA BUDGETED GROWTH ESTIMATES AND 270 GPD/EDU FLOW FACTOR)



	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
RP-5 High Scenario	3.80	3.99	4.07	4.18	4.51	4.71	4.91	5.17	5.90	5.90	6.80	6.91	7.09	7.80	8.17	8.65	9.10	9.47	9.79	9.96	10.12	10.28
CCWRF High Scenario	10.02	10.50	10.92	11.29	11.41	11.50	11.41	11.43	11.40	11.10	11.40	11.41	11.45	11.49	11.54	11.61	11.66	11.70	11.74	11.76	11.78	11.80
RP-4 High Scenario	4.40	4.60	5.30	6.00	6.30	6.60	7.20	7.30	6.80	6.10	5.70	5.76	5.82	5.87	5.93	6.00	6.08	6.17	6.24	6.31	6.35	6.39
RP-1 High Scenario	33.80	34.97	36.00	35.95	36.46	37.00	36.21	33.70	31.40	30.00	29.30	29.54	29.73	29.93	30.11	30.31	30.53	30.70	30.86	31.00	31.11	31.21

EXHIBIT 5C
PLANT TREATED INFLUENT FLOWS

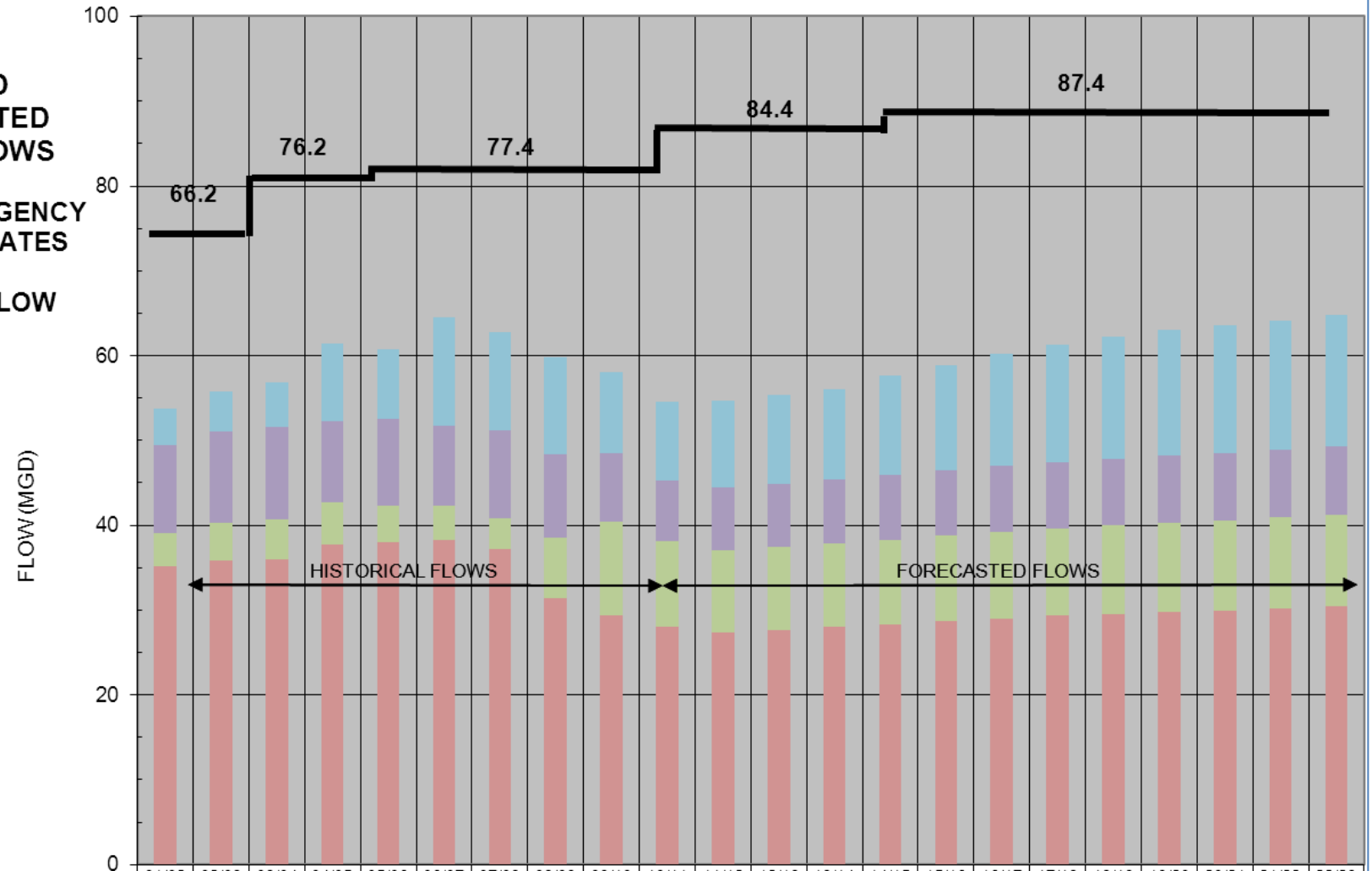
(IEUA BUDGETED GROWTH ESTIMATES AND 200 GPD/EDU FLOW FACTOR)



	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
RP-5 Budgeted - Adjusted	4.19	4.70	5.27	9.12	8.26	12.81	11.50	11.40	9.60	9.40	10.30	10.38	10.61	11.29	11.64	11.98	12.25	12.49	12.62	12.73	12.85	12.85
CCWRF Budgeted - Adjusted	10.46	10.66	10.86	9.54	10.17	9.39	10.41	9.90	8.10	7.10	7.40	7.41	7.43	7.46	7.51	7.55	7.59	7.62	7.65	7.67	7.68	7.70
RP-4 Budgeted - Adjusted	3.84	4.55	4.74	5.01	4.36	4.00	3.60	7.10	11.00	10.10	9.70	9.75	9.79	9.83	9.87	9.92	9.98	10.05	10.10	10.15	10.18	10.21
RP-1 Budgeted - Adjusted	35.20	35.80	36.01	37.74	38.00	38.28	37.21	31.40	29.40	28.00	27.30	27.48	27.62	27.77	27.90	28.05	28.21	28.34	28.45	28.56	28.64	28.71

EXHIBIT 5D
PLANT TREATED INFLUENT FLOWS

(IEUA MEMBER AGENCY GROWTH ESTIMATES AND 270 GPD/EDU FLOW FACTOR)



	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
RP-5 High Scenario	4.19	4.70	5.27	9.12	8.26	12.81	11.50	11.40	9.60	9.40	10.30	10.47	10.76	11.74	12.47	13.22	13.86	14.32	14.76	15.00	15.24	15.47
CCWRF High Scenario	10.46	10.66	10.86	9.54	10.17	9.39	10.41	9.90	8.10	7.10	7.40	7.42	7.47	7.55	7.66	7.76	7.83	7.89	7.94	7.97	7.99	8.01
RP-4 High Scenario	3.84	4.55	4.74	5.01	4.36	4.00	3.60	7.10	11.00	10.10	9.70	9.79	9.88	9.98	10.09	10.20	10.32	10.43	10.53	10.63	10.74	10.84
RP-1 High Scenario	35.20	35.80	36.01	37.74	38.00	38.28	37.21	31.40	29.40	28.00	27.30	27.66	27.97	28.34	28.69	29.00	29.32	29.54	29.74	29.96	30.18	30.40

APPENDIX A

INCREMENTAL EDU GROWTH DATA

INCREMENTAL EDU GROWTH BY AGENCY/FACILITY (EDUs / YR)									
AGENCY	**YEAR**	**RP-1**	**RP-4**	**RP-1/RP-4**	**CCWRF**	**RP-1/5**	**RP-2/RP-5**	**RP-5**	**INCREMENTAL GROWTH**
CVWD	13/14	200	164	-	-	-	-	-	364
	14/15	200	164	-	-	-	-	-	364
	15/16	186	178	-	-	-	-	-	364
	16/17	186	178	-	-	-	-	-	364
	17/18	186	178	-	-	-	-	-	364
	18/19	171	193	-	-	-	-	-	364
	19/20	169	195	-	-	-	-	-	364
	20/21	169	195	-	-	-	-	-	364
	21/22	169	195	-	-	-	-	-	364
	22/23	169	195	-	-	-	-	-	364
	Ten-Yr Total	**1,805**	**1,835**	**0**	**0**	**0**	**0**	**0**	**3,640**
Fontana	13/14	178	185	0	-	-	-	-	363
	14/15	193	201	0	-	-	-	-	394
	15/16	207	217	0	-	-	-	-	424
	16/17	237	247	0	-	-	-	-	484
	17/18	237	247	0	-	-	-	-	484
	18/19	207	217	0	-	-	-	-	424
	19/20	178	185	0	-	-	-	-	363
	20/21	178	185	0	-	-	-	-	363
	21/22	178	185	0	-	-	-	-	363
	22/23	178	185	0	-	-	-	-	363
	Ten-Yr Total	**1,971**	**2,054**	**0**	**0**	**0**	**0**	**0**	**4,025**
Montclair	13/14	332	-	-	20	-	-	-	352
	14/15	194	-	-	4	-	-	-	198
	15/16	30	-	-	4	-	-	-	34
	16/17	30	-	-	4	-	-	-	34
	17/18	30	-	-	4	-	-	-	34
	18/19	30	-	-	4	-	-	-	34
	19/20	30	-	-	4	-	-	-	34
	20/21	30	-	-	4	-	-	-	34
	21/22	30	-	-	4	-	-	-	34
	22/23	30	-	-	4	-	-	-	34
	Ten-Yr Total	**766**	**0**	**0**	**56**	**0**	**0**	**0**	**822**
Ontario	13/14	350	-	-	-	-	-	750	1,100
	14/15	400	-	-	-	-	-	1750	2,150
	15/16	400	-	-	-	-	-	2300	2,700
	16/17	300	-	-	-	-	-	2350	2,650

	17/18	250	-	-	-	-	-	1800	2,050
	18/19	250	-	-	-	-	-	1200	1,450
	19/20	250	-	-	-	-	-	1200	1,450
	20/21	250	-	-	-	-	-	600	850
	21/22	250	-	-	-	-	-	600	850
	22/23	250	-	-	-	-	-	600	850
	Ten-Yr Total	**2,950**	**0**	**0**	**0**	**0**	**0**	**13,150**	**16,100**
Upland	13/14	105	-	-	96	-	-	-	201
	14/15	376	-	-	77	-	-	-	453
	15/16	457	-	-	168	-	-	-	625
	16/17	410	-	-	242	-	-	-	652
	17/18	482	-	-	155	-	-	-	637
	18/19	137	-	-	160	-	-	-	297
	19/20	135	-	-	144	-	-	-	279
	20/21	175	-	-	35	-	-	-	210
	21/22	196	-	-	33	-	-	-	229
	22/23	196	-	-	33	-	-	-	229
	Ten-Yr Total	**2,669**	**0**	**0**	**1,143**	**0**	**0**	**0**	**3,812**
Chino	13/14	5	-	-	27	-	0	240	272
	14/15	0	-	-	27	-	0	400	427
	15/16	0	-	-	27	-	0	340	367
	16/17	0	-	-	27	-	0	240	267
	17/18	0	-	-	27	-	0	245	272
	18/19	0	-	-	27	-	0	245	272
	19/20	0	-	-	27	-	0	245	272
	20/21	0	-	-	27	-	0	245	272
	21/22	0	-	-	27	-	0	245	272
	22/23	0	-	-	27	-	0	245	272
	Ten-Yr Total	**5**	**0**	**0**	**270**	**0**	**0**	**2,690**	**2,965**
Chino Hills	13/14	-	-	-	70	-	-	265	335
	14/15	-	-	-	175	-	-	145	320
	15/16	-	-	-	200	-	-	160	360
	16/17	-	-	-	95	-	-	170	265
	17/18	-	-	-	80	-	-	340	420
	18/19	-	-	-	30	-	-	280	310
	19/20	-	-	-	24	-	-	155	179
	20/21	-	-	-	22	-	-	70	92
	21/22	-	-	-	10	-	-	25	35
	22/23	-	-	-	10	-	-	25	35
	Ten-Yr Total	**0**	**0**	**0**	**716**	**0**	**0**	**1,635**	**2,351**

APPENDIX B

PROPOSED CAPITAL PROJECTS SUMMARY

Administrative Services Fund - GG - 10200

Project #	Project Description	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total TYCIP 2013-2023
Existing Projects												
EN11010	Headquarters Central Plant Improvements	312,306	-	-	-	-	-	-	-	-	-	312,306
FP10200	Financial Planning Forecast GG Fund	-	330,000	630,500	669,000	750,000	750,000	750,000	750,000	750,000	750,000	6,129,500
IS10025	SAP Public Sector Budget Prep Applicatio	-	-	-	200,000	-	-	-	-	-	-	200,000
IS11010	Business Network Tape Drive Replace	40,000	-	-	-	-	-	-	-	-	-	40,000
IS13006	eProcure-to-Pay	320,000	-	-	-	-	-	-	-	-	-	320,000
IS13010	Laser Printer Replacement - Forecast	13,500	13,500	13,500	13,500	-	-	-	-	-	-	54,000
IS13030	Server Replacement - Biz Net Forecast	46,000	82,000	-	-	-	-	-	-	-	-	128,000
IS13040	Workstation Replacement Biz Forecast	75,000	72,500	70,000	67,500	-	-	-	-	-	-	285,000
IS13090	Network Switch Replacement Biz Forecast	52,000	52,000	36,000	-	-	-	-	-	-	-	140,000
IS14101	Event/Sadie Room Replace Projectors	11,200	-	-	-	-	-	-	-	-	-	11,200
IS14102	Board Room A/V Equip Replacement	110,000	-	-	-	-	-	-	-	-	-	110,000
	Existing Project Total	***980,006***	***550,000***	***750,000***	***950,000***	***750,000***	***750,000***	***750,000***	***750,000***	***750,000***	***750,000***	***7,730,006***
New Projects												
EC14005	CCTV Camera Equipment Truck	240,000	-	-	-	-	-	-	-	-	-	240,000
EC14006	Replacement Truck	60,000	-	-	-	-	-	-	-	-	-	60,000
EN14002	Website Enhancements (CIPO)	35,000	-	-	-	-	-	-	-	-	-	35,000
EN14003	MC2 Estimating Software	50,000	-	-	-	-	-	-	-	-	-	50,000
IS14002	Records Management Scanner - Business Network	-	8,000	-	-	-	-	-	-	-	-	8,000
IS14003	Server Replacement Project - Business Network	-	155,000	-	-	-	-	-	-	-	-	155,000
IS14013	Board Room A/V Equipment Replacement	-	-	202,000	-	-	-	-	-	-	-	202,000
IS14014	Replace Sadie RM A/V System	-	-	30,500	-	-	-	-	-	-	-	30,500
IS14015	Replace Event Room DLP	-	-	35,500	-	-	-	-	-	-	-	35,500
IS14016	Wireless Access Points - Business Network	40,000	-	-	-	-	-	-	-	-	-	40,000
IS14017	Switch/router replacement - Business Network	25,000	-	-	-	-	-	-	-	-	-	25,000
IS14018	Maintenance Scheduling Optimization Project	145,000	-	-	-	-	-	-	-	-	-	145,000
IS14019	Maintenance Mobility Project	320,000	-	-	-	-	-	-	-	-	-	320,000
IS14020	SCADA/SAP Interface	-	185,000	-	-	-	-	-	-	-	-	185,000
IS14021	Workstation Replacement - Business Network	80,000	-	-	-	-	-	-	-	-	-	80,000
IS14022	Software Licenses - Business Network	28,000	-	-	-	-	-	-	-	-	-	28,000
IS14023	Intrusion Prevention System (IPS) for Internet	18,000	-	-	-	-	-	-	-	-	-	18,000
IS14024	Laser Printer Replacement - Business Network	15,000	-	-	-	-	-	-	-	-	-	15,000
IS14025	Finance Process/SAP Functional Analysis & Roadmap	26,000	-	-	-	-	-	-	-	-	-	26,000
IS15001	HCM Phase 2 - Self Service/HR Process Automation	-	191,000	-	-	-	-	-	-	-	-	191,000
IS15002	Document/Records Management Analysis & Roadmap	-	40,500	-	-	-	-	-	-	-	-	40,500
IS15003	Document/Records Management System	-	350,000	-	-	-	-	-	-	-	-	350,000
IS15004	Executive Dashboard Project	-	45,000	-	-	-	-	-	-	-	-	45,000
IS16001	HCM Phase 2 - Position Budgeting & Control	-	-	206,000	-	-	-	-	-	-	-	206,000
IS16002	Project-Grant Process Analysis/Roadmap	-	-	31,500	-	-	-	-	-	-	-	31,500
IS16003	SAP Archiving	-	-	50,000	-	-	-	-	-	-	-	50,000
MM14001	Asset Health Monitoring Project	350,000	-	-	-	-	-	-	-	-	-	350,000
	New Project Total	***1,432,000***	***974,500***	***555,500***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***2,962,000***
Administrative Services (GG) Total		**2,412,006**	**1,524,500**	**1,305,500**	**950,000**	**750,000**	**750,000**	**750,000**	**750,000**	**750,000**	**750,000**	**10,692,006**

Groundwater Recharge Fund - RW - 10300

Project #	Project Description	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total TYCIP 2013-2023
Existing Projects												
EN12025	Hickory Basin - Arizona Crossing	100,000	-	-	-	-	-	-	-	-	-	100,000
WR13022	Prado Basin Habitat Well Monitoring	50,000	-	-	-	-	-	-	-	-	-	50,000
	Existing Project Total	***150,000***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***150,000***
New Projects												
EN14038	CB20 Noise Mitigation Measures	160,000	-	-	-	-	-	-	-	-	-	160,000
EN14040	Jurupa Pump Station	300,000	-	-	-	-	-	-	-	-	-	300,000
	New Project Total	***460,000***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***460,000***
Groundwater Recharge (RW) Total		**610,000**	-	-	-	-	-	-	-	-	-	**610,000**

Non-Reclaimable Wastewater Fund - NC - 10500

Project #	Project Description	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total TYCIP 2013-2023
Existing Projects												
EC14009	CSDLAC Capital Replacement 4Rs	1,008,323	1,179,062	1,088,575	1,400,000	1,400,000	1,400,000	1,400,000	1,400,000	1,400,000	1,400,000	13,075,960
EN07011	NRW System Upgrades	-	-	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	4,000,000
EN11034	NRW Collection System Repairs Phase 3	537,533	-	-	-	-	-	-	-	-	-	537,533
EN11035	Philadelphia Pump Station Upgrades	802,654	-	-	-	-	-	-	-	-	-	802,654
EN13021	Philly PS Wet Well Condition Assessment	16,973	-	-	-	-	-	-	-	-	-	16,973
EN13042	Philly Pump Station Communication System	150,000	-	-	-	-	-	-	-	-	-	150,000
	Existing Project Total	***2,515,483***	***1,179,062***	***1,588,575***	***1,900,000***	***1,900,000***	***1,900,000***	***1,900,000***	***1,900,000***	***1,900,000***	***1,900,000***	***18,583,120***
New Projects												
EC14003	Field Tablets & Printers	6,000	-	-	-	-	-	-	-	-	-	6,000
EN14008	NRW Conn & Emergency Projects	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	1,000,000
EN14011	CM Misc. NRWs Construction & Emergency Proj	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	2,500,000
EN14036	Cleanouts for Philadephia Pump Station Force Main	250,000	400,000	-	-	-	-	-	-	-	-	650,000
EN14035	22 Inch Manholes Along NSNT Rehab	250,000	600,000	-	-	-	-	-	-	-	-	850,000
	New Project Total	***856,000***	***1,350,000***	***350,000***	***350,000***	***350,000***	***350,000***	***350,000***	***350,000***	***350,000***	***350,000***	***5,006,000***
Non-Reclaimable Wastewater (NC) Total		**3,371,483**	**2,529,062**	**1,938,575**	**2,250,000**	**2,250,000**	**2,250,000**	**2,250,000**	**2,250,000**	**2,250,000**	**2,250,000**	**23,589,120**

Recycled Water Fund - WC - 10600

Project #	Project Description	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total TYCIP 2013-2023
Existing Projects												
EN06025	Wineville Ext Recy Wtr Piplne Seg A	8,000,000	5,378,155	569,329	-	-	-	-	-	-	-	13,947,484
EN07010	CCWRF RW Pump Station Expansion	3,750,000	900,000	400,000	400,000	-	-	-	-	-	-	5,450,000
EN08018	1630 W. Recycled Water Pipeline Segment	500,000	-	-	-	-	-	-	-	-	-	500,000
EN09003	1630 W. Recycled Water Pipeline Segment	25,000	-	-	-	-	-	-	-	-	-	25,000
EN09007	1630 E Pipeline Seg B & 1630 E Resrvoir	-	-	-	-	-	-	662,500	3,812,500	925,000	-	5,400,000
EN11030	Northwest Communication Towers	10,000	-	-	-	-	-	-	-	-	-	10,000
EN11048	1630 W. Pump Station Communication Tower	10,000	-	-	-	-	-	-	-	-	-	10,000
EN11050	Turner Basin Turnout Capacity Improvemen	20,000	-	-	-	-	-	-	-	-	-	20,000
EN12014	East Avenue 1630 E RWP Relocation	470,371	-	-	-	-	-	-	-	-	-	470,371
EN12016	North CIM Lateral	210,000	-	-	-	-	-	-	-	-	-	210,000
EN12019	GWR and RW SCADA System Upgrades	781,657	1,626,575	25,000	-	-	-	-	-	-	-	2,433,232
EN13001	San Sevaine Basin Improvements	1,700,000	777,314	25,000	-	-	-	-	-	-	-	2,502,314
EN13022	930 Zone RW Reservoir Construction	5,100,000	2,500,000	25,000	-	-	-	-	-	-	-	7,625,000
EN13023	930 Zone RW Pipeline Construction	6,100,000	525,000	-	-	-	-	-	-	-	-	6,625,000
EN13025	800 Zone Flow Meter Installation	25,000	-	-	-	-	-	-	-	-	-	25,000
EN13029	Turner 1 Turnout & Deer Creek Drop-Inlet	800,000	25,000	-	-	-	-	-	-	-	-	825,000
EN13031	Wineville Proof of Concept	200,000	-	-	-	-	-	-	-	-	-	200,000
EN13032	1630 E RW Pipeline - Corrosion Repairs	18,000	-	-	-	-	-	-	-	-	-	18,000
EN13036	Redevelop of the Monitoring Well MW-VCT2	60,000	-	-	-	-	-	-	-	-	-	60,000
EN13038	RP-1 Outfall Relocation	2,000,000	-									2,000,000
EN13040	Prado Dechlor Communication System	150,000	-	-	-	-	-	-	-	-	-	150,000
EN13041	RP-5 RW PS Process Control Sys Migration	260,000	-	-	-	-	-	-	-	-	-	260,000
EN13045	Wineville RW Extension Segment B	7,000,000	4,900,000	25,000	-	-	-	-	-	-	-	11,925,000
EN13048	RP-1 RW Electrical Feed Upgrade	973,982										973,982
EN19002	800 Zone Reservoir	-	-	-	-	-	-	500,000	2,500,000	400,000	-	3,400,000
EN19003	RP-1 Outfall Parallel Line FY13/14	-	-	-	-	-	-	500,000	4,000,000	1,200,000	-	5,700,000
WR08020	Recycled Water Misc Connections and Retr	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	5,000,000
WR08032	1630 W. Recycled Water Pump Station	50,000	-	-	-	-	-	-	-	-	-	50,000
WR11017	Turner Basin Recharge Improvements	1,100,000	25,000	-	-	-	-	-	-	-	-	1,125,000
WR11018	Northwest Recycled Water SCADA Upgrades	10,000	-	-	-	-	-	-	-	-	-	10,000
EN13051	1630 E RW Pipeline Surge Tank Rpclmnt	10,000	-	-	-	-	-	-	-	-	-	10,000
	Existing Project Total	***39,834,010***	***17,157,044***	***1,569,329***	***900,000***	***500,000***	***500,000***	***2,162,500***	***10,812,500***	***3,025,000***	***500,000***	***76,960,383***
New Projects												
EN14007	Misc Recycled Water Projects	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	2,000,000
EN14010	CM Misc. RW Construction & Emergency Proj	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	2,500,000
EN14028	Vulcan Basin Development	100,000	100,000	100,000	887,500	3,525,000	1,050,000	237,500	-	-	-	6,000,000
EN15002	1158 Reservoir Site Cleanup	-	200,000	25,000	-	-	-	-	-	-	-	225,000
EN20001	Lower Day Basin Pipeline	-	-	-	-	-	-	300,000	2,000,000	200,000	25,000	2,525,000
EN20003	Montclair Basin Pipeline	-	-	-	-	-	-	200,000	1,000,000	300,000	-	1,500,000
EN20004	Brooks Basin Improvements	-	-	-	-	-	-	200,000	700,000	-	-	900,000
EN20005	EN20005 800 PZ Pipeline Bottleneck	-	-	-	-	-	-	150,000	500,000	300,000	350,000	1,300,000
EN21001	Upland Basin Pipeline	-	-	-	-	-	-	-	500,000	300,000	2,200,000	3,000,000
EP14005	400 HP Variable Frequency Drive (VFD) RP-1 Zone 2B Pu	75,000	-	-	-	-	-	-	-	-	-	75,000
LB14002	ICP-MS	220,000	-	-	-	-	-	-	-	-	-	220,000
EN20002	Etiwanda Debris Basin Berm	-	-	-	-	-	-	200,000	300,000	-	-	500,000
EN16009	CCWRF RW Flow Equalization	-	-	500,000	-	-	-	-	-	-	-	500,000
EN16010	RP-5 RWPS Modification Controls	-	-	500,000	-	-	-	-	-	-	-	500,000
EN14041	RP-4 1158 & 1299 RWPS Upgrades	100,000	500,000	2,475,000	925,000	-	-	-	-	-	-	4,000,000
EN14042	RP-4 1158 RWPS Upgrades	150,000	500,000	3,000,000	350,000	-	-	-	-	-	-	4,000,000
EN14043	RP-5 Pipeline Bottleneck	150,000	500,000	300,000	350,000	-	-	-	-	-	-	1,300,000
	New Project Total	***1,245,000***	***2,250,000***	***7,350,000***	***2,962,500***	***3,975,000***	***1,500,000***	***1,737,500***	***5,450,000***	***1,550,000***	***3,025,000***	***31,045,000***
Recycled Water (WC) Total		**41,079,010**	**19,407,044**	**8,919,329**	**3,862,500**	**4,475,000**	**2,000,000**	**3,900,000**	**16,262,500**	**4,575,000**	**3,525,000**	**108,005,383**

Regional Operations and Maintenance Fund - RO - 10800

Project #	Project Description	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total TYCIP 2013-2023
Existing Projects												
EN08023	RP-1 Asset Replacement	500,000	-	-	-	-	-	-	-	-	-	500,000
EN09021	RP-4 Headworks Retrofit	650,000	-	-	-	-	-	-	-	-	-	650,000
EN10012	RP-1 Fuel Cell	150,000	-	-	-	-	-	-	-	-	-	150,000
EN12018	CCWRF Secondary Clarifier No.2 Rehab.	649,828	-	-	-	-	-	-	-	-	-	649,828
EN13016	SCADA Enterprise System	850,000	2,000,000	2,500,000	2,500,000	2,000,000	-	-	-	-	-	9,850,000
EN13020	RP-2 Digester No. 4 Dome Guides Repair	56,896	-	-	-	-	-	-	-	-	-	56,896
EN13049	RP-2 Digester #4 Dome Replacement	1,800,000										1,800,000
EP13001	RP2 Digester Cleaning	320,000	320,000	320,000	320,000	320,000	320,000	320,000	320,000	320,000	-	2,880,000
EP13002	Major Facilities Repair/ Replacement	-	700,000	700,000	700,000	700,000	700,000	700,000	700,000	700,000	-	5,600,000
IS13050	Network Switch Repl -Fore Plant Net	75,000	75,000	50,000	-	-	-	-	-	-	-	200,000
IS13060	UPS Replacement Forecast - PAC	33,500	33,500	33,500	-	-	-	-	-	-	-	100,500
IS13070	Server Replace-Plant Auto FORECAST	46,000	25,200	45,500	45,500	-	-	-	-	-	-	162,200
IS13080	Workstation Replace Fore-PAC Net	16,000	15,500	15,000	14,500	-	-	-	-	-	-	61,000
EN13054	Montclair Lift Station Upgrades	1,600,000	584,356	-	-	-	-	-	-	-	-	2,184,356
	Existing Project Total	***6,747,224***	***3,753,556***	***3,664,000***	***3,580,000***	***3,020,000***	***1,020,000***	***1,020,000***	***1,020,000***	***1,020,000***	-	***24,844,780***
New Projects												
EN14012	RP-2 Drying Beds Rehabilitation	90,000	510,000	-	-	-	-	-	-	-	-	600,000
EN14021	RP-1 Secondary Clarifier Asset Rehab	800,000	1,000,000	1,000,000	1,000,000	1,000,000	500,000	-	-	-	-	5,300,000
EN14024	CM Misc. RO Construction & Emergency Proj	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	2,500,000
EN14025	Misc RO Constr. & Emerg Proj	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	2,500,000
EN14027	CCWRF Secondary Clarifier No. 3 Rehab	100,000	900,000	-	-	-	-	-	-	-	-	1,000,000
EN16007	Facility Projects - RO (Previously in RC)	-	-	4,000,000	-	1,550,000	6,450,000	6,850,000	-	-	-	18,850,000
EN16008	Facility Projects - RO	-	-	5,200,000	5,475,000	4,750,000	4,750,000	9,250,000	9,250,000	9,250,000	9,250,000	57,175,000
EP14002	Major Facilities Repairs/Replacements	1,500,000	-	-	-	-	-	-	-	-	-	1,500,000
IS14004	Server Replacement Project - PAC Network	52,000	-	-	-	-	-	-	-	-	-	52,000
IS14005	Sharepoint - PAC Network	-	25,000	-	-	-	-	-	-	-	-	25,000
IS14007	Software Licenses - PAC Network	28,000	-	-	-	-	-	-	-	-	-	28,000
IS14008	Core Switch RP1 - PAC Network	45,000	-	-	-	-	-	-	-	-	-	45,000
IS14009	SB Lift Panel View (2) Disaster Recovery/Standardizatior	-	-	-	35,000	-	-	-	-	-	-	35,000
IS14010	Replace PLC-5 rack solution w/ControlLogix Rack and PL	80,000	-	-	-	-	-	-	-	-	-	80,000
IS14011	PACNet-Replace L55 Processors	22,000	-	-	-	-	-	-	-	-	-	22,000
IS14012	Switch/router replacement - PAC Network	75,000	-	-	-	-	-	-	-	-	-	75,000
IS14026	Workstation Replacement - PAC Network	10,500	-	-	-	-	-	-	-	-	-	10,500
PA14003	Replace Filter Cloth Socks on four Disc Filter Units at RP-	80,000	-	-	-	-	-	-	-	-	-	80,000
IS16004	Operations Data Management System	-	-	450,000	-	-	-	-	-	-	-	450,000
	New Project Total	***3,382,500***	***2,935,000***	***11,150,000***	***7,010,000***	***7,800,000***	***12,200,000***	***16,600,000***	***9,750,000***	***9,750,000***	***9,750,000***	***90,327,500***
Regional Wastewater - Operations (RO) Total		**10,129,724**	**6,688,556**	**14,814,000**	**10,590,000**	**10,820,000**	**13,220,000**	**17,620,000**	**10,770,000**	**10,770,000**	**9,750,000**	**115,172,280**

Regional Capital Improvement Fund - RC - 10900

Project #	Project Description	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total TYCIP 2013-2023
Existing Projects												
EN04018	Engineering-As-Builting	156,787	-	-	-	-	-	-	-	-	-	156,787
EN05050	RP2 Digester Gas Sys Modifications	300,000	-	-	-	-	-	-	-	-	-	300,000
EN06015	RP1 Dewatering Facility Expansion	5,207	-	-	-	-	-	-	-	-	-	5,207
EN08002	RP-1,RP-2,CarbCny O&M Manual	-	-	-	500,000	495,998	415,516	-	-	-	-	1,411,514
EN08009	New Operations Laboratory	-	-	1,100,000	10,000,000	4,000,000	-	-	-	-	-	15,100,000
EN09023	RP-5 SHF/REEP Independent Review	150,000	-	-	-	-	-	-	-	-	-	150,000
EN11027	Headquarters Repairs and Drainage Improv	20,000	20,000	-	-	-	-	-	-	-	-	40,000
EN11031	RP-5 Flow Equalization and Effluent Moni	550,000	50,000	-	-	-	-	-	-	-	-	600,000
EN11036	HVAC & Server Room Fire Suppression Impr	1,200,000	600,000	300,000	-	-	-	-	-	-	-	2,100,000
EN11039	TP-1 Disinfection Pump Improvements	531,117	-	-	-	-	-	-	-	-	-	531,117
EN11042	RP1/RP2 Boiler Replacements	300,000	-	-	-	-	-	-	-	-	-	300,000
EN11051	Central Plant for the New Operations Lab	700,000	-	-	-	-	-	-	-	-	-	700,000
EN12020	Chino Creek Invert Repair	250,000	-	-	-	-	-	-	-	-	-	250,000
EN12021	RP-5 Pond/Drainage Improvements	316,383	-	-	-	-	-	-	-	-	-	316,383
EN12022	RP-1 Aeration Ducting	848,000	-	-	-	-	-	-	-	-	-	848,000
EN12027	Ramona Ave Siphon Lining & Manholes	190,517	-	-	-	-	-	-	-	-	-	190,517
EN13017	RP-2 Drying Beds Drainage Improvments	51,700	-	-	-	-	-	-	-	-	-	51,700
EN13018	CCWRF Odor Control System Replacement	250,000	-	1,250,000	1,500,000	-	-	-	-	-	-	3,000,000
EN13024	Mountain Avenue Improvements	470,000	-	-	-	-	-	-	-	-	-	470,000
EN13043	Montclair Lift Stn Communication System	150,000	-	-	-	-	-	-	-	-	-	150,000
EN13046	RP-1/RP-2 Flare Replacement	600,000	1,000,000									1,600,000
EN13047	RP-5 Standby Generators Control Mods	50,000										50,000
IS10011	Future DCS Initiatives	50,000	150,000	-	-	-	-	-	-	-	-	200,000
IS12001	Upgrade DCS Foxboro I/A to Infusion (Won	100,000	100,000	-	-	-	-	-	-	-	-	200,000
IS12002	Upgrade DCS AIM Historian to InSQL	100,000	-	-	-	-	-	-	-	-	-	100,000
LB14001	GC Pesticides Wastewater	100,000	-	-	-	-	-	-	-	-	-	100,000
SR12001	Agency Wide Security Equipment Upgrade	30,000	30,000	-	-	-	-	-	-	-	-	60,000
EN13050	RP4 Power Distribution Assessment & Repair	10,000										10,000
EN13053	RP-2 Splitter Box Gate Replacement	30,000										30,000
	Existing Project Total	***7,509,711***	***1,950,000***	***2,650,000***	***12,000,000***	***4,495,998***	***415,516***	***-***	***-***	***-***	***-***	***29,021,225***
New Projects												
EN14006	Misc WW Construction & Emergency Projects	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	2,500,000
EN14009	CM Misc. RC Construction & Emergency Proj	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	2,500,000
EN14016	RP-5 New Emergency Basin Pump Station	-	150,000	800,000	800,000	-	-	-	-	-	-	1,750,000
EN14017	RP-5 Anoxic Mixers, Filter Backwash PS & Alum System I	-	-	315,000	1,785,000	-	-	-	-	-	-	2,100,000
EN14018	RP-4 Process Improvements	240,000	1,360,000	-	-	-	-	-	-	-	-	1,600,000
EN14019	RP-1 Headworks Rehabilatation Project	725,000	1,000,000	-	4,500,000	4,500,000	-	-	-	-	-	10,725,000
EN14020	RP-1 Sludge Thickening System Improvement	250,000	1,000,000	600,000	3,300,000	3,300,000	-	-	-	-	-	8,450,000
EN14300	Regional Sewer Special Projects	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	1,000,000
EN18003	RP-2 Flare Replacement	-	-	-	-	-	500,000	1,500,000	-	-	-	2,000,000
EP14004	Agency Wide Chlorine Residual Analyzer Replacement	200,000	160,000	-	-	-	-	-	-	-	-	360,000
IS14006	Network Time Appliance - PAC Network	-	-	-	15,000	-	-	-	-	-	-	15,000
PA14001	Replace RP-1 East and West Iron Sponge	115,000	-	-	-	-	-	-	-	-	-	115,000
PA14002	Replace Two Gas Conditioner Tanks at RP-2 Gas Mixer Rc	40,000	-	-	-	-	-	-	-	-	-	40,000
MM15002	Purchase & Installation of RP-5 Satellite Warehouse & MM	-	250,000	-	-	-	-	-	-	-	-	250,000
EN22001	RP-5 Liquids and Solids Processing	-	-	-	-	-	2,500,000	2,500,000	28,500,000	28,500,000	28,500,000	90,500,000
EN14037	Fontana Interceptor Relief Sewer Manholes Rehabilitatio	200,000	850,000	850,000	-	-	-	-	-	-	-	1,900,000
EN16011	Whispering Lakes PS Rehab	-	-	500,000	1,500,000	-	-	-	-	-	-	2,000,000
	New Project Total	***2,370,000***	***5,370,000***	***3,665,000***	***12,500,000***	***8,400,000***	***3,600,000***	***4,600,000***	***29,100,000***	***29,100,000***	***29,100,000***	***127,805,000***
Non-Reclaimable Wastewater (NC) Total		**9,879,711**	**7,320,000**	**6,315,000**	**24,500,000**	**12,895,998**	**4,015,516**	**4,600,000**	**29,100,000**	**29,100,000**	**29,100,000**	**156,826,225**

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT



Inland Empire Utilities Agency
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Chino, CA 91708