Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Operating and Capital Program Budget
Fiscal Year 2007/08 through 2016/17



Volume II
Ten Year Capital Improvement Plan

June 2007

INLAND EMPIRE UTILITIES AGENCY
OPERATING AND CAPITAL PROGRAM BUDGET
FISCAL YEAR 2007/2008, VOLUME II
TEN-YEAR CAPITAL IMPROVEMENT PLAN

May, 2007

Inland Empire Utilities Agency

6075 Kimball Avenue

Chino, California 91710

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TEN-YEAR CAPITAL IMPROVEMENT PLAN

Introduction

The Inland Empire Utilities Agency (IEUA) is a wholesale distributor of water and recycled water and is also responsible for providing regional wastewater treatment services for a 242-square mile area of western San Bernardino County. Industrial and municipal wastewater is collected through a network of regional wastewater sewer interceptors and two non-reclaimable wastewater sewer pipeline systems; treatment at five regional treatment plants; biosolids management; and other related wastewater utility services. IEUA closely coordinates its water resources management program in the Chino Groundwater Basin with the Chino Basin Watermaster, the San Bernardino County Flood Control District, the Chino Basin Water Conservation District, and local water and sewer retail agencies.

In coordination with its seven wastewater Contracting Agencies, IEUA has developed this Ten-Year Capital Improvement Program (TYCIP) to determine the capital spending requirements needed to meet future wastewater service needs, and coordinate and set priorities for future water supply, recycling, renewable energy, composting, and wastewater capital projects through fiscal year 2016/2017.

Wastewater Facilities Master Plan

In August of 2002, the Regional Sewage Technical and Policy Committees recommended and the IEUA Board of Directors (Board) adopted a Wastewater Facilities Master Plan (WFMP) for ultimate growth (2050) in the service area. IEUA's goal for the Master Plan was to produce a single, comprehensive document that would coordinate, in an integrated water resources planning framework, the planning of all current and future wastewater facilities to meet the overall water resources needs of the service area in the most cost-effective means possible. The WFMP is the primary policy guiding the development of the Agency's TYCIP.

The WFMP, along with the Recycled Water Feasibility Study (2002) and Implementation Plan (2005) and Organics Management Strategy Business Plan, constituted a "Program Master Plan." It integrated all of the related planning activities in order to address the environmental concerns of the overall effects of the WFMP projects contemplated by IEUA. This TYCIP is consistent with the Program Master Plan and accompanying Programmatic Environmental Impact Report (certified on June 28, 2002).

During FY2006/2007 there were extensive efforts by the Operations' two departments, Technical Services and, Pre-Treatment and Source Control to monitor wastewater flows at the regional plants and

within the regional system, respectively.(Figure 2-1). At each treatment plants, detailed accounts of flows at the head works, between the process units including, returned and recycled streams and, from the solids handling facilities were logged. Also, diversion scenarios between the RP's were analyzed and stress tests at one of the RP's were conducted to determine the bottlenecks within the plant. The outcome of the flow studies were used to determine the actual existing capacity for each RP and to establish existing plant influent flows to help in verifying the service area raw sewage flows.

The data obtained from the flow monitoring efforts undertaken by the contracting agencies and the IEUA revealed that the gallons per day of wastewater flows associated with each EDU is decreasing due to conservation practices and use of water efficient appliances in new developments. Per EDU flow rates as low as 186 gallons per day were measured, with an average of roughly 230 gallon per day per EDU (gpd/EDU). As additional monitoring studies are performed, at more locations, throughout the regional collection system, the total wastewater flow accounted for is approaching the total measured as influent raw wastewater to the RP's.

2.1 ANTICIPATED GROWTH

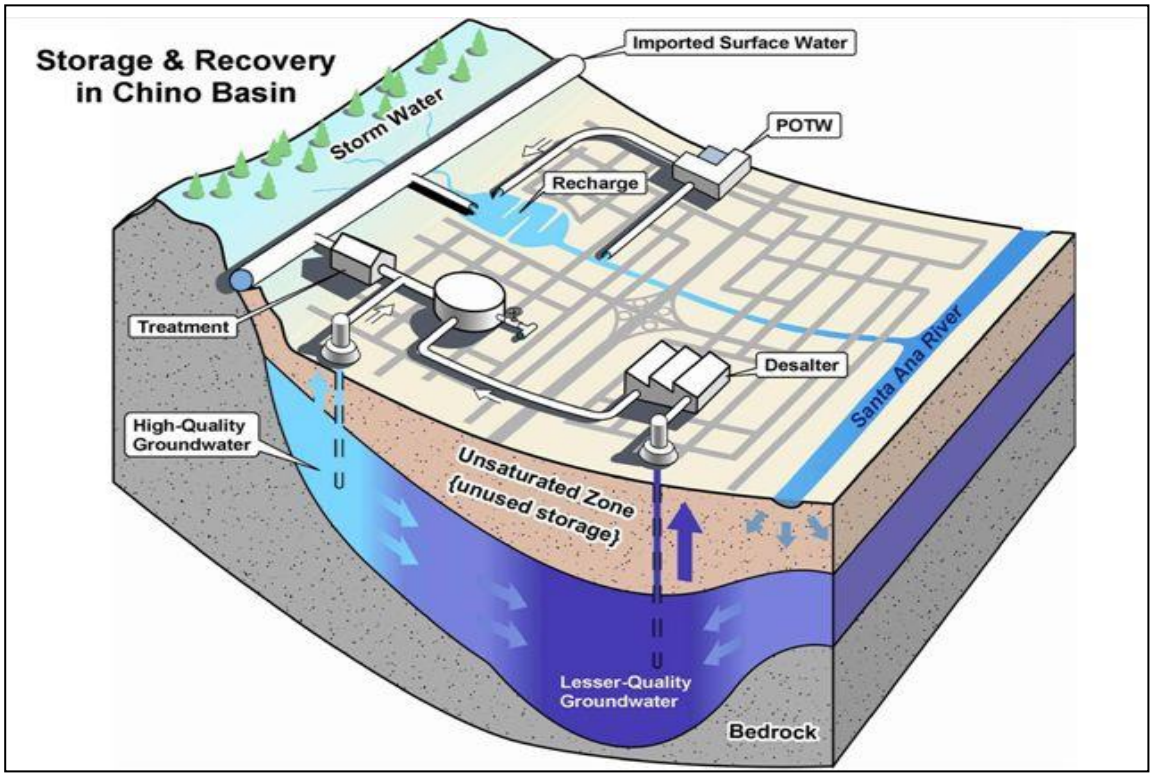
As indicated in Appendix A, the average rate of EDU growth over the next ten years was projected by the Contracting Agencies at 6,700 EDU's per year. In the past, wastewater flow rates have been projected from these data using a factor of 270 gallons per day per EDU, as specified in the Regional Sewage Service Contract—Exhibit J. However, for exhibits I-IX a factor of 200 was applied to compensate for conservation efforts and new technologies. (It should be noted that IEUA still plans its Capital Projects around Exhibit J, but the average flow factor, per EDU, has decreased and is expected to continue to decrease, due to new technology and conservation efforts.) The anticipated flow increases within the system are summarized in Table 2-1. During the Spring of 2006, IEUA asked the noted economist of the Inland Empire region, John Husing, to prepare a "build-out" forecast for the IEUA service area (June 2006) This report forecasted build-out by 2030. The pace of development to build-out will be different for each sector of construction. The industrial build-out is anticipated to occur in approximately 2018, followed by office market to build-out in roughly 2023. In around the same year the single family residential land is predicted to build-out. The multi-family residential market and retail-commercial developments are expected to reach saturation in 20209 and 2030, respectively. The above projections and their future revisions will form the basis for growth forecast and timely expansion of the IEUA collection and treatment systems.

Optimum Basin Management Program

One of the major related planning efforts is the Chino Basin Watermaster's Optimum Basin Management Program (OBMP). The OBMP addresses groundwater quality problems and identifies groundwater management opportunities to be pursued for the benefit of the Chino Basin resources. The purpose of the OBMP was to develop a water quality- and quantity-based management plan that would allow continued reliance on groundwater for beneficial uses within the basin, while minimizing demand for imported water, and to encourage the beneficial use of the large available storage space in the Chino and Cucamonga Basin aquifer system.

One of the centerpieces of the OBMP is the IEUA and Watermaster joint recharge program partnership described in the 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. Through increased recharge capacity of the Basin, greater quantities of water can be stored and made available during imported water supply shortages. The figure below illustrates 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.



Recharge Master Plan

In January of 2002, the IEUA Board of Directors approved the Recharge Master Plan Implementation Memorandum of Agreement, between the Chino Basin Watermaster, Chino Basin Water Conservation District, San Bernardino County Flood Control District, and IEUA. Members of these four agencies have formed a Groundwater Recharge Coordinating Committee to implement a $40-million program entitled the Chino Basin Facilities Improvement Program (CBFIP) resulting in construction projects to improve basin recharge facilities. The IEUA is serving as the lead Agency for implementation (design, construction, operation and maintenance) of this cooperative program.

The CBFIP, completed in 2005, is a Groundwater Recharge Program that included improvements at 18 recharge basin sites and construction of two new sites, for a total of 38 individual recharge basins. The improvements allow the recharge capacity of those facilities to be maximized, protect and increase the

yield of the groundwater basin, increase the amount of recycled water that can be recharged, and improve groundwater quality. Full implementation of the Recharge Master Plan will create 90,000 to 115,000 AFY of improved, plus new recharge capacity in Chino Basin. In 2005, IEUA completed California Department of Health Service's requirements for using recycled water to recharge the Chino Groundwater Basin (Phase I basins) and was granted a recharge permit by the California Regional Water Quality Control Board (Santa Ana Region) in April of 2005. A second permit for the Phase II basins is anticipated in June 2007, and will allow additional recycled water recharge at more recharge sites.

The CBFIP also includes a project to construct lysimeters and groundwater monitoring wells to evaluate the impacts of the recharge program on the groundwater basin. Additional projects are needed to enhance the Groundwater Recharge Program. A State of California Department of Water Resources (DWR) grant of $5.2 million will provide partial financing of the following project components to expand and enhance existing basins during fiscal years 2006-2007 and 2007-2008. They include:

1. New pipelines for delivery of imported water and a concrete lined V-ditch at RP-3 to convey the three sources of water to the Declez Basin via the RP-3 trap channel,
2. Improvements to the new SCADA system which include, adding in remote basins that are scheduled to be improved for groundwater recharge,
3. Internal berm spillways to retain greater quantities of storm water within the various flow-through basins,
4. A new Metropolitan Water District of Southern California (MWD) turnout on the Rialto Pipeline will be constructed to deliver imported water to two series of basins on the West Cucamonga Channel,
5. Nine new sets of lysimeters will be constructed to immediately monitor the recycled water quality with regards to the soil/water treatment in the basins; and nine new groundwater monitoring wells to track the movement of recycled water down gradient from the respective basins,
6. A total of five new recycled water turnouts will be added to the IEUA Regional Recycled Water Distribution System, and
7. Singular projects such as:
    a. Backflow prevention devices on inflow pipelines,
    b. A new sluice gate at San Sevaine Basin No. 5.

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 reduce reliability on imported water. The use of high-quality recycled water along with other high-quality sources will also improve groundwater quality through dilution. Improvements in groundwater quality through recharge also lower the cost of the Chino Basin Desalter groundwater treatment processes.

Maximum Benefit Basin Plan (Santa Ana Regional Water Control Board)

Regulations and standards governing the use of recycled water have been adopted by two state agencies: the Department of Health Services and the Regional Water Quality Control Board, Santa Ana Region, (Regional Board). In February 2004, the Regional Board adopted amendments to the

Water Quality Control Plan for the Santa Ana River Basin (Basin Plan) incorporating a "maximum benefit" proposal recommended by IEUA and the Chino Basin Watermaster. The Maximum Benefit Basin Plan establishes new, scientifically-based Total Dissolved Solids (TDS) and Total Inorganic Nitrogen (TIN) groundwater quality objectives and wasteload allocations that allow the use of recycled water for groundwater recharge while providing reasonable protection of the groundwater quality in the Chino Basin and protect downstream users.

As part of the Maximum Benefit Basin Plan, IEUA and the Chino Basin Watermaster 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 IEUA's non-reclaimable waste (NRW) system); and
- Hydraulic control to protect the Santa Ana River quality (consistent with the 2003 Orange County Water District and IEUA/Watermaster Memorandum of Understanding).

In order to recharge recycled water in the Chino Groundwater Basin IEUA and Watermaster prepared a Maximum Benefit Concept Proposal to the Regional Board for the basin plan amendment. The proposal was approved by the Regional Board 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.

Through timely and appropriate implementation of these commitments, the Basin Plan's "maximum benefit" water quality objectives will be achieved; and unnecessarily restrictive historical "antidegradation" objectives will be avoided. This will result in significant savings to the Agency for outside water imports and wastewater treatment costs.

Recycled Water Program

IEUA recognizes that water recycling is a critical component of an effective water resources management strategy. IEUA prepared a Recycled Water System Feasibility Study (Feasibility Study), adopted by the Board of Directors in August 2002, which delineated the Agency's recycled water program through the year 2020. In 2004, IEUA initiated development of the Regional Recycled Water Program Implementation Plan which updated information from the 2002 report. The Implementation Plan, completed in 2005, identifies additional future recycled water demand, primarily in the developing areas of Chino and Ontario increasing the total deliveries to approximately 93,000 acre-feet per year. The plan identifies a phased implementation over the next ten years with provision for additional expansion beyond the ten year planning horizon. The estimated cost of the facilities planned for the next ten years is $197 million to be funded by a

combination of state and federal grants, state low-interest loans, MWD LRP rebates, and Regional Program funds.

Over the years, recycled water will become a larger portion of the overall water resources supply mix for the Chino Basin. (IEUA Urban Water Management Plan, 2005). Water recycling will help "drought- proof" the Basin, help achieve the objectives of the OBMP, reduce reliance on imported water supply, and provide a lower cost water supply to all the residents of the IEUA service area. IEUA's goal is to use as much recycled water for local beneficial uses as is economically practical. Recycled water will also be utilized to replenish the Chino Groundwater Basin (blended with stormwater and imported water) to meet the replenishment needs of the Chino and Cucamonga Basins. This will provide significant drought and emergency storage benefits to the residents of IEUA's service area.

The 2002 Feasibility Study and 2005 Implementation Plan included an assessment of the potential recycled water customers within the IEUA service area. Staff worked with the regional agencies to identify over 1,900 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. Ultimately, this distribution system layout will serve over 1,200 of the largest customers and supply over 93,000 AFY, which includes 33,800 AFY for recharge.

In September 2000, the IEUA Board and Regional Technical and Policy Committees adopted a recycled water policy document which defines the roles and responsibilities of IEUA and the Regional Contracting Agencies for the construction and ownership of the regional and local facilities. Regional facilities are defined as facilities, 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 IEUA. Local facilities will deliver recycled water from the regional facilities to customers within a Contracting Agencies service area and will be the responsibility of the respective agency. Local facilities will primarily be pipelines (local laterals) and may also include some pump stations and reservoirs. In 2006 this policy was updated 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.

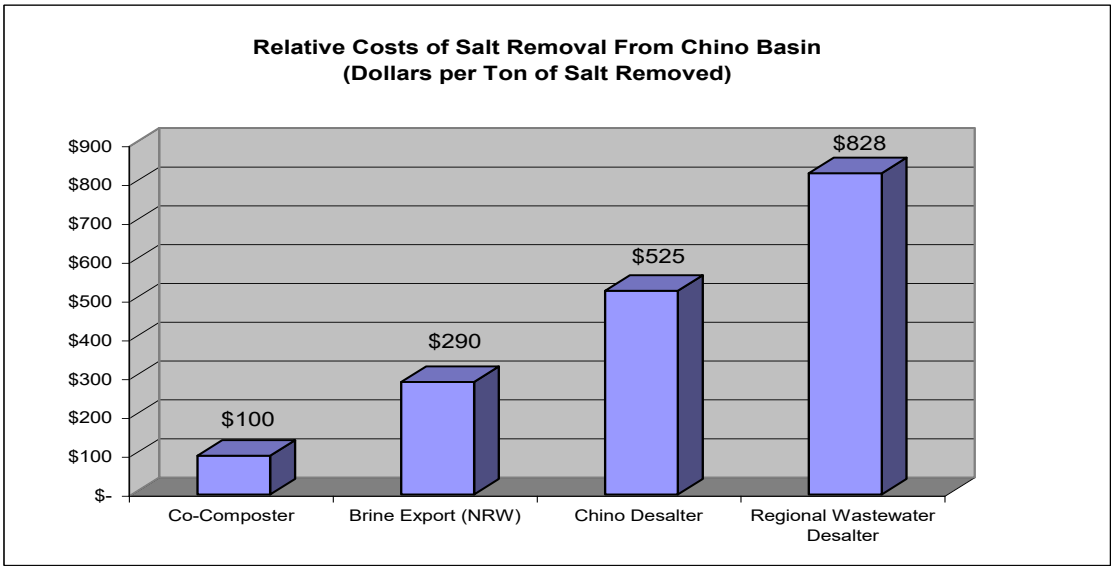
The Regional Recycled Water Facilities consist of a looped pipeline system which connects all four Regional Water Recycling Plants. Future satellite plants, identified in the Wastewater Master Plan, will also be connected to the regional facilities. Regional facilities have been described in over 50 separate projects of pipelines, pump stations, and reservoirs. These projects have been grouped into five implementation phases scheduled every two years. The priority of each phase was determined based on the amount of recycled water each phase could serve and the proximity of each phase to one of the plants or existing recycled water supply. Phase I and II of the program will deliver recycled water to most of the recharge sites since the recharge sites represent a significant recycled water use.

Non-Reclaimable Wastewater (NRW) System

The IEUA owns and operates a non-reclaimable wastewater (NRW) system that provides for export of high-salinity and industrial wastewater generated within the Agency's boundaries to the Pacific

Ocean. The wastewater discharged to the NRW system consists mainly of industrial and groundwater treatment brines, but also includes some solids processing side streams from the IEUA's water recycling treatment facilities and some domestic waste from un-sewered areas. The NRW system is physically separated from the Regional Domestic Sewage System and provides a means for segregating poor quality, saline wastewater and exporting it from the service area. This improves the quality of the recycled water for local use and helps ensure that IEUA can comply with the TDS and total nitrogen limits in the Regional Board permits. The NRW system currently exports approximately 35,550 tons per year of salt to the ocean.

A study by Parsons Engineering Science (2000) evaluated the long-term issues and future funding needs for operating and maintaining the NRW system 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 NRW system, 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 NRW system minimizes the Agency's treatment costs for salt, as illustrated in the following figure.



With the acceptance of the Parsons report in June 2000, the Board began a policy of phased implementation of budgets and rates to encourage industries to discharge brine wastes to the NRW system instead of the regional sewer system to maximize salt export and improve the water quality (TDS) of regional water recycling plants. Reducing saline contributions to the regional plants will help IEUA to avoid exceeding its discharge permit limit of 550 mg/l TDS. Since removing TDS by treatment requires very expensive technology such as reverse osmosis, it is much more cost-effective to use the NRW system to keep the salt out of the domestic sewage system.

On March 19, 2003, the Board held a workshop to review existing policies for utilization of the NRW system and to begin developing an NRW Action Plan. The purpose of the Action Plan was to implement strategies to reduce TDS at the IEUA regional water recycling plants and to encourage salt export through optimum utilization of the NRW system consistent with the OBMP and the

Maximum Benefit Basin Plan. A second workshop was held on November 19, 2003 to review and refine the action plan. The proposed action plan was developed through extensive coordination and discussion with the IEUA's Regional Technical and Policy Committees, the Chino Basin Watermaster, and the Regional Board.

The current NRW Action Plan includes several measures designed to more fully utilize the capacity of the NRW system to benefit the IEUA service area:

- Water Softener Strategy—Developed a comprehensive program of incentives, public education materials and model ordinances for new and existing residential and commercial water softeners for fiscal year 2004/05. The budget for the program is $250,000 per year using the Wastewater Collection, Treatment, and Disposal (RC) Fund. This project has already been initiated and it is progressing well. (Status: In progress),

- Buyback Agreement with CSDLAC—IEUA relinquished 3 MGD of owned capacity in the NRW to LACSD in April 2004. This action will lower annual payments to CSDLAC by approximately 23% or $350,000 annually. The savings will be passed on to NRW customers through more favorable rates and charges. This transaction will also encourage the use of the NRW system by new and existing industries to discharge their saline effluent and increase the salt export. (Status: Completed),

- Implementation of the Maximum Benefit Basin Plan—Ensure compliance with the Maximum Benefit requirements and with the Memorandum of Understanding with the Orange County Water District and Regional Board. Critical near-term action items are: (1) develop monitoring work plan with Watermaster; (2) evaluate regional wastewater pretreatment ordinance technical TDS increment; and (3) annual reports on salt balance (Watermaster responsibility). (Status: In progress),

- MWD Dry Year Yield Conjunctive Use Ion Exchange Projects—Construct connections to the NRW system (IEUA implementation responsibility) in conjunction with Upland, CVWD, Monte Vista Water District, Chino, Ontario, and Chino Hills for several proposed ion exchange projects. These projects will improve the water quality in the groundwater basin and improve its yield, especially during dry years, through participation in a conjunctive use program with MWD. (Status: In progress),

- NRW "Pass Through" Rates- IEUA staff developed pass through rates and budget impact analysis for existing industrial customers. The goal was to "pass through" charges from LACSD and SAWPA to industrial customers for using their non-reclaimable waste systems, with addition of only minimal charges to cover the IEUA administrative expenses. This action will encourage exporting more salts from the Chino Basin by connecting more industries to discharge their brine wastes to the system. The contract with Niagara Bottling Company was completed as a "case study" of this effort. The "Pass Through" rates will provide economic incentives for existing regional industries to divert their discharge to the NRW system, if their effluent TDS concentration is above 500 mg/L. This action is a key to the Chino Basin OBMP strategy. (Status: Completed),

- Chino Desalter "SARI" Capacity Alternatives—In April 2004, IEUA made an agreement with Chino Desalter Authority (CDA) to sell IEUA owned SARI capacity to the CDA to handle the brine waste from the Chino I Desalter Expansion and the future Chino II Desalter.

The revenue from this sale transaction was $14.25 million. Approximately $4.73 million from the sale is expected to be deposited into IEUA's Regional Capital Improvement Fund (RC Fund) and $9.51 million is expected to be deposited into the NRW Capital Improvement Fund (NC Fund). (Status: Completed), and

- Leasing of Temporary SARI Capacity to Lewis Operating Company-IEUA had made an agreement with Lewis Operating Company (LOC) to lease a portion of the SARI capacity for their Chino Preserve Expansion. IEUA has made this lease available to LOC until City of Chino has completed the design and construction of the Pine Ave. interceptor sewer. Once the construction of the Pine Ave. interceptor is completed the California Institute for Women (CIW) stops discharging to the SARI and starts discharging to the Pine Ave. interceptor, which will discharge to the IEUA's Regional Plant No. 5. (Status: Completed).

- In 2005 IEUA staff, at the request of its Board, developed an Asset Management Program (AMP) to identify and inventory IEUA's major assets, their condition, and plan for capital improvement projects. IEUA retained the services of PBS&J and performed an exhaustive condition assessment of the NRWS pipelines and infrastructure including manholes using Closed Circuit Tele Vision (CCTV) and Global Positioning System (GPS) technology. Overall, the pipes (48 miles) and manholes (571) that were inspected were in good condition.

Organics Management

The Agency's long-range plans for treating and utilizing biosolids as well as dealing with the problems of dealing with manure and green 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 IEUA's mission to protect public health, the groundwater basin, and the environment (e.g., reduce air pollution and improve water quality). The Board certified the Programmatic EIR for the Business Plan in June 2002 and adopted the Business Plan together with the WFMP and the Recycled Water Feasibility Study in August 2002.

To the extent it is economically feasible, the IEUA's organics management strategy seeks to protect the Chino Groundwater Basin from infiltration of salts and nitrogen compounds generated on dairies in order to avoid the future cost of removing such contaminants from the groundwater. As a result, the Business Plan is an integral tool to implement the Chino Basin Watermaster's Optimum Basin Management Plan. The Business Plan included the implementation of two key initiatives. The first is a comprehensive renewable energy reliability program, which has resulted in the construction of two dairy manure digestion facilities to generate methane gas and divert salts from the groundwater basin. The second is 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. Along with the IEUA Co-Composting Facility which opened in 1996 to compost dairy manure with municipal biosolids, the two manure digestion facilities have diverted a significant amount of pollutants: 118,000 tons of total dissolved solids (salt), 239 tons of nitrate-nitrogen, and 4,980 tons of ammonia.

In partnership with the County Sanitation Districts of Los Angeles County (CSDLAC), IEUA

formalized an agreement implementing the joint goal of development of a sustainable biosolids management project. This Joint Powers Agreement (JPA) outlines the design, construction and operation of a biosolids composting facility, called the Inland Empire Regional Composting Facility (IERCF), to be located adjacent to the IEUA Regional Water Recycling Facility No. 4, located in Rancho Cucamonga, CA. This new composting facility will replace IEUA's Co-Composting Facility located in Chino, CA. The transition to the IERCF and decommissioning of the existing Co-Composting Facility occurred in late 2006/early 2007. While it is anticipated that the majority of biosolids generated at the IEUA's water recycling facilities will be made into compost at the Inland Empire Regional Composting Facility, IEUA will continue evaluating several options that will provide a diverse, yet cost-effective, long-term sustainable biosolids recycling portfolio.

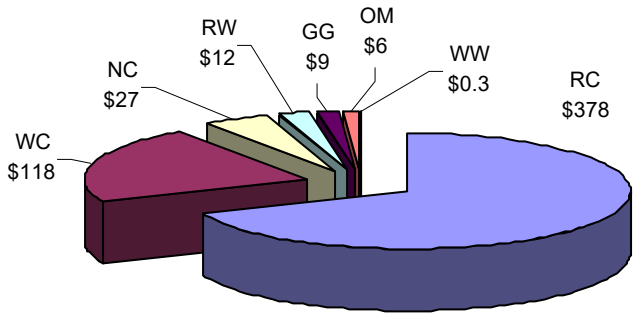
Ten Year CIP Costs and Financing

The Agency's budget and Ten-Year Capital Improvement Program are divided into several different program areas:

- Regional Program (RC Fund)
- Recycled Water Program (WC Fund)
- Recharge Water Program (RW Fund)
- Non-reclaimable Waste System Program (NC Fund)
- Organics Management Program (OM Fund)

By far the largest fund/program area, in terms of costs, is the Regional Program, as illustrated in the figure below. This year's TYCIP recommends $373 million in capital project expenditures for the Regional Program over the next ten years.

FIGURE 8-1
RECOMMENDED TEN-YEAR CAPITAL PROJECT EXPENDITURES
($ in Millions)



The projected ten-year Regional Program capital project expenditures are less than in last year's (FY 2006/2007) TYCIP by approximately $5 million dollars. The decrease is generally attributable to the slower growth forecast for the Agency's service area as well as increasing conservation efforts, which produce a much lower flow factor per EDU. However, even with the lower forecast flows are expected to approximately double within the RP-4 and RP-5 areas. Growth in the northern parts of the cities of

Fontana and Rancho Cucamonga within the RP-4 service area has been spurred by the construction of the 210 Freeway. Annexation of the agricultural preserve in southwestern Chino and southern Ontario and approval of development plans in those areas will create more wastewater in the RP-5 service area.

Treatment capacity expansions will be needed to accommodate the forecasted flows. The planned expansions include:

- Expansion of RP-4 from 7 mgd to 14 mgd occurring in FY 2006/2007,
- Upgrades of RP-5 treatment units to increase the plant capacity to beyond 15 mgd in FY 2009/2010 (see Exhibit V).

The planned expansions, diversions, and bypasses will allow the Agency to achieve the WFMP goals of: (1) increasing reuse and recycling potential in the upper Service Area by keeping more flow at RP-4; and (2) optimizing capacity utilization at the other three regional plants by balancing flows throughout the Service Areas. Opportunities for water recycling will be maximized by diversion of wastewater to RP-4 from some portions of CVWD and the City of Fontana now tributary to RP-1. Construction of the RP-4 Trunk Sewer and the San Bernardino Avenue Pump Station and Force Main are a key part of this plan.

Completion of the eastern RP-1/RP-5 bypass pipeline in June 2006 will help to optimize existing system capacity and defer the need for construction of more RP-1 treatment capacity until beyond the TYCIP window. It will also have odor control benefits at RP-1 by eliminating the need for storing primary-treated wastewater in equalization ponds. The pipeline will be jointly constructed and operated with the City of Ontario and will provide IEUA with at least 9 mgd of capacity that can be used to bypass flow from the RP-1 Service Area to the RP-5 Service Area.

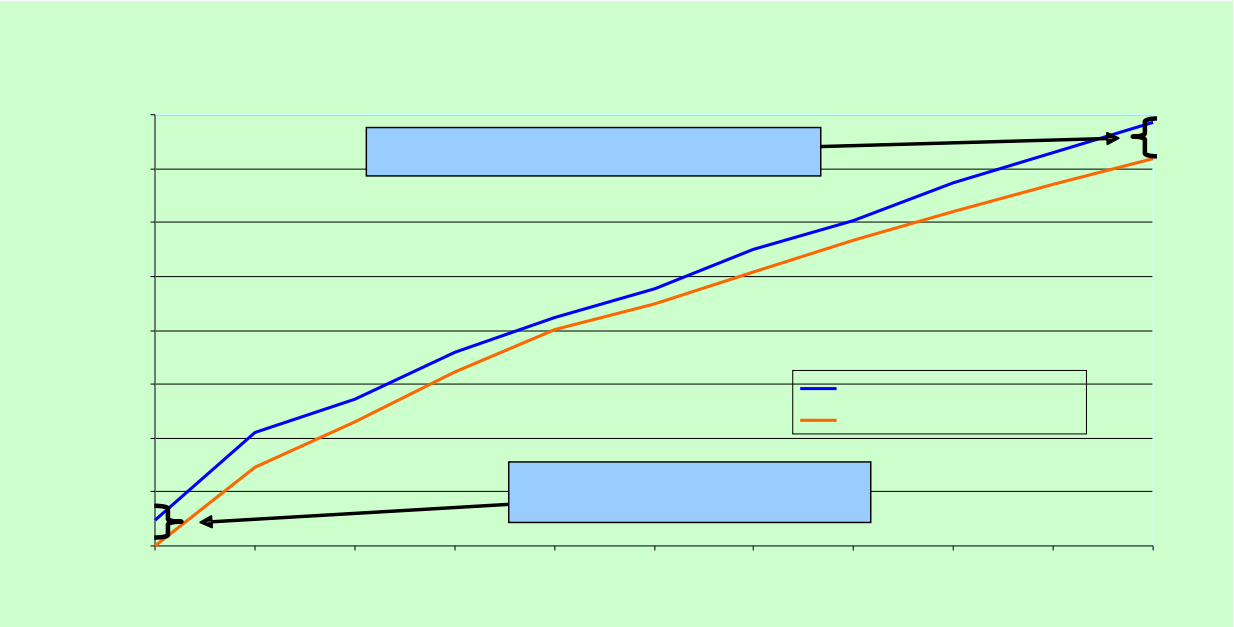
RP-5 began discharging treated wastewater through its outfall to Chino Creek in March of 2004. Liquids treatment operations at RP-2 were discontinued shortly thereafter. Current growth projections indicate that a capacity increase at RP-5 may be needed by 2010 of the Ten Year Planning Period.

The recommended financing for this TYCIP is from several different sources. Short term commercial paper or long term revenue bond debt is needed in FY 2007-2008 because of a shortage of connection fee revenue. Within the Regional Program, grants are expected to total $6 million for wetlands and energy efficiency projects during FY 2006-2007. The key sources of revenue for the TYCIP are property taxes ($241 million) and supplemental capital contributions ($258 million). Supplemental capital contributions come from calls to Contracting Agencies for Capital Capacity Reimbursement Payments (CCRP), which are derived from connection fees. The expected revenue from Reimbursement Payments depends on the number of new EDUs added to the Regional sewerage system each year. The expected number of EDUs is forecasted based on growth projections.

It has been assumed that the CCRP will be increased at the rate of inflation in construction costs, estimated at an average of 3% per year. The annual increase in the CCRP is typically based on Engineering News Record (ENR) construction cost index for Los Angeles County (ENRLA). The current (FY 2006/2007) Capital Capacity Reimbursement Payment amount is $4,200 per EDU. On March 1, 2007 the Regional Committees recommended a two year increase of $4,450 and $4,673, respectively, effective July 1, 2007 and July 1, 2008. This recommendation was adopted by the Board on

March 6, 2007.

The recommended financing for the Regional Program is adequate to fund the Ten-Year Capital Improvement Plan with the borrowing proposed in FY 2007-2008. The figure below shows how gross revenues and costs vary throughout the ten years, affecting the combined working capital and Member Agency reserves. Starting with a projected combined reserve balance of $46 million at the beginning of FY 2006/07 with initial costs set to zero, cumulative revenues are projected to exceed costs during the next ten years, leaving an ending combined reserve balance of $68 million.



Emerging Planning Issues

In 2002, IEUA staff, in partnership with the Regional Technical Committee, prepared a very comprehensive master plan of the regional wastewater facilities. In 2007/2008, IEUA staff will be closely coordinating an implementation strategy for the Master Plan with the regional committees to ensure that all the key technical issues are addressed.

During the process of preparing the master plan in 2001 and 2002, the key issues were:

- Recycled water,
- Renewable energy generation,
- Organics management,
- Phased treatment plant expansions, and
- Chino Basin Watermaster Optimum Basin Management Plan (OBMP) implementation.

The 2002 Wastewater Facilities Master Plan (WFMP) recognized the interrelationship of the many programs IEUA is involved in, and also the interrelationship of the facilities that serve these programs. The continued success of the IEUA service area is heavily dependent on a high- quality, dependable water supply which in turn is dependent on sound conservation and waste management practices. A major tenet of the Chino Basin Resource Planning Agencies (IEUA, Chino Basin Watermaster, Chino Basin Water Conservation District, Chino Basin Desalter Authority, SAWPA, MWD) is to emphasize water recycling and to minimize the importation of MWD water supplies to the maximum extent possible. This philosophy resulted in a 2002 WFMP that incorporated a water recycling element for direct delivery and conservation of recycled water through groundwater recharge. It included an Organics Management Strategy for recycling the solids by-products of wastewater treatment and an Energy Management Strategy that emphasized self generation with recycled waste management by-products.

The primary objective of the Master Plan Implementation Strategy will be to improve utilization of existing facilities while expanding these facilities to meet the rapid growth in the IEUA service area. The implementation plan will focus on the development of program areas such as RP-1 to coordinate and optimize the capital improvements in that general area. Other program areas include the remaining treatment facilities, recycled water facilities, energy facilities, etc.

The resources necessary to continue the development and integration of new programs and facilities will continue to be from responsible fiscal management. To this end, on-going evaluations as well as evaluations in the Master Plan Implementation Strategy will prioritize and make the best use of future capital dollars by evaluating projects such as:

- **NRW System** -- How can the NRWS be fully utilized to improve water quality and defer expansions at RP-4 and RP-5?,

- **RP-4 Solids** -- When should organic solids be processed at RP-4 to minimize cost and increase energy production?,

- **Food Waste** – Do the existing anaerobic digester waste treatment systems have sufficient capacity to accept new waste streams (food waste) to enhance renewable energy production?,

- **CMOM** – How will implementation of the new SWRCB "550" Sewer Collection program and asset management affect future facility maintenance needs?,

- **System Automation** – How can the facilities in the system be automated to reduce staffing needs?,

- **Recycle Stream Treatment** -- Is side stream treatment economical and is it needed now based on excess system capacity?,

- **RP-5** – How should RP-2, RP-5, and the Carbon Canyon Water Recycling Facility be integrated and how should the RP-5 be expanded to meet future growth?, and

- **Technology --** Use of technology to further reduce operating costs and land requirements at the IEUA water recycling plants.

Key goals will be to reduce operating costs at IEUA water recycling plants through cost-effective capital improvements and to ensure environmental compliance. In addition, improvements to the plants to expand existing capacity to process wastewater to meet the rapid growth are a critical emerging issue.

1.0 INTRODUCTION

1.1 BACKGROUND

The Inland Empire Utilities Agency (IEUA) is a wholesale distributor of water and recycled water plus provides regional wastewater treatment services. It provides industrial and municipal wastewater collection through regional wastewater interceptors, two non-reclaimable waste pipeline systems, treatment at four regional treatment plants, biosolids management and other related utility services for a 242-square-mile area of western San Bernardino County. The IEUA closely coordinates its water resources management program in the Chino Groundwater Basin with the Chino Basin Watermaster, the San Bernardino County Flood Control District, the Chino Basin Water Conservation District, and local water and wastewater retail agencies.

1.2 IEUA's MISSION

In coordination with its Contracting Agencies, the IEUA has developed this Ten-Year Capital Improvement Program (TYCIP) to determine the capital spending requirements needed to meet future wastewater service needs, and coordinate and set priorities for future water supply, recycling, and wastewater capital projects. The IEUA provides regional wastewater-related services to seven Contracting Agencies:

City of Chino
City of Chino Hills
Cucamonga Valley Water District (CVWD)
City of Fontana
City of Montclair
City of Ontario
City of Upland

The residents of the Chino Basin area voted to form the IEUA (originally incorporated as the Chino Basin

"The mission of the Agency is to supply imported and recycled water; collect, treat, and dispose of wastewater; and provide other utility-related services to the agencies it serves. The Agency strives to provide these services in a regionally planned, managed, and cost-effective manner which protects the public health and environment, and maintains a high level of public awareness."

Municipal Water District) in June 1950. The IEUA is governed by a five-member Board of Directors (Board), elected to represent individual areas or Divisions. The IEUA is a member of the Metropolitan Water District of Southern California (MWD) and the Santa Ana Watershed Project Authority (SAWPA) and has representatives on the MWD's Board of Directors and SAWPA's Commission. The IEUA also has a representative on the Chino Basin Watermaster. The IEUA, its Board, and staff, strive to ensure that reliable, cost-effective water utility services, which protect and enhance the environment while fostering economic development, are available when needed.

Figure 1-1 depicts the IEUA service area, each Contracting Agency's sphere of influence, and IEUA's Regional Treatment Plants.

1.3 WASTEWATER FACILITIES MASTER PLANNING

In August of 2002, the Regional Technical and Policy Committees recommended and the IEUA Board of Directors adopted a Wastewater Facilities Master Plan (WFMP). The IEUA's goal for the Master Plan was to coordinate, in an integrated water resources planning framework, the planning of all current and future wastewater facilities into a single comprehensive document for ultimate growth (2050) in its service area. The WFMP is the primary policy guiding the development of the Agency's TYCIP.

Some of the objectives of the WFMP 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 IEUA's water recycling, organics management, and energy management programs are interrelated and dependent on the future of the IEUA's wastewater facilities expansions.

1.4 RELATED PLANNING ACTIVITIES

This TYCIP is consistent with the WFMP and Programmatic EIR (certified on June 28, 2002). The WFMP, along with the Recycled Water Feasibility Study and implementation strategy as well as the Organics Management Strategy Business Plan, constitute a "Program Master Plan." It integrated all related planning activities into one comprehensive document in order to address the environmental concerns of the overall effects of the WFMP projects contemplated by the IEUA. This comprehensive planning process is illustrated in Figure 1-2. The various related planning documents are described briefly below.

FIGURE 1-1
CONTRACTING AGENCIES

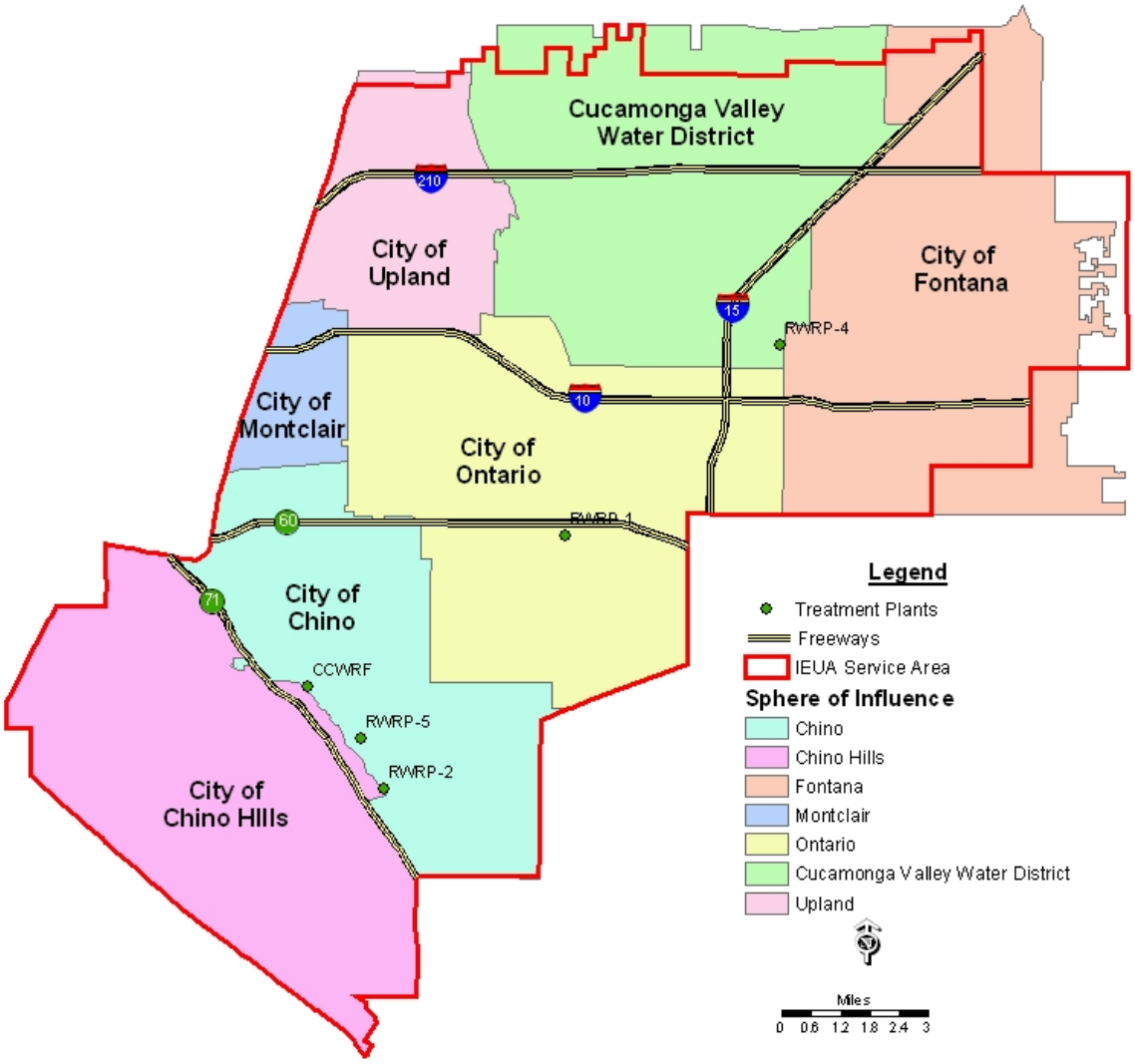
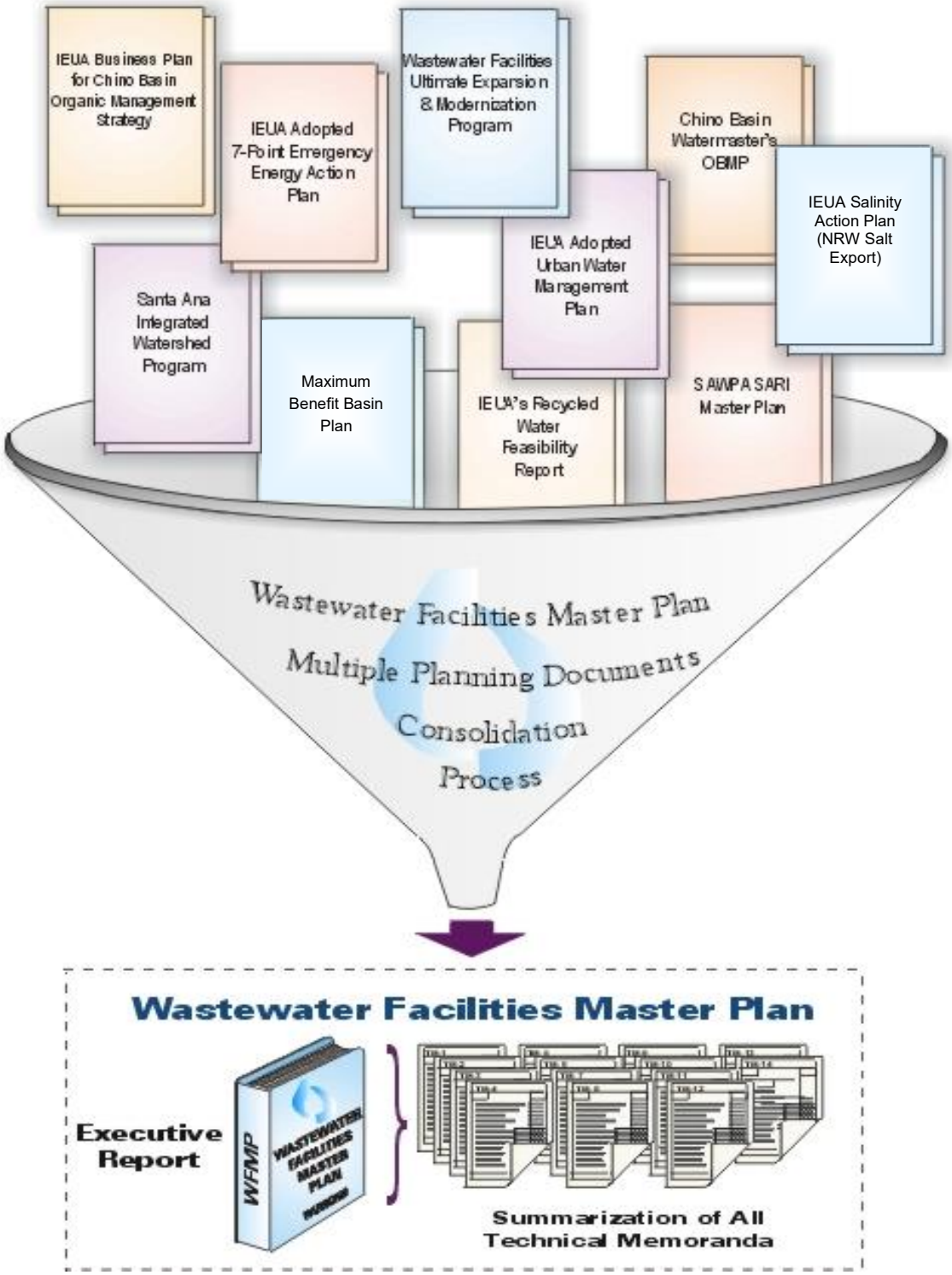


FIGURE 1-2

WFMP—CONSOLIDATION OF RELEVANT IEUA PLANNING DOCUMENTS



1.4.1 Chino Basin Watermaster's Optimum Basin Management Plan (OBMP)

The OBMP for the Chino Basin was prepared by the Court-appointed Watermaster to address groundwater quality problems and identify groundwater management opportunities to be pursued for the benefit of the basin resources. 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 addressed the need to develop additional water sources within the Chino Basin to meet future demands through water quality treatment, groundwater recharge, and water recycling programs. This Ten-Year Program is consistent with Watermaster's OBMP. A looped pipeline, along with storage reservoirs, and pump stations has been constructed that expand and interconnect the IEUA recycled water distribution system with local recycled water customers as well as groundwater recharge basins. Construction and improvement of 18 groundwater recharge basins have been completed, allowing for conservation of stormwater, recycled water, and imported water in the underground Chino Basin. The MWD Dry Year Yield Program funds six new groundwater treatment facilities that allow optimal use of the Chino Basin groundwater resource in accordance with the goals of the OBMP.

1.4.2 IEUA Recycled Water Feasibility Study

The IEUA prepared a Recycled Water Feasibility Study, adopted by the Board of Directors in August 2002, which delineated the Agency's recycled water program through the year 2020. In 2004, IEUA initiated development of the Regional Recycled Water Program Implementation Plan, which updated information from the 2002 study. In 2005, the IEUA Recycled Water Program Implementation Plan identified additional future recycled water demand, primarily in the developing areas of the cities of Chino and Ontario. IEUA recognizes that water recycling is a critical component of an effective water resources management strategy; over the years, recycled water will become a larger portion of the overall water resources supply mix for the Chino Basin. Water recycling will help "drought proof" the Basin, help achieve the objectives of the OBMP, and provide a lower cost water supply to all the residents within IEUA's service area.

IEUA's adopted Recycled Water Feasibility Study (August 2002), indicated that by the year 2020 the projected use of recycled water would exceed 70,000 acre-feet per year (AFY), with over 1,700 customers projected to be connected to the regional recycled water distribution system. Subsequent implementation of the 2005 Recycled Water Program Implementation Plan and the 2005 IEUA Urban Water Management Plan showed that a total of over 93,000 AFY of recycled water could be delivered to over 1,900 potential customers. IEUA will recharge up to 33,800 AFY of recycled water (blended with storm water and imported water to meet the overproduction replenishment needs) into the Chino Groundwater Basin and facilitate direct deliveries of over 69,000 AFY of recycled water to local customers. IEUA's goal is to use as much recycled water for local beneficial uses as is economically practical and replenish the Chino Groundwater Basin. IEUA received a permit for recycled water recharge on April 15, 2005. IEUA expects to receive a second permit in the summer of 2007 that will allow an expansion to the recharge program.

The 2002 Feasibility Study recommended and the 2005 Recycled Water Program Implementation Plan confirmed that interconnection of all four of the IEUA's regional treatment plants in a looped

distribution system would maximize beneficial use of recycled water, increase system reliability and flexibility, and provide other operational and cost reducing benefits. The looped system will also allow more customers to be served and provide the flexibility to release surplus recycled water to spreading basins throughout the Basin for recharge.

Over 50 projects with multiple priorities consisting of pipelines, pump stations, and reservoirs have been identified to be implemented over the next ten years (in two year intervals). IEUA is seeking outside funding, grants and low interest loans totaling $ 158 million, for the program from the State of California (Department of Water Resources (DWR)) and State Water Resources Control Board (SWRCB) and the U.S. Bureau of Reclamation (USBR). In 2003, IEUA amended its original (1996) local projects program agreement with MWD to include all four wastewater treatment plants. The original 1996 agreement with MWD only allowed recycled water deliveries from the Carbon Canyon Water Reclamation Facility. The program will provide IEUA with over $2 million annually from the $154/AF rebate (up to 13,500 AFY).

1.4.3 Recharge Master Plan

The Groundwater Recharge Program is a comprehensive plan to increase artificial groundwater recharge within the Chino Basin using stormwater, recycled water, and imported water. As a component of the Chino Basin Watermaster's 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 Chino Basin Watermaster, Chino Basin Water Conservation District, San Bernardino County Flood Control District (SBCFCD), and IEUA. Members of these four agencies have formed a Groundwater Recharge Coordinating Committee to implement the initial $40-million program entitled the Chino Basin Facilities Improvement Project (CBFIP) that resulted in construction projects to improve facilities for recharge program. 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 18 recharge basins with a total potential recharge capacity of 114,000 AF. Construction and improvement of two additional recharge basins are anticipated to increase the total potential recharge capacity to 134,000 AF in the Chino groundwater basin.

Additional projects are needed to enhance the Groundwater Recharge Program ($11 million Phase II CBFIP). A $5 million grant from DWR will provide partial financing of the following project components:

- New pipelines for delivery of stormwater, recycled water, and imported water;
- Improvements to the new SCADA system (addition of remote basins);
- Construction of Internal berm spillways;
- Construction of new MWD turnouts on the Rialto Pipeline;
- Construction of nine new sets of lysimeters and nine new groundwater monitoring wells;
- Addition of five new recycled water turnouts from the IEUA Regional Recycled Water Distribution System.

IEUA and Watermaster approved the $11 million Phase II improvements in April 2006 utilizing the DWR $5 million grant.

1.4.4 Santa Ana Integrated Watershed Program

The Santa Ana Integrated Watershed Program (SAIWP) consists of six major elements:

- Water storage to drought-proof the watershed by storing up to 1.3 million acre-ft (MAF) 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, and
- Recreation and conservation to bring additional recreational opportunities and increase public awareness of the Santa Ana River's environmental needs and purposes.

SAWPA is pursuing these elements simultaneously based on the availability of state grant funding and the aggregated needs of SAWPA member agencies, including the IEUA, water districts, cities, counties, and several environmental groups.

1.4.5 Maximum Benefit Basin Plan

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 IEUA and Chino Basin Watermaster. The Maximum Benefit Basin Plan establishes new groundwater Total Dissolved Solids (TDS) and Total Inorganic Nitrogen (TIN) water quality objectives and wasteload allocations that allow the use of recycled water for groundwater recharge while providing reasonable protection of the groundwater quality in the region. The Maximum Benefit Basin Plan was an outgrowth of the "TIN/TDS Task Force" in which IEUA participated since 1995/96. The Task Force included the Regional Board and 22 water supply and wastewater agencies throughout the region. Coordinated by SAWPA, the Task Force completed multimillion dollar studies to review groundwater TDS and nitrogen objectives, groundwater subbasin boundaries, the TIN and TDS wasteload 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.

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, IEUA and Chino Basin Watermaster 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 IEUA'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 IEUA and Chino Basin Watermaster 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 "antidegradation" objectives. This will result in significant savings to the Agency for outside water imports and wastewater treatment costs.

1.4.6 Chino Basin Organics Management Strategy Business Plan

The Chino Basin Organics Management Business 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 Business 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 IEUA Board of Directors certified the Programmatic EIR for the Business Plan in June 2002 and adopted the Business Plan together with the Wastewater Facilities Master Plan and Recycled Water Feasibility Study in August 2002. The Business Plan presented specific short-term and long-term recommendations as well as outlining of the steps and considerations that must be addressed in implementing projects consistent with the IEUA's goals and mission. The Business Plan, as an integral tool for implementing the Chino Basin Watermaster's Optimum Basin Management Plan (OBMP) includes two key initiatives. The first is a comprehensive renewable energy reliability program and the second initiative is a local organics recycling program. Implementation of those initiatives will advance one of the paramount goals of the Business Plan: protection of the Chino Groundwater Basin from infiltration of salts and nitrogen compounds, in agricultural wastes. As a result, IEUA will avoid the costly removal of those contaminants from ground water, later.

As a major milestone for implementation of the Business Plan, construction of the Inland Empire Regional Composting Facility (IERCF) was completed in early 2007. The facility will convert the majority of biosolids generated at the IEUA's water recycling facilities into compost. IEUA will continue evaluating several options that will provide a diverse, yet cost-effective, long-term sustainable biosolids-recycling portfolio. The Complete-Mix Anaerobic Manure Digester project produces energy from methane gas that will be used by the Agency's regional water recycling facilities and local groundwater desalination facilities. The existing RP-5 Renewable Energy Digester Facility will be expanded and modified to generate additional digester gas which will be used to power Agency facilities. This Ten-Year Plan is consistent with the Business Plan recommendations.

1.4.7 IEUA Adopted Seven-Point Emergency Energy Action Plan

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

1. Maximize the efficiency and self-sufficiency of existing office and plant operations,
2. Generate new local sources of energy and minimize external energy/fuel costs,
3. Maximize operational flexibility of plants to "roll off" the electric grid and natural gas sources, particularly during peak usage periods, and
4. Promote regional energy and water conservation programs.

Through this plan, the IEUA intends to build self-sufficiency and local control over long-term energy supplies and assist the region and California in meeting their energy needs.

1.4.8 Salinity Management Action Plan—Regionalization of NRW System to Maximize Salt Export

The IEUA 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 IEUA meet the goals of the OBMP and the Maximum Benefit Basin Plan objectives. Reduced wastewater salinity will also help IEUA to comply with effluent limitations for TDS in its wastewater discharge permits. IEUA developed a Salinity Management Action Plan in 2002. Some of the strategies that were identified included:

- optimizing the use of the IEUA's non-reclaimable waste (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 IEUA treatment plant operations.

The current NRW Action Plan, was developed through extensive coordination and discussion with IEUA's Regional Technical and Policy Committees, the Chino Basin Watermaster, and the Regional Board. IEUA also expects to achieve substantial avoided costs and valuable benefits for the region as a result of implementation of the current NRW Action Plan. The Action Plan consists of the following:

- Water Softener Strategy—Develop a comprehensive program of incentives, public education materials, and model ordinances for new and existing residential and commercial water softeners. In FY 2007/08, the water softener replacement program will be implemented throughout the IEUA's service area.
- Buyback Agreement with CSDLAC—IEUA 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. The savings will be passed on to NRW customers through more favorable rates and charges. Also encourages the use of the NRW system by new and existing industries to discharge their saline effluent and increase the salt export,
- Implementation of the Maximum Benefit Basin Plan—Ensure compliance with the Maximum Benefit requirements and with the Memorandum of Understanding with the Orange County Water District and Regional Board. Critical near-term action items undertaken include: (1) developing monitoring work plan with Watermaster; (2) evaluating regional wastewater pretreatment ordinance technical TDS increment; and (3) preparing annual reports on salt balance (Watermaster responsibility),
- MWD Dry Year Yield Conjunctive Use Ion Exchange Projects—Construct connections to the NRW system (IEUA implementation responsibility) in conjunction with Upland, Monte Vista Water District, Chino, and Chino Hills for several proposed ion exchange projects. The projects will improve groundwater basin water quality and yield specially during dry years,

- NRW "Pass Through" Rates- IEUA staff developed a pass through rates and budget impact analysis for existing industrial customers. This action will encourage export of salts from the Chino Basin by connecting more industries to discharge their brine wastes to the system. "Pass Through" rates provide economic incentives for existing regional industries with effluent TDS concentrations above 500 mg/L to divert their discharge to the NRWS and to use recycled water. This is a key component of the Chino Basin OBMP strategy,

- Chino Desalter "SARI" Capacity Alternatives—In April 2004, IEUA made an agreement with Chino Desalter Authority (CDA) to sell IEUA owned SARI capacity to the CDA to handle the brine waste from the Chino I Desalter Expansion and the future Chino II Desalter. The revenue from this sale transaction was $14.25 million. Approximately $4.73 million from the sale is expected to be deposited into IEUA's Regional Capital Improvement Fund (RC Fund) and $9.51 million was deposited into the NRW Capital Improvement Fund (NC Fund) (Status: Completed),

- Leasing of Temporary SARI Capacity to Lewis Operating Company-IEUA had made an agreement with Lewis Operating Company (LOC) to lease a portion of the SARI capacity for their Chino Preserve Expansion. IEUA has made this lease available to LOC until City of Chino has completed the design and construction of the Pine Ave. interceptor sewer. Once the construction of the Pine Ave. interceptor is completed, the California Institute for Women (CIW) will stop discharging wastewater to the SARI and start sending its flows to the Pine Ave. interceptor, and eventual treatment at the IEUA's Regional Plant No. 5,

- The IEUA will avoid the cost of treating non-reclaimable industrial wastewater at IEUA'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 IEUA is the ability to use up to 33,800 acre-feet per year of recycled water for groundwater recharge instead of more expensive imported water,

- The avoided costs achievable by maximum utilization of the NRW System are about $430 million over the next ten years, and

- There will also be additional revenues from the sale of unused capacity, either: (1) as part of the CSDLAC buyback agreement; (2) for the Chino Desalters; (3) for local ion exchange groundwater treatment projects; or (4) for local development in non-sewered areas.

The NRW Action Plan adheres to the IEUA Board's policy of phased implementation of budgets and rates in order to provide economic incentives for the export of brine wastes through the NRW system. The Agency's FY 2007/2008 Budget and this Ten-Year CIP incorporate specific budget options that were developed in coordination with the IEUA's Regional Technical and Policy Committees. Further details are provided in Chapter 6**.**

1.4.9 IEUA 2005 Urban Water Management Plan

In 2005, IEUA updated the 2000 Urban Water Management Plan (UWMP) in accordance with State of California Law. The 2005 UWMP describes all water supplies and demands within the IEUA service area.

1.5 ENVIRONMENTAL DOCUMENTATION

To comply with the California Environmental Quality Act (CEQA), IEUA certified a Programmatic Environmental Impact Report (EIR) on June 28, 2002. It included IEUA's Wastewater Facilities 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.

1.6 PURPOSE OF THIS TEN-YEAR PLAN

Pursuant to the terms of the Regional Sewage Service Contract, a TYCIP is prepared each year to identify capital spending requirements needed to meet the growth forecasts of IEUA's Contracting Agencies. The forecasted capacity demands of the Contracting Agencies are compared to the expected dates of completion of capital improvement projects necessary to meet those demands. Secondly, the expected costs are compared against the forecasted revenues based on the IEUA's budget and financial analyses. This allows projects to be prioritized and the Capital Capacity Reimbursement Payment (connection fee) to be adjusted to meet the identified needs of the system.

This Ten-Year Program includes ten-year and fifty-year wastewater flow forecasts, a description of the most significant capital improvement projects planned to meet those forecasts, a summary of the costs associated with the program, and a brief description of the financing package planned to implement the program. The financing program is consistent with the Agency's proposed Budget for FY 2007/2008 and the five-year business plan contained in that budget.

Besides keeping pace with forecasted capacity demands, this Ten-Year Program continues with implementation of the long-term programs established in the Wastewater Facilities Master Plan and related planning documents described above. It provides proactive solutions to challenges facing the Agency. The program increases self-generation of energy and improves energy efficiency--developing biogas and dairy waste digester gas as renewable energy sources and avoiding high energy costs and possible future shortages. It improves local water supplies, reducing the need for expensive imported water; and provides a long-term, sustainable solution to the problem of organics management, recycling 100 percent of the Agency's biosolids. Within the foreseeable future, the Agency expects to realize substantial avoided costs as a result of these initiatives.

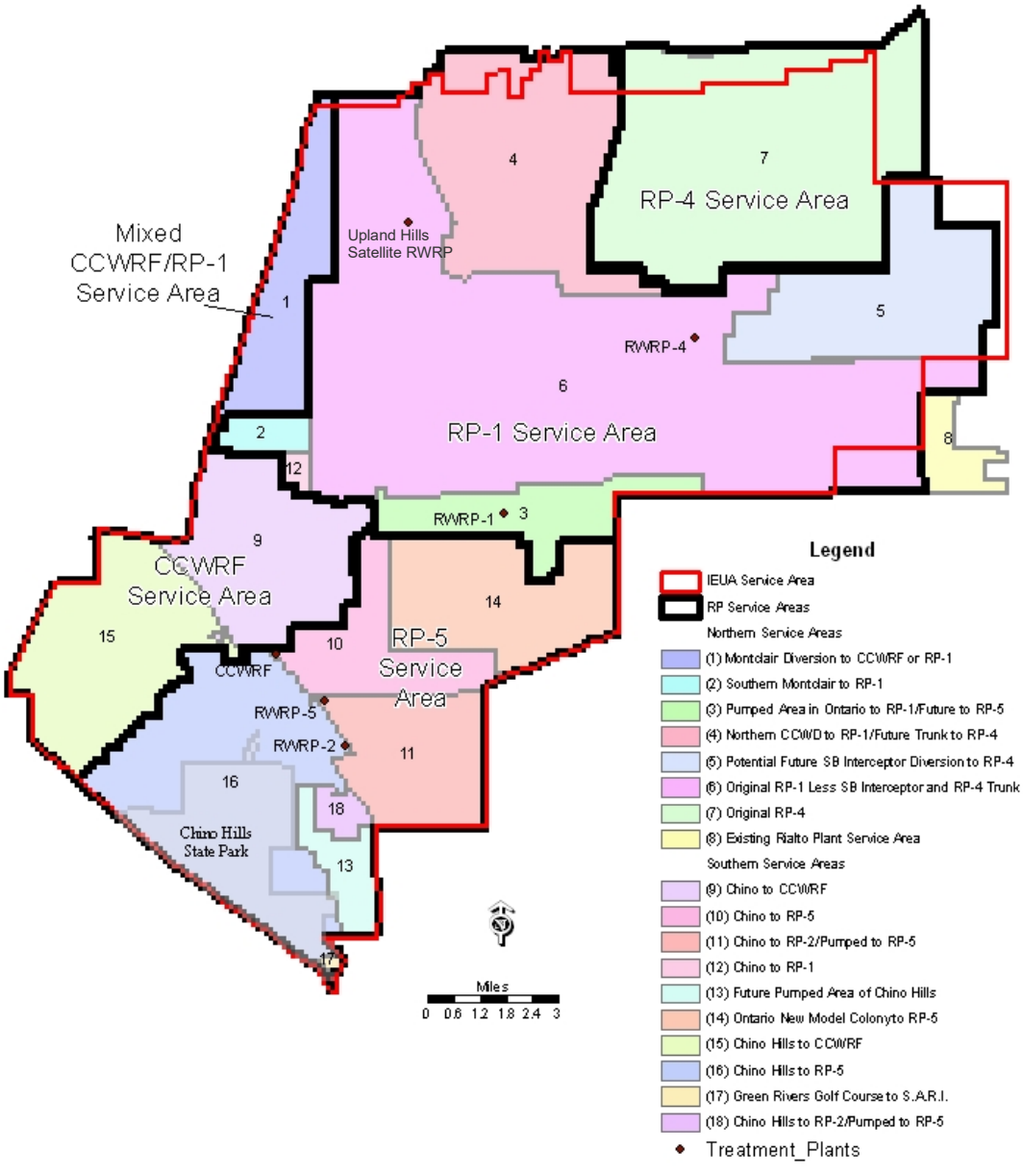
1.7 MAJOR FACILITIES

1.7.1 Water Recycling Plants

Figure 1-3 illustrates the service area boundaries for IEUA's four wastewater treatment and water recycling plants. The four Regional facilities are: Regional Plant No. 1 (RP-1), Regional Plant No. 4 (RP-4), Regional Plant No. 5 (RP-5), and Carbon Canyon Wastewater Reclamation Facility (CCWRF). IEUA uses regional interceptors to bypass flow from one treatment plant to another. Currently, the regional interceptors can bypass flow from RP-4 to RP-1 and from CCWRF to RP-5. Additional regional interceptors are under construction, which will allow bypass of flow from RP-1 to RP-5. The following section describes the regional interceptors in more detail. IEUA recently acquired a small satellite water recycling facility, which produces recycled water used on the Upland Hills Golf Course. IEUA has also been evaluating sites for possible future additional satellite water recycling facilities.

RP-5 began treating and discharging wastewater in March 2004. At the same time, discharge was ceased from Regional Plant No. 2 (RP-2). Since portions of RP-2 are located in the 100-year flood plain, liquid wastewater processing at RP-2 has been discontinued and the plant is being used only for processing solids from RP-5 and CCWRF. Solids 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. Some land at RP-5 has been reserved for future solids processing facilities.

FIGURE 1-3
REGIONAL PLANT SERVICE AREA BOUNDARIES



1.7.2 Regional Interceptor System

Diverting or bypassing flow from one service area to another is possible using regional trunk sewers (interceptors). Figure 1-4 illustrates the existing regional trunk wastewater system and tributary areas. Domestic wastewater flows can be bypassed from RP-4 to RP-1 and also to CCWRF and RP-5 and/or the Non-Reclaimable Waste (NRW) System, while domestic wastewater flows may be diverted from CCWRF to RP-5 and to the Santa Ana Regional Interceptor (SARI). 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 several mgd from CCWRF to RP-5 through the Chino Interceptor,

- A portion of the flow (approximately 2.5 mgd) from the Cities of Upland and Montclair can be diverted either to RP-1, through the Montclair Interceptor, or to CCWRF through the Westside Interceptor. About 90 percent of the time, the flow goes to CCWRF, but it can be pumped to RP-1 by the Montclair Pump Station, and

- A portion of the flow from the City of Ontario, which is currently pumped to RP-1 for treatment, is anticipated to become tributary to RP-5 upon completion of the Eastern Trunk Sewer, also referred to as the RP-1/RP-5 Bypass.

As shown on Figure 1-4, IEUA has three wastewater lift stations:

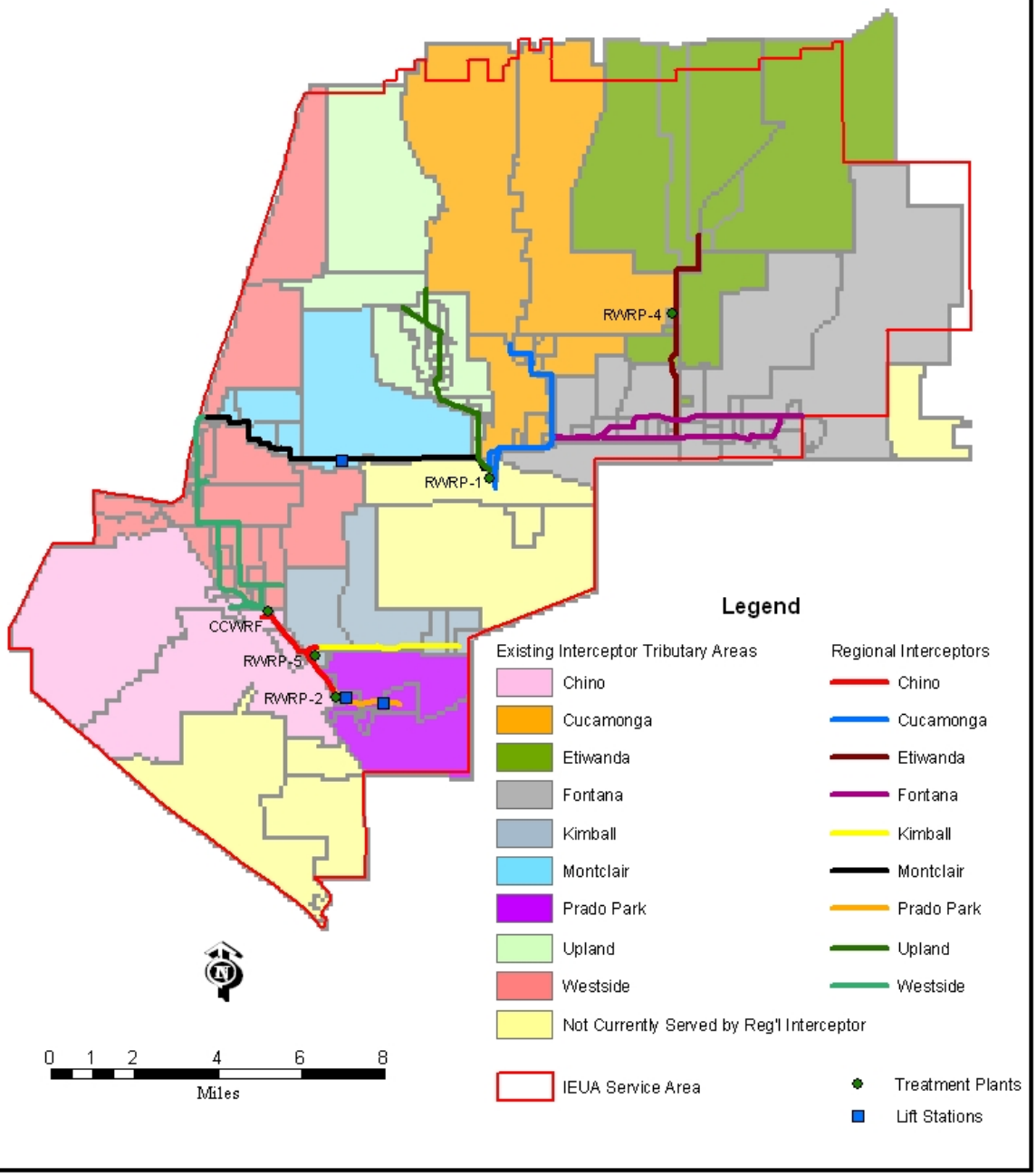
- The Montclair Lift Station pumps wastewater from portions of Montclair, Upland, and Chino to RP-1,

- The Prado Park Lift Station pumps wastewater from the Prado Regional Park in the City of Chino to RP-5, and

- A new lift station was constructed at RP-2 in FY 2003/2004 to pump the flow from the southeastern portions of the cities of Chino and Chino Hills to RP-5.

- A portion of the flow from Fontana that is tributary to RP-1 will be diverted to RP-4 through the San Bernardino Trunk and Lift Station when it is complete in 2007.

FIGURE 1-4
EXISTING REGIONAL TRUNK WASTEWATER SYSTEM AND TRIBUTARY AREAS

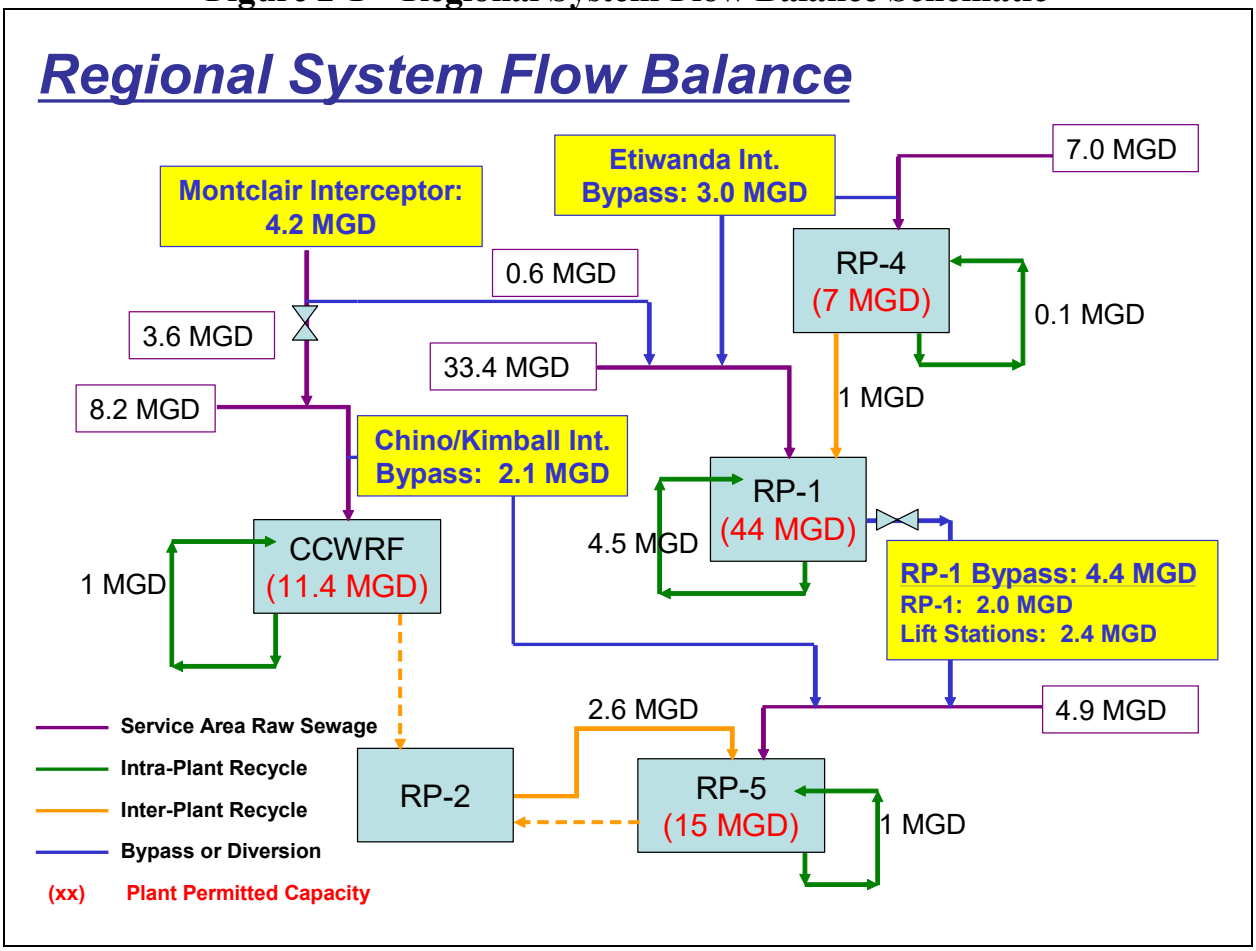


2.0 WASTEWATER FLOW PROJECTIONS

Exhibit I, at the end of this report, shows wastewater flow projections for the next ten years, in the IEUA service area. Exhibits II through V show the baseline flow projections for the RP-1, RP-4, CCWRF and RP-5 service areas compared to plant capacity. The baseline flow is defined as any flow tributary to a treatment plant. The baseline projections do not reflect any of the current or planned diversions or bypasses that were discussed in Chapter 1. Exhibits VI through IX show diverted flow projections. These include any major CIP projects, in the next ten years, for RP-1, RP-4, CCWRF and RP-5 that will result in a diversion of flow. The diverted flow is defined as any baseline flow being re-routed to a plant other than what is tributary to that flow. Appendix A contains the incremental EDU growth projections provided by the Contracting Agencies.

During FY2006/2007 there were extensive efforts by the Operations' two departments, Technical Services and, Pre-Treatment and Source Control to monitor wastewater flows at the regional plants and within the regional system, respectively.(Figure 2-1). At each treatment plants, detailed accounts of flows at the head works, between the process units including, returned and recycled streams and, from the solids handling facilities were logged. Also, diversion scenarios between the RP's were analyzed and stress tests at one of the RP's were conducted to determine the bottlenecks within the plant. The outcome of the flow studies were used to determine the actual existing capacity for each RP and to establish existing plant influent flows to help in verifying the service area raw sewage flows.

Figure 2-1 – Regional System Flow Balance Schematic



The data obtained from the flow monitoring efforts undertaken by the contracting agencies and the IEUA revealed that the gallons per day of wastewater flows associated with each EDU is decreasing due to conservation practices and use of water efficient appliances in new developments. Per EDU flow rates as low as 186 gallons per day were measured, with an average of roughly 230 gallon per day per EDU (gpd/EDU). As additional monitoring studies are performed, at more locations, throughout the regional collection system, the total wastewater flow accounted for is approaching the total measured as influent raw wastewater to the RP's.

2.1 ANTICIPATED GROWTH

As indicated in Appendix A, the average rate of EDU growth over the next ten years was projected by the Contracting Agencies at 6,700 EDU's per year. In the past, wastewater flow rates have been projected from these data using a factor of 270 gallons per day per EDU, as specified in the Regional Sewage Service Contract—Exhibit J. However, for exhibits I-IX a factor of 200 was applied to compensate for conservation efforts and new technologies. (It should be noted that IEUA still plans its Capital Projects around Exhibit J, but the average flow factor, per EDU, has decreased and is expected to continue to decrease, due to new technology and conservation efforts.) The anticipated flow increases within the system are summarized in Table 2-1. During the Spring of 2006, IEUA asked the noted economist of the Inland Empire region, John Husing, to prepare a "build-out" forecast for the IEUA

service area (June 2006) This report forecasted build-out by 2030. The pace of development to build-out will be different for each sector of construction. The industrial build-out is anticipated to occur in approximately 2018, followed by office market to build-out in roughly 2023. In around the same year the single family residential land is predicted to build-out. The multi-family residential market and retail-commercial developments are expected to reach saturation in 2020 and 2030, respectively. The above projections and their future revisions will form the basis for growth forecast and timely expansion of the IEUA collection and treatment systems.

About a 30-percent increase in total system flow is expected over the course of the next ten years. Last year's growth forecast projected a 35-percent increase. Development activity within each treatment plant tributary area is expected to grow in the next ten years, some more than others. Tributary areas around RP-5/RP-2 may more than double the flow. Higher growth in the southern service areas are due to annexation of the agricultural preserve in southeastern Chino and southern Ontario and approval of development plans in those areas. Tributary areas around RP-1 and RP-4 are expected to have a steady increase over the next ten years. Continued growth in the RP-4 service area will increase flow by about 50 percent.

For each service area, Table 2-1 compares the anticipated regional plant flows on both an "unadjusted" basis and an "adjusted" basis. With the planned regional plant expansions, diversions, and bypasses, the overall treatment plant capacity utilization is expected to increase to 87 percent. The planned expansions include:

- Expansion of RP-4 from 7 mgd to 14 mgd occurring in FY 2006/2007 (see Exhibit III), and
- Upgrades of RP-5 treatment units to increase the plant capacity to beyond 15 mgd in FY 2009/2010 (see Exhibit V).

The expansions at RP-4 and RP-5 will provide sufficient capacity (87 mgd) to treat the forecasted total system flow of 79 mgd in 2015/2016.

This Ten-Year Program results in the capacity utilization at RP-4 and CCWRF being higher than at the other plants. This is partly due to the need for system equalization. The Ten-Year Program allows the Agency to achieve the twin goals of: (1) increasing reuse potential in the Combined RP-1/RP-4 Service Area by keeping more flow at RP-4; and (2) optimizing capacity utilization at the other three regional plants by balancing flows between the Combined RP-1/RP-4 Service Area and the Combined CCWRF/RP5 Service Area.

Table 2-1 Regional System Flow and Capacity Utilization Summary (mgd)

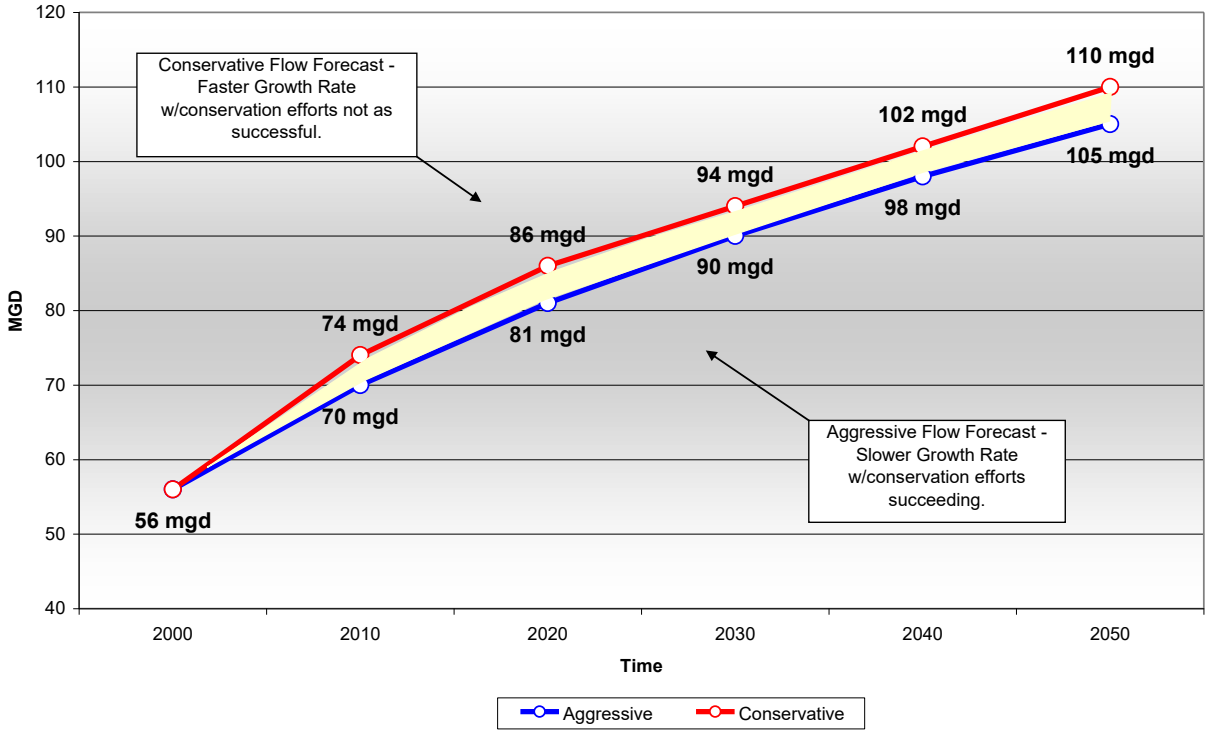
	FY 2006/2007 Forecast				FY 2015/2016 Forecast			
Treatment Plant	Estimated Service Area Flow	Adjusted Influent Flow	Capacity	Percent Capacity Utilization	Estimated Service Area Flow	Adjusted Influent Flow	Capacity	Percent Capacity Utilization
	(Unadjusted)			(Adjusted)	(Unadjusted)			(Adjusted)
RP-1	39.74	34.32	44.0[2]	77%	43.83	38.03	44.0[2]	86%
RP-4	6.78	9.74	14.0	70%	9.94	12.84	14.0	92%
CCWRF[1]	10.44	9.55	11.4	84%	11.25	11.25	11.4	99%
RP-2/RP-5	7.11	10.46	15.0	70%	14.91	17.81	18 mgd	66%

Total	**64.07**	**64.07**	**84.4**	**76%**	**79.93**	**79.93**	**87.4**	**83%**
[1]Unadjusted CCWRF service area includes all flow from Montclair Diversion.								
[2] Capacity rating of 44 mgd is under evaluation due to revised Total Inorganic Nitrogen standard of 8 mg/l.								

2.2 FIFTY-YEAR FLOW PROJECTION

As indicated in Figure 2-2 ("Regional System 50-Year Flow Projections"), wastewater flows have been projected to reach somewhere between a low of 105 mgd to a high of 110 mgd by the year 2050. This projection was developed using current, historical & future growth as part of the comprehensive Wastewater Facilities Master Plan that was adopted in August of 2002. The Master Plan presented 50-year growth projections based on two different methods – the Historical Trend Method and the Population and Land Use Method. In Figure 2-2, the lower curve is a more aggressive projection. It considers conservation & technological advances as successful, as well as a slower growth rate. The higher curve is a more conservative projection. It considers conservation & technological advances not as successful, as well as a faster growth rate. The Contracting Agencies' growth forecasts (Current TYCIP Trend) for the next ten years continues to correspond closely to the more conservative projections, showing a faster growth rate.

Figure 2-2
Regional System 50 Year Projection



3.0 REGIONAL WASTEWATER SYSTEM CAPITAL IMPROVEMENT PROGRAM SUMMARY

3.1 OVERVIEW

The capital improvements planned for the Regional Wastewater System are implemented according to the recommendations in the Agency's adopted Wastewater Facilities Master Plan (WFMP). 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. The adequacy of the capital improvement program is demonstrated by the projected flow and capacity comparisons for individual regional plants presented in Exhibits IV through VII at the end of this report. Adjustments to the forecasted flow curves take into account the Agency's ability to make planned diversions within the system to optimize the use of existing capacity. Capacity-related capital improvements are also indicated on the adjusted flow curves.

Because of forecasted growth, expansion of existing wastewater facilities will be required to treat expected domestic wastewater flows. The increases in regional plant treatment capacity planned for the next ten years to keep pace with the forecasted growth include the following:

- Complete expansion of RP-4 liquids treatment capacity from 7 to 14 mgd in FY 2006/2007 (May 2007),
- Upgrades of RP-5 treatment units to increase the plant capacity to beyond 15 mgd in FY 2009/2010 (see Exhibit V).

Following the recommendations of the WFMP, the Agency plans to expand RP-4 first to facilitate recycled water use at higher elevations and to expand RP-1 at a later date. This will allow better quality water (lower in salts) to be treated higher in the watershed where it can be utilized for industrial applications, irrigation, and groundwater replenishment. Opportunities for water recycling will be maximized by diversion of wastewater to RP-4 from some portions of CVWD and the City of Fontana now tributary to RP-1. Construction of the San Bernardino Avenue Pump Station and Force Main are part of the WFMP and Ten-Year CIP.

Completion of the eastern RP-1/RP-5 bypass pipeline by June 2006 will help to optimize existing system capacity and defer the need for construction of more RP-1 treatment capacity until beyond the

TYCIP window. It will also have odor control benefits at RP-1 by eliminating the need for storing primary-treated wastewater in equalization ponds. The pipeline will be jointly constructed and operated with the City of Ontario and will provide IEUA with at least 9 mgd of capacity that can be used to bypass flow from the RP-1 Service Area to the RP-5 Service Area.

Current growth projections indicate that an expansion of RP-5 may be needed by FY 2010/2011. The 2005 Master Plan Update will analyze the needs for capacity at RP-5 to handle service area flows, as well as bypass flows from other service areas, and solids recycle streams from other facilities.

In addition to providing needed liquids and solids treatment capacity, the TYCIP includes projects to improve energy efficiency and modernize facilities. Many of the projects have multiple benefits, including reduction of the weight of solids, reducing odors and lowering the nitrogen concentration in recycled water. The California Regional Water Quality Control Board, Santa Ana Region has imposed a lower nitrogen limit in new and renewed discharge permits. At the same time, the strength of the wastewater coming to the Agency, in terms of organic load and ammonia concentration, has increased significantly due to water conservation and drought. The TYCIP includes several projects to increase the overall capacity of RP-5 to handle this waste, including upgrades to influent pumping and the aeration system air supply blowers.

3.1.1 RP-1 Service Area

As indicated in Exhibit IV ("RP-1 Flow Forecast"), the gross service area flow tributary to RP-1 is expected to increase at an average rate of about 0.9 mgd per year over the next ten years. The WFMP projected that approximately 20 mgd of average daily wastewater flow may ultimately need to be bypassed from RP-1 to RP-5 because more wastewater is generated in the RP-1 Service Area than can be accommodated in the planned treatment facilities. The Agency intends to utilize the City of Ontario's master planned trunk sewers for the New Model Colony (i.e., the Eastern Trunk Sewer and the Western Trunk Sewer) to serve this purpose. Completion of the bypass will allow the City of Ontario to phase out the use of their lift stations which now pump wastewater to RP-1 from areas of the City that cannot gravity flow to RP-1. The Eastern Trunk Sewer portion of the RP1/RP-5 Bypass is expected to be completed by June 2006. The City of Ontario and IEUA entered into a joint use agreement by which they share the costs of design and construction and IEUA is guaranteed at least 9 mgd of average daily flow capacity in the trunk sewer.

The Bypass will also be utilized to facilitate odor control at RP-1. Through bypassing a portion of RP-1's peak dry weather flow, it will be possible to reduce or eliminate the need for storage of primary effluent in the large, on-site primary effluent equalization basins at RP-1, except during wet weather. The storage of primary effluent generates odors, and the Agency plans to reduce the need for primary effluent storage by bypassing the peak daily flows to RP-5 during dry weather.

The adjusted RP-1 flow projection in Exhibit IV includes bypassing 2 mgd from RP-1 to RP-5 for odor control. Also included is bypassing another 3.6 mgd as the City of Ontario phases out the use of lift stations that now pump wastewater to RP-1. It is expected that wastewater pumped by at least three of the City's lift stations will begin to flow by gravity to RP-5 through the Eastern Trunk Sewer and Kimball Interceptor in FY 2007/2008. By the end of the ten-year period, two more lift stations could be eliminated. In addition, in FY 2008/2009, with the completion of the first expansion of RP-4 and the San Bernardino Avenue Pump Station and Force Main, it is forecasted that at least 4 mgd will be diverted from RP-1 to RP-4.

The WFMP recommended process upgrades at RP-1 to cost-effectively maintain or increase treatment process performance and capacity as lower nitrogen limits take effect. A major project which was outlined in the WFMP, "RP-1 Secondary Treatment System Modifications/Install Blower #4," is scheduled to be designed and constructed between FY 2005/2006 and FY 2009/2010. The project will increase nitrogen removal while maintaining or increasing plant capacity. The TYCIP also includes a smaller aeration capacity and side stream treatment project, including: "RP-1 Filtrate Treatment Expansion," which is scheduled to be completed in FY 2014/2015. The filtrate treatment expansion project will enable the solids dewatering filtrate to be recycled in-plant without adversely affecting the plant's ability to meet nitrogen limits. Currently, the filtrate is discharged to the non-reclaimable wastewater system with minimal treatment, but the Agency must pay for the pounds of pollutants (BOD and TSS) discharged. Recycling in the plant will save those costs and take advantage of excess secondary treatment capacity.

The Ten-Year Program includes several odor reduction projects at RP-1 that will provide comprehensive odor control in phases. The Phase 1A project (construction began in FY 2004/2005 and was completed in January 2006) includes most of the solids handling areas of the plant. Phase 1B (construction to begin in FY 2005/2006) includes the plant headworks, grit and screenings area, and rectangular primary clarifiers. The equalization project will not begin until FY 2014/2015, since the odors from the equalization basins can be controlled on an interim basis by discharging peak flows to the RP-1/RP-5 Bypass line. This approach was developed in the WFMP.

There are also several solids handling projects planned for RP-1. These projects will automate the dewatering building, replace the belt filter presses with centrifuges, increase dewatered solids storage hopper capacity, and improve the dewatered solids conveyance and truck loading system. These improvements will reduce labor, energy, and hauling costs associated with the dewatering operations. Improvements to the 3-phase digesters and digester gas storage system commenced in FY2004/2005.

The RP-1 capital projects are summarized in Table 3-1 below:

This Ten-Year Program is similar to last year's program for the RP-1 Service Area, with a few exceptions. Several RP-1 improvement projects from the previous TYCIP have been combined into the RP-1 Facilities Improvement Project..

Table 3-1: RP-1 Service Area —Major Capital Projects

Project	*Scheduled Completion*	*Ten-Year Cost (in Million Dollars)*
RP-1 Facilities Improvements	**Fiscal Year 2010/2011**	**30.7**
RP-1 Secondary Treatment Odor Control Filtration and Redundancy	**Fiscal Year 2013/2014**	**30.2**
All Facilities Capital Upgrade	**Fiscal Year 2016/2017**	**30.0**
RP-1 Dewatering Facilities Expansion	**Fiscal Year 2009/2010**	**14.3**
All Facilities Condition Assessment	**Fiscal Year 2016/2017**	**10.5**

RP-1 Plant Equipment Improvements	**Fiscal Year 2016/2017**	**10.0**
RP-1 Aeration Modification	**Fiscal Year 2008/2009**	**8.5**
RP-1 Cogeneration Facility Expansion	**Fiscal Year 2011/2012**	**8.3**
RP-1 Regional Facility Chemical & Control Automation	**Fiscal Year 2009/2010**	**4.6**
RP-1 3-Phase Digestion Improvements	**Fiscal Year 2008/2009**	**4.4**
RP-1 Odor Control—Phase I	**Fiscal Year 2008/2009**	**4.4**
RP-1 Modernization	**Fiscal Year 2014/2015**	**4.4**
RP-1 Upgrades at Primary, Sludge & Energy Recovery	**Fiscal Year 2010/2011**	**4.3**
RP-1 Tertiary Filter Expansion	**Fiscal Year 2011/2012**	**3.8**
Total—Major RP-1 Projects		*168.4*
Total—All RP-1 Projects		*202.7*

3.1.2 RP-4 Service Area

As indicated in Exhibit V ("RP-4 Flow Forecast"), the RP-4 service area wastewater flow is expected to increase at an average rate of about 0.5 mgd per year over the next ten years. RP-4 will need to be expanded from 7.0 to 14.0 mgd by FY 2007/2008 and then from 14.0 to 21.0 mgd by FY 2016/2017 (outside the TYCIP) to keep up with projected growth. While construction is occurring at RP-4, some flow will be diverted to RP-1 through the Etiwanda Interceptor.

This Ten-Year Plan includes design and construction of the San Bernardino Avenue Interceptor, Pump Station and Force Main facilities coinciding with completion of the RP-4 expansion to 14 mgd. The City of Fontana will construct a new gravity sewer and divert a portion of the wastewater originating north of San Bernardino Avenue away from the Fontana Interceptor toward the intersection of San Bernardino Avenue and the San Sevaine Wash. (Currently, this wastewater flows by gravity through the Fontana Interceptor to RP-1). A pump station and force main will then be constructed by IEUA from the San Sevaine Wash to RP-4, where the wastewater will be treated and recycled.

The adjusted RP-4 flow forecast in Exhibit V indicates that RP-4 may be approaching full capacity at the end of FY 2011/2012. Bypassing of up to 6 mgd to RP-1 is possible using the Etiwanda Interceptor. To avoid bypassing wastewater flow, a second expansion of RP-4 is needed in FY 2016/2017. This expansion is consistent with the WFMP, which projected that a second expansion of RP-4 would be needed before the year 2020.
The RP-4 capital projects are summarized in Table 3-2 below:

Table 3-2: RP-4 Service Area —Major Capital Projects

Project	*Scheduled Completion*	*Ten-Year Cost (in Million Dollars)*
San Bernardino Ave Pump Station/Force Main	**Fiscal Year 2008/2009**	**11.0**
San Bernardino Pump Station By Pass	**Fiscal Year 2009/2010**	**7.6**
RP-4 Gravity Line to San Sevaine Channel	**Fiscal Year 2009/2010**	**5.9**
RP-4 Recycled Water Storage Land Acquisition	**Fiscal Year 2007/2008**	**4.1**
Total—Major RP-4 Projects		*28.6*
Total—All RP-4 Projects		*32.0*

For the RP-4 service area, this Ten-Year Program is similar to last year's program with one exception. The projected expenditures decreased because the RP-4 liquids expansion project from 14 to 21 mgd now falls outside the ten-year window.

3.1.3 CCWRF SERVICE AREA

Exhibit VI depicts the CCWRF historical flow rates and flow forecast. For the past few years, essentially all of the flow from the Montclair Diversion has been directed to CCWRF rather than RP-1 to avoid pumping costs. In mid-FY 2003/2004, just before the completion of RP-5, CCWRF was close to 100 percent of capacity and a small amount of Montclair Diversion flow was pumped to RP-1 or bypassed to RP-2. With RP-5 in operation, it is possible to balance flows operationally between CCWRF and RP-5 using the Chino Interceptor as a bypass line. It is expected that about 1.1 mgd will be bypassed from CCWRF to RP-5 until FY 2007/2008, when the CCWRF Tertiary Filter and Contact Tank Expansion/Upgrade project is completed.

Over the next ten years, the unadjusted service area flow tributary to CCWRF is expected to increase at an average rate of under 0.1 mgd per year. At this rate, it will not be necessary to expand CCWRF during the next ten years. This forecast is consistent with the WFMP, which projected the need to expand CCWRF to between 15 and 20 mgd between the years 2020 and 2030.

An additional 1.2 mgd of capacity became available at CCWRF in March 2004 when the Agency began sending the solids handling recycle streams generated at RP-2 to RP-5 instead of to CCWRF. The discharge permit for CCWRF allows 11.4 mgd to be treated at the facility. With the recycle flow eliminated from CCWRF, the available capacity for treating service area flow at CCWRF is 11.4 mgd.

The CCWRF capital projects are summarized in Table 3-3 below. The Ten-Year Plan includes a project to expand the tertiary filters and chlorine contact tanks to maintain the current 11.4 mgd of capacity while satisfying the current Title 22 design standards for water recycling plants. In addition, the Ten-Year Plan includes modification of the aeration system at CCWRF to increase energy

efficiency and improve recycled water quality. The other major project is an expansion of the recycled water storage reservoir at CCWRF to better match recycled water availability to diurnal demand fluctuations. This year's Ten-Year Plan for CCWRF is similar to last year's plan.

Table 3-3: CCWRF Service Area —Major Capital Projects

Project	*Scheduled Completion*	*Ten-Year Cost (in Million Dollars)*
CCWRF Tertiary Filters and Contact Tank Expansion	**Fiscal Year 2010/2011**	**11.8**
CCWRF Aeration System Modification	**Fiscal Year 2009/2010**	**4.6**
CCWRF Aeration Pipes Repair	**Fiscal Year 2010/2011**	**2.0**
Total—Major CCWRF Projects		*18.4*
Total—All CCWRF Projects		*20.0*

3.1.4 RP-2/RP-5 Service Area

Exhibit VII depicts the RP-2/RP-5 historical flow rates and flow forecast. Historically, much of the tributary area to RP-2 was unsewered agricultural and open space. The flow from the service area is expected to increase sharply in the next few years due to annexation, development, and sewering of those areas. Completion of the RP-1/RP-5 Bypass will bring more flow into the Regional System. The RP-5 unadjusted service area flow is projected to increase at an average rate of about 0.5 mgd per year. At the end of the ten-year period, the gross service area flow to RP-5 will be about 10.6 mgd. An additional 5.8 mgd will be bypassed to RP-5 from areas now tributary to RP-1. This includes 3.8 mgd from City of Ontario lift stations that will be replaced by the RP-1/RP-5 Bypass is completed; and 2.0 mgd of diurnal peak flows from the RP-1 Equalization Basins.

The total adjusted influent flow rate to RP-5 may be as high as 16.4 mgd by the end of the ten years. The current total plant capacity is 15.0 mgd and current flow projections indicate that an expansion of RP-5 would be needed in the second half of the ten-year planning period. This is consistent with the WFMP, which projected the need for an expansion at RP-5 by the year 2010. This Ten-Year Plan includes an expansion from 15 to 27 mgd. The project is scheduled to begin in FY 2005/2006 and be completed in FY 2013/2014. This schedule may be adjusted depending on actual growth over the next few years.

The RP-2 and RP-5 capital projects are summarized in Table 3-4 below. This Ten-Year Plan includes a project for decommissioning the liquids treatment systems at RP-2. Equipment will be salvaged, reused elsewhere, or stored as appropriate. The RP-2 solids treatment systems will continue to handle the solids from RP-5 and CCWRF. Some solids handling improvements at RP-2 are provided in this Ten-Year Plan. Eventually, 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 construct new solids handling facilities at RP-5. However, this is not planned for ten to twenty years. RP-2 has enough solids handling capacity for 30 mgd of wastewater flow, whereas the combined flows at RP-5

and CCWRF will only be about 26 mgd at the end of the ten-year period. In addition the grant funded RP-5 Renewable Energy Digesters (Dairy Digesters) will be used for municipal solids handling in the future (probably by 2015).

Table 3-4: RP-2/RP-5 Service Area —Major Capital Projects

Project	*Scheduled Completion*	*Ten-Year Cost (in Million Dollars)*
RP-5 Capacity Improvements	**Fiscal Year 2015/2016**	**37.7**
New Operation Laboratory	**Fiscal Year 2010/2011**	**15.0**
RP-2 Decommissioning	**Fiscal Year 2016/2017**	**8.0**
RP-5 Maintenance Facility	**Fiscal Year 2010/2011**	**6.0**
RP-2 Dewatered Cake Storage System	**Fiscal Year 2009/2010**	**4.6**
RP-2 Daft System Modification	**Fiscal Year 2008/20009**	**3.0**
RP-5 System Facility Upgrade & Improvement	**Fiscal Year 2007/2008**	**2.7**
RP-2 Solids Handling Automation	**Fiscal Year 2008/20009**	**2.6**
Total—Major RP-2/RP-5 Projects		*79.6*
Total—All RP-2/RP-5 Projects		*87.0*

The RP-5 Renewable Energy Generation Efficiency Project will be designed and constructed at the RP-5 Renewable Energy Facility to reduce the Agency' purchase of electrical power and advance the development of renewable energy through the use of both conventional and innovative power generation equipment. The design process will incorporate the use of biogas derived from manure digesters and wastewater plant digesters, as well as natural gas, and will investigate waste heat recovery and thermal ice storage.

The Complete-Mix Anaerobic Manure Digester project will demonstrate the application of complete-mix digestion technology for the processing of manure generated by dairies in the Agency's service area. It will provide an alternative to the plug-flow digestion technology that has been demonstrated by the Agency's RP-5 Renewable Energy Digester Facility. This project will produce energy from methane gas that will be used by the Agency's regional water recycling facilities and local groundwater desalination facilities. The Complete-Mix Anaerobic Manure Digester is planned to be designed and constructed in FY 2005/2006 through FY 2006/2007.

The TYCIP also includes a project to expand and modify the existing RP-5 Renewable Energy Digester Facility. Improvements within the facility are expected to expand the digester's capacity from 225 wet tons per day to 315 wet tons per day and to generate additional digester gas which will be used to power Agency facilities. The Agency successfully tested digestion of food wastes at the RP-5 Renewable Energy Digester Facility. The expansion and modification projects for the RP-5

Renewable Energy Digester Facility include facilities to introduce food wastes in the digesters to enhance biogas production and improve the overall economics of the project.

This Ten-Year Plan also provides for completion of the site improvements around the new RP5/Headquarters complex. The Agency plans to complete the Chino Creek Park environmental restoration project which will provide stormwater management for the complex and utilize recycled water for ecosystem restoration as well as providing recreational benefits to the community. The major projects planned for the RP-5 treatment plant site are a warehouse/maintenance facility; perimeter walls, street improvements and access ways; and general land restoration and property development for the vacant and leased land around the site. The Agency also plans to prepare a Master Plan for Chino Creek, which receives effluent from two water recycling plants – RP-5 and CCWRF. The Chino Creek Master Plan will address how the stream can be modified, restored, and enhanced, emphasizing natural features and wetlands to improve water quality while meeting multiple objectives, such as flood control, habitat development, and recreation. Related to the Chino Creek Master Plan, there is a study to determine future uses of the RP-2 site including, possibly, urban runoff treatment or dairy waste/runoff treatment.

4.0 RECYCLED WATER CAPITAL IMPROVEMENT PROGRAM

The Recycled Water Program has been developed to be consistent with the recommendations of the IEUA Recycled Water System Feasibility Study, completed in 2002, and the 2005 Regional Recycled Water Program Implementation Plan. The Agency plans to construct a fully-integrated regional distribution system that will deliver recycled water to major industrial and municipal users and to groundwater recharge basins.

4.1 BACKGROUND

IEUA has been serving recycled water since the beginning of the Regional Contract in 1972. Initially recycled water was delivered to Whispering Lakes Golf Course and Westwind Park in Ontario and Prado Park and Golf Course. In the early 1990's IEUA planned and built the first phase of the Carbon Canyon Recycled Water Project which now serves several customers in Chino and Chino Hills.

IEUA also initiated planning of a regional recycled water delivery system. This planning effort culminated with the completion of the IEUA Regional Recycled Water Program Feasibility Study in January 2002. The Feasibility Study identifies facilities to deliver over 70,000 acre-feet of recycled water per year (AFY) to customers and recharge sites throughout the service area. In 2004, IEUA initiated development of the Regional Recycled Water Program Implementation Plan which updated information from the 2002 report. The Implementation Plan identifies additional future recycled water demand, primarily in the developing areas of Chino and Ontario increasing the total deliveries to approximately 93,000 acre-feet per year. The plan identifies a phased implementation over the next ten years with provision for additional expansion beyond the ten year planning horizon. The estimated cost of the facilities planned for the next ten years is $150 million to be funded by a combination of state and federal grants, state low-interest loans, MWD LRP rebates and Regional Program funds. The actual schedule of implementation will depend on the availability of grant funding and changing recycled water facility needs. The following are significant events leading up to the 2004 Implementation Plan that was completed in 2005:

- 1972 Regional Contract , IEUA begins delivery of recycled water
- 1993 Recycled Water Master Plan
- 1995 Carbon Canyon Recycled Water System Plan

- 1998 Carbon Canyon Recycled Water System Initial Deliveries
- 2001 Recycled Water Facilities Planning Study
- 2002 Regional Recycled Water Program Feasibility Study
- 2002 Program EIR
- 2003 SWRCB Grant ($5 million) Loan ($15 million) Approved
- 2003 Initiate Construction of Phase I Facilities
- 2005 Regional Recycled Water Program Implementation Plan
- 2006 Initiate construction of Phase II Facilities.
- 2007 Initiate construction of Phase III facilities

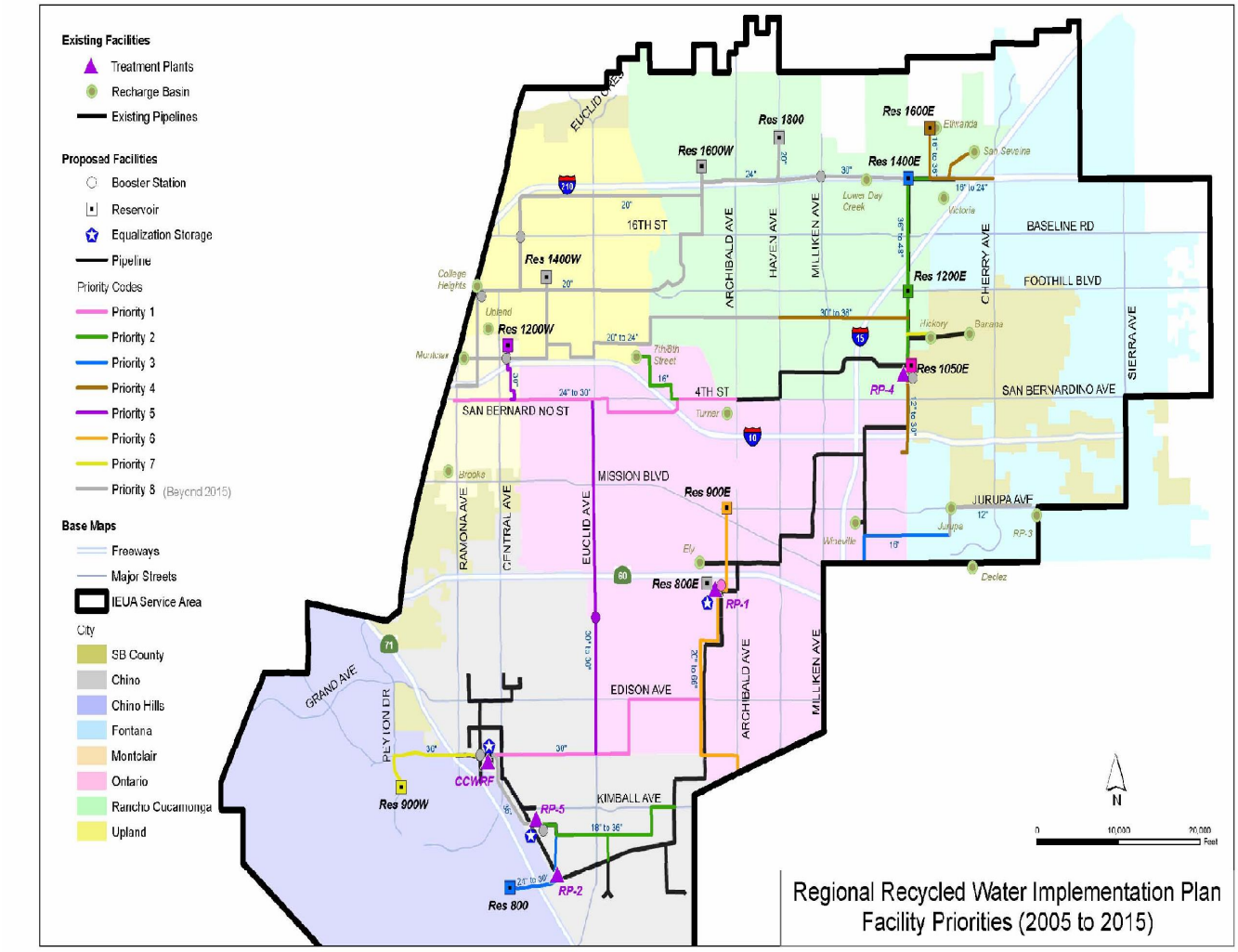
4.2 REGIONAL RECYCLED WATER PROGRAM:

The 2002 Feasibility Study and 2005 Implementation Plan included an assessment of the potential recycled water customers within the IEUA service area. Staff worked with the regional agencies to identify over 1,900 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. Ultimately, this distribution system layout will serve over 1,200 of the largest customers and supply over 93,000 AFY, which includes 33,800 AFY for recharge.

4.2.1 ***Regional Recycled Water Priorities*** **–** In September 2000, the IEUA Board and Regional Technical and Policy Committees adopted a recycled water policy document which defines the roles and responsibilities of IEUA and the Regional Contracting Agencies for the construction and ownership of the regional and local facilities. Regional facilities are defined as facilities, 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 IEUA. Local facilities will deliver recycled water from the regional facilities to customers within a Contracting Agencies service area and will be the responsibility of the respective agency. Local facilities will primarily be pipelines (local laterals) and may also include some pump stations and reservoirs. In 2007, this policy will be updated 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 Regional Recycled Water Priorities consist of a looped pipeline system which connects all four Regional Water Recycling Plants. Future satellite plants, identified in the Wastewater Master Plan, will also be connected to the regional facilities. The regional facilities have been described in over 50 separate projects of pipelines, pump stations and reservoirs. These projects have been grouped into priorities. The priority of each phase was determined based on the amount of recycled water each phase could serve and the proximity of each phase to one of the plants or existing recycled water supply. Phase I and II of the program will deliver recycled water to most of the recharge sites since the recharge sites represent a significant recycled water use. The Regional Recycled Water Program Priorities are shown in Figure 4-1.

FIGURE 4-1
IEUA REGIONAL RECYCLED WATER PROGRAM PRIORITIES



4.2.2 ***Local Recycled Water Facilities*** **-** As described above, 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 their service area. IEUA staff is working closely with each agency to coordinate their recycled water planning efforts. In order to assist the local agencies with the implementation of their recycled water systems IEUA is providing technical assistance and, if requested, financing of the local agencies facilities. Funds for this financing are in

IEUA's budget and Ten Year Capital Improvement Plan (TYCIP), however, the amount of funding will depend on the agency's needs. A similar financing was used for the construction of the Carbon Canyon Recycled Water Project in the 1990's.

4.2.3 *Regional Recycled Water Program Summary*

Recently Completed Activities:

- Program Planning — Feasibility Study 2002
- Environmental Documentation — PEIR 2002
- Phase I Funding — SWRCB 2003
- MWD LPP Rebate Agreement — Amended 2003
- New Customer Connections — 12 in 2004
- DHS Recharge Permit — Public Hearing 2003
- RWQCB Basin Plan Amendment — Approved February 2004
- Customer Technical Assistance Contracts — July 2004
- Phase II Design Contract — June 2004
- DWR $9 million Grant — September 2004
- Phase I Design Complete — September 2004
- Phase I Construction — Complete
- Phase II Funding
    - SWRCB Grant & Loan — SWRCB Approved ($18 million)
    - USBR Grant — Congressional ($1 million grant)
- Customer Marketing Package — April 2005
- DHS and RWQCB Recharge Permit (Phase I) — April 2005
-
- New Customer Connections (5 totaling 2900 AFY) — June 2006
- Recycled Water Sales — 8,380 AF/Y (FY 2005-2006)

Current/ Near Term Status as of June 2007:

- DHS and RWQCB Recharge Permit (Phase II) — 2007
- Edison Avenue Pipeline — Complete
- Bickmore Pipeline — 2007
- 7th & 8th Street Pipeline — 2007
- San Antonio Channel Pipeline-Segment A — 2007
- TP-1 South Zone Pump Station — 2007
- San Antonio Channel Pipeline-Segment B — 2008
- New Customer Connections (5) — June, 2007
- Recycled Water Sales — 12,800 AFY (FY 2006-2007)

4.3 CURRENT TYCIP

The Recycled Water Capital Improvement (WC) Fund tracks the revenues and expenses associated with the development of the Agency's Recycled Water Program. Exhibit XI indicates that the total remaining ten-year budget for Recycled Water Capital Improvement Program projects ("Work in Progress") is $150 million for work planned in FY 2007/2008 through FY 2016/2017. As summarized in Table 4-1, the current Ten-Year Program includes $85 million for new pipelines and $70 million for new reservoirs. The budget also includes $1.7 million for other costs, such as

Program Administration/Planning and Technical Assistance for Marketing. The construction program is phased so that the most cost-effective projects can be brought on-line first. $11.2 million for land for recycled water projects is budgeted in Regional Program.

Table 4-1: Recycled Water (WC) Capital Improvement Program-Major Projects

Project	***Ten-Year Cost (in Million Dollars)***
Recycled Water Pipeline Projects	$84.8
Recycled Water Reservoirs	$69.6
Total – Major WC Projects	**$154.4**
Land for Phase II Recycled Water Projects	$11.2
Total – All Projects	**$165.6**

4.3.1 *Funding*:

Implementation of the Regional Recycled Water Program has been planned and scheduled with the use of state and federal grant funds and State Revolving Fund low interest loans to minimize use of regional capital funds. The following funding goals have been identified:

Recycled Water Program Ten Year Capital Expenditures $165.6 million

- Regional Capital Funds $15 - 20 million
- State Grants (SWRCB, DWR) $37 million
- Federal Grants (USBR) $21 million
- SWRCB Loans $88 million

Funding Status –

SWRCB: To date IEUA has received funding contracts from the SWRCB for $5 million in grant funds (SWRCB caps grants at $5 million) and up to $15 million in SRF loans for Phase I. In March 2006 IEUA received funding approval from SWRCB for Phase II projects. IEUA has approval of $4 million in grant funds and up to $14 million in SRF loans for the Phase II projects. A third phase application has been submitted and is under review

Federal Funding (USBR): IEUA is also working with our congressional representatives to obtain federal grant funds through the U.S. Bureau of Reclamation. In 2005, IEUA received a federal appropriation of $1 million for the recycled water program and is actively seeking additional appropriations over the next 3-5 years up to $20 million.

DWR: In 2003 IEUA and Chino Basin Watermaster submitted an application to the Department of Water Resources for Proposition 50 grant funds for: conjunctive use, recharge improvements and recycled water facilities. A total of $15 million is anticipated for these programs, $10.5 million for recycled water facilities. These funds have been used for the Edison Avenue Pipeline and the 7th and 8th Street Pipeline. The remaining funds will be used for the first of the Phase III projects. The Edison Avenue Pipeline will interconnect RP-1 with the Carbon Canyon Recycled Water System and

serve a significant agricultural demand in the near term and landscape irrigation demand as the area develops. The extension of the Wineville Avenue Pipeline, when complete, will provide recycled water to industrial users in Ontario and Fontana including several commercial laundries.

4.3.2 *Permitting*

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

- CEQA – IEUA certified a Programmatic EIR in June 2002 which included IEUA'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,

- Chino Basin Watermaster Article X approval for groundwater recharge is required under Watermaster's rules and regulations. IEUA obtained Watemaster'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 IEUA and Watermaster prepared a Maximum Benefit Concept Proposal to the Santa Ana Regional Water Quality Control Board 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,

- RWQCB Waste Discharge Requirements and NPDES permit for direct reuse – All of IEUA'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 IEUA reports new customers connected to the recycled water system and recycled water use for each customer,

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

- DHS Title 22 Engineering Report for Groundwater Recharge - Prior to recharge of recycled water an engineering report is required. The report is reviewed by DHS and a public hearing is required to solicit comments. IEUA prepared and submitted the Title 22 Engineering report for the seven recharge basins served by the Phase I facilities. A public hearing was held in December 2003 and several supportive letters and comments were provided, and

- 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 is expected to be issued by summer 2007. The DHS public hearing held in April 2006 received strong support and no opposition.

- **Summary of Permitting Status**

  - CEQA — Certified 2002
  - CBWB Article X — Approved 2002
  - SARWQCB Basin Plan Amendment — Approved 2004
  - SARWQCB Discharge Permit — Issued for all plants
  - DHS customer retrofits — Approved for connected customers
  - DHS/RWQCB recharge approval
    - Ely Basin 2,300 AFY — Approved 1998
    - Phase I Recharge 7,700 AFY — April 2005
    - Phase II Recharge 17,300 AFY — Summer 2007

4.3.3 *Customer Development*

As described above there are over 1,000 potential recycled water customers which can be served by the regional and local recycled water facilities. IEUA is working with the staffs of the local agencies to connect new customers to recycled water. Priority is given to the larger customers, typically over 25 AFY, which can be served immediately or in the near future. Currently there are 30 significant customers in Chino, Chino Hills, Ontario and CVWD which agency and IEUA staff are working with. In some cases a significant effort is required in order to get a customer connected to recycled water, particularly industrial customers and golf courses. These customers initially have concerns related to water quality and impacts on their systems, retrofit costs and the cost of the recycled water.

In order to effectively communicate with recycled water customers and provide a consistent message staff is preparing an updated recycled water marketing packet with the following information:

- Background on recycled water use Nationally and in California
- Overview of IEUA and Regional Recycled Water Program
- Summary of recycled water quality
- Comparison of potable and recycled water rates (specific to each agency)
- Technical assistance available (DHS approval, water quality concerns)
- Financing of on-site retrofit (up to ten years with interest)
- Benefits of using recycled water
  - Drought proof the region (improves reliability of potable supply)
  - Recycled water is not subject to mandatory rationing during drought
  - Recycled water provides regional environmental benefits
  - Cost savings
- Contacts with regional agency and IEUA

In addition, to address the customer concerns about recycled water use IEUA with the regional agency is preparing the Title 22 engineering reports for each site and coordinates the approval with DHS. Most of these reports have been prepared by staff, however, with the number of new customers and the more complicated industrial sites staff resources will be exceeded. In 2004, five consultants were selected to prepare the Title 22 engineering reports and to assist marketing recycled water to the potential customers. Due to these efforts, the recycled water demand in FY 2007 is expected to increase by 50% from the prior year, from 8,400 acre-feet to over 12,800 acre-feet.

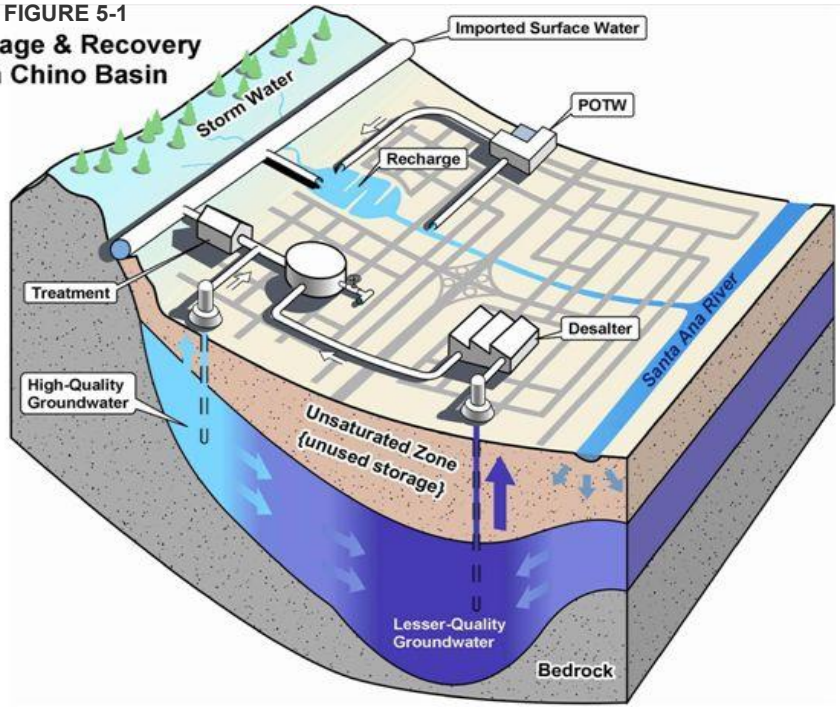
5.0 RECHARGE WATER CAPITAL IMPROVEMENT PROGRAM

5.1 BACKGROUND

The Chino Basin Watermaster and IEUA joint recharge program partnership is described in the Chino Basin Watermaster'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, since it is through the development of increased recharge capacity in the Basin that greater quantities of water can be stored and made available during drought resulting in shortages of imported water supply.

Figure 5-1 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 5-1
Storage & Recovery in Chino Basin



In January of 2002, the IEUA Board of Directors approved the Recharge Master Plan Implementation Memorandum of Agreement, between Chino Basin Watermaster, Chino Basin Water Conservation District, San Bernardino County Flood Control District (SBCFCD), and IEUA. 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) that resulted in construction projects to improve the recharge program's recharge facilities. The IEUA serves as the lead agency for implementation (design, construction, operation, and maintenance) of this cooperative program.

Full implementation of the Recharge Master Plan is anticipated to include 134,000 AFY recharge capacity in the Chino groundwater basin. Recharge capacity of the recharge basins are detailed in Table 5-1, and are expected to be made up of:

- 20,600 AFY of stormwater,
- 89,040 AFY of imported water, and
- 24,360 AFY of recycled water from the IEUA's Regional Water Recycling Plants.

Table 5-1 Chino Basin Potential Source Water Recharge Capacities (Acre-Feet per Year)

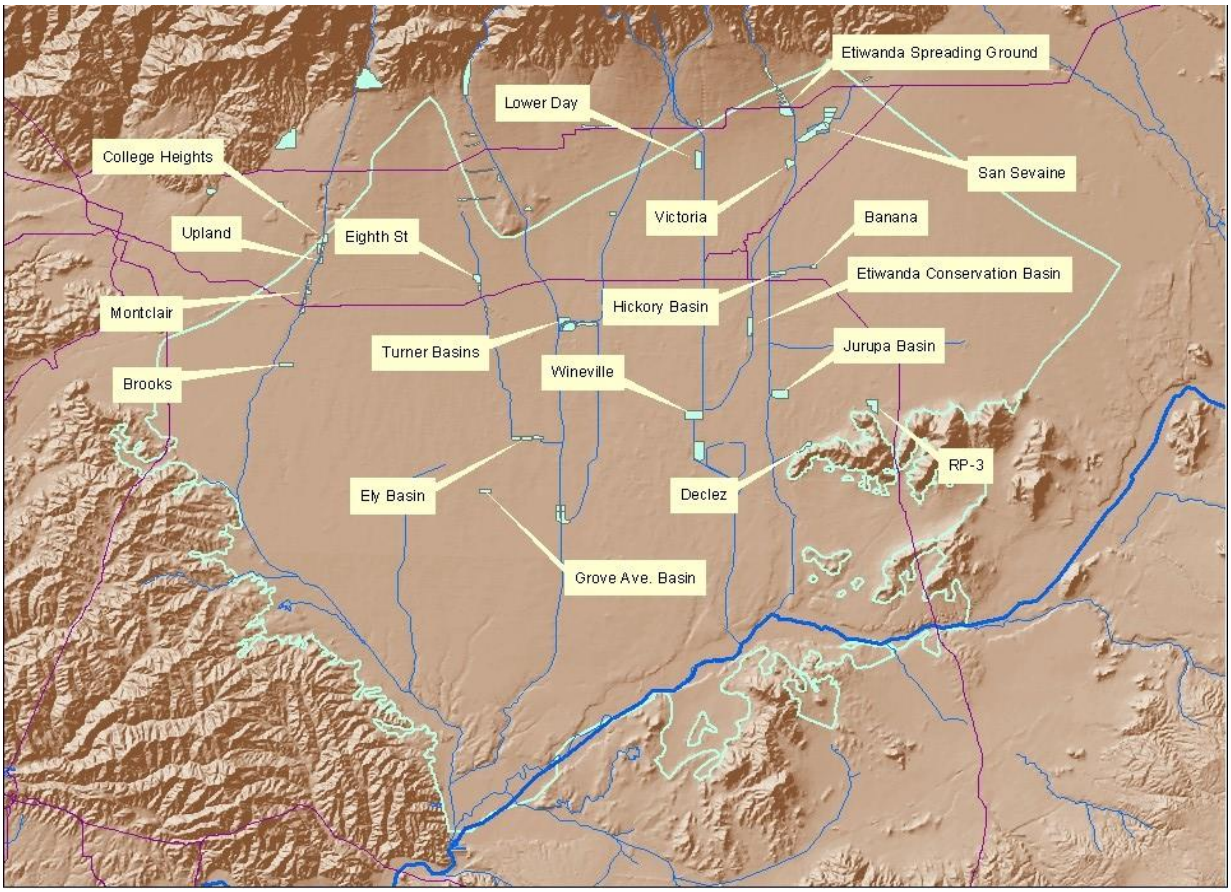
Basin Name	Potential Basin Recharge Capacity (AFY)			Total Potential Recharge Capacity (AFY)
	Storm Water	Imported Water	Recycled Water	
Phase I Recharge Basin Projects				
Banana Basin	800	3,400	1,000	5,200
Declez Basin	300	1,600	500	2,400
Etiwanda Conservation Ponds	1,100	5,300	1,600	8,000
Hickory Basin	900	4,200	1,300	6,400
Jurupa Basin[2]	0	0	0	0
RP-3 Basins	1,700	7,900	2,400	12,000
Turner Basin No. 1 & 2	900	1,300	500	2,700
Turner Basins Nos. 3 & 4	1,800	3,800	1,400	7,000
Subtotal Phase I Basins	7,500	27,500	8,700	43,700
Phase II Recharge Basin Projects				
Ely Basins[1]	1,000	1,640	660	3,300
7th & 8th Street Basins	1,600	2,600	1,100	5,300
Etiwanda Spreading Basins	1,700	7,900	2,400	12,000
Lower Day Basin	500	3,700	1,000	5,200
Brooks Street Basin	1,900	3,600	1,400	6,900
College Heights Basins	100	7,900	0	8,000
Montclair Basins Nos. 1-4	2,100	9,900	0	12,000
Upland Basin	1,000	8,700	0	9,700
San Sevaine Basins Nos. 1 through 5	2,200	14,500	4,100	20,800
Victoria Basin	1,000	4,700	1,400	7,100
Subtotal Phase II Basins	12,100	59,900	15,000	87,000

Total All Program Basins	20,600	92,640	20,760	134,000

1. Although the Ely Basins were in operation prior to the Phase 1 Recharge Project, in 2007, they were added to the Phase II Recycled Water Groundwater Recharge Program. The recycled water capacity shown here is based on a 20% recycled water contribution and the estimated total potential recharge capacity. The remaining capacity of made up from imported water from a turnout planned on the Rialto pipeline.
2. Jurupa Basin, through geotechnical testing (URS, 2003), is believed to have minimal infiltration benefits. As such, Jurupa Basin is used as a holding basin for water sources pumped to the RP3 Basins or further routing to Declez Basin.

5.2 CHINO BASIN RECHARGE FACILITIES IMPROVEMENT PROJECT

The CBFIP is a Groundwater Recharge Program that includes proposed improvements at 18 recharge basin sites, construction of two new sites, with approximately 38 recharge basins. The locations of these recharge sites are shown in Figure 5-2.



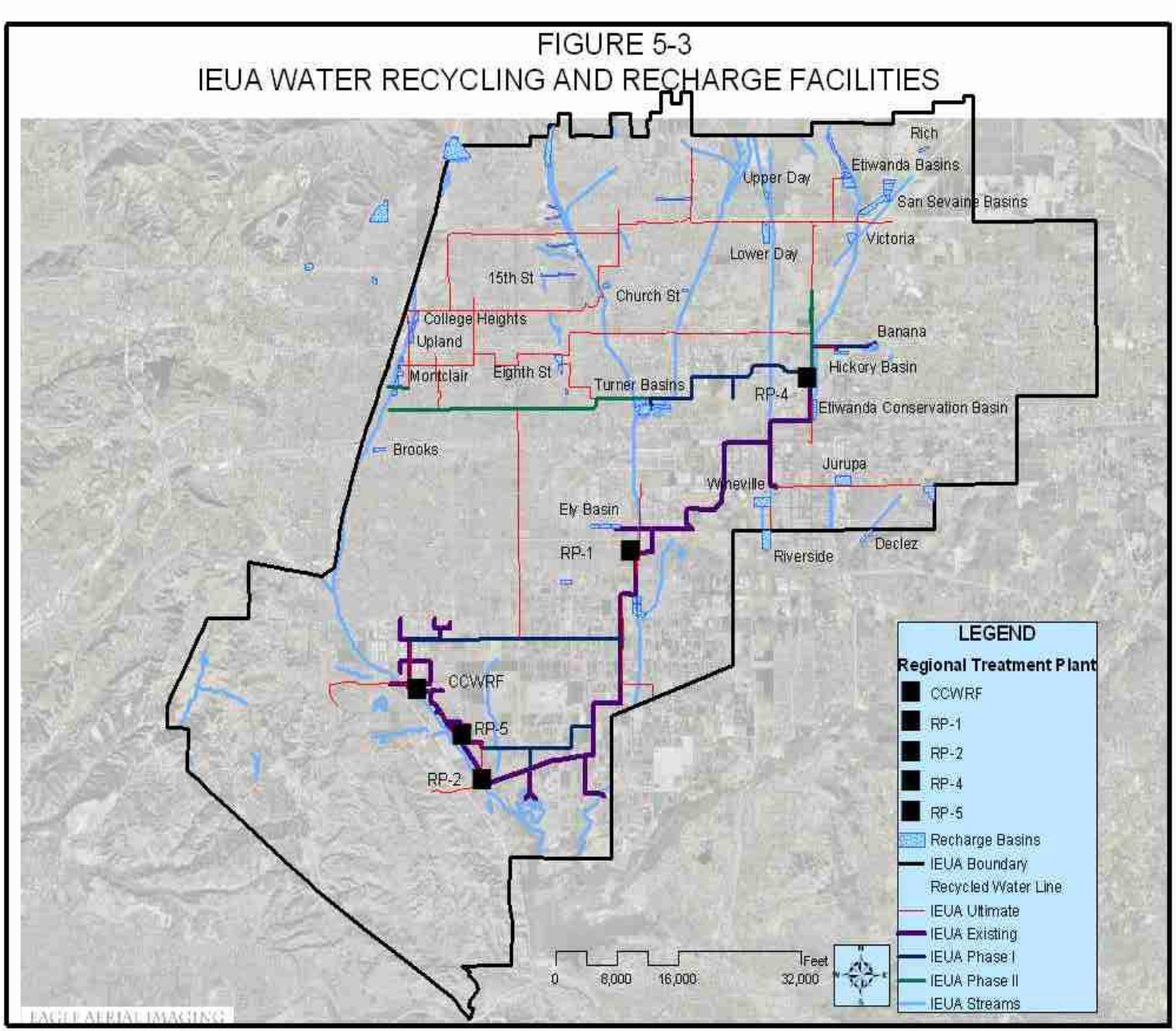
Facilities improvements installed in the initial project consist mainly of rubber dams, new or modified basin inlet and outlet structures, earthwork to improve infiltration, pump stations, conveyance facilities, turnouts from either IEUA's Regional Recycled Water Distribution System or MWD's Foothill Feeder, flow metering devices, and a SCADA system. Implementation of the Recharge Master Plan was coordinated with implementation of the IEUA Regional Recycled Water Feasibility Study described in

Chapter 4. The phased construction of recycled water pumping and conveyance systems coincided with the improvements to recharge basins necessary to recharge recycled water along with stormwater and imported water.

Enhancements to existing facilities and development of additional recharge facilities will occur as opportunities arise. The most likely addition in the next ten years is the phased development of the Etiwanda Creek/Etiwanda Conservation Basins Project in the unincorporated area of San Bernardino County on the east side of Etiwanda Avenue near San Bernardino Road. Also important to groundwater replenishment will be the aggressive implementation of stormwater Best Management Practices (BMPs) in new land developments.

Table 5-2 outlines the estimated recharge capacity by recharge basin site and the relative source water volumes anticipated to be recharged at each basin site. This recharge program was divided into two phases as necessary to gain recycled water groundwater recharge permitting. Phase I basins account for nearly 44,000 AFY and Phase II basins account for an additional 87,000 AFY of new or improved recharge capacity. Following the completion of enhancements at the basins identified in this table, the total recharge capacity of the program will reach 134,000 AFY.

The entire interconnected system of recycled water facilities and recharge facilities as it is planned is shown in Figure 5-3.

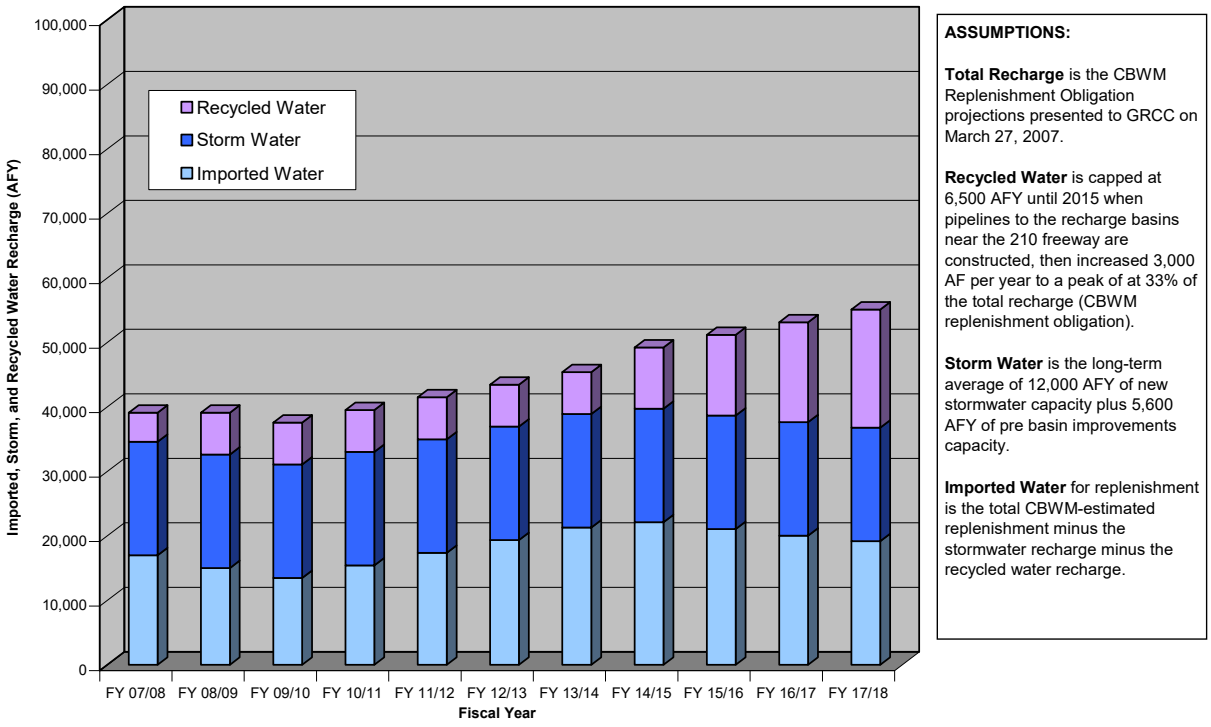

FIGURE 5-3
IEUA WATER RECYCLING AND RECHARGE FACILITIES
Rich
Etiwanda Basins
Upper Day
San Sevaine Basins
Victoria
Lower Day
15th St
Church St
College Heights
Upland
Banana
Hickory Basin
Montclair
Eighth St
Turner Basins
RP-4
Etiwanda Conservation Basin
Brooks
Jurupa
Wineville
Ely Basin
RP-1
Riverside
Declez
CCWRF
RP-5
RP-2
LEGEND
Regional Treatment Plant
CCWRF
RP-1
RP-2
RP-4
RP-5
Recharge Basins
IEUA Boundary
Recycled Water Line
IEUA Ultimate
IEUA Existing
IEUA Phase I
IEUA Phase II
IEUA Streams
0
8,000
16,000
32,000
Feet
EAGLE AERIAL IMAGING

5.3 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 and high-quality imported and storm water sources will allow Chino Basin groundwater quality objectives to be met. Improvements in groundwater quality through recharge will ultimately lower the cost of the Chino Basin Desalter groundwater treatment process.

The schedule for increasing the amount of recycled, storm, and imported water recharged into the Chino Groundwater Basin is illustrated in Figure 5-4.

Figure 5-4
Imported, Storm, and Recycled Water Recharge Schedule



Eight recharge basins (seven for recharge and one for storage) are permitted as Phase I of the recycled water groundwater recharge program. Recently, IEUA prepared a Title 22 engineering report for Phase II of the recycled water recharge program and held a successful public hearing as part of the Phase II permitting process. IEUA anticipates receiving another permit for Phase II from the California Regional Water Quality Control Board (Santa Ana Region) in summer of 2007. Phase II consists of recycled water recharge at 7 basin sites. Two of these recharge sites (Brooks and Eighth Street Basins) are scheduled to have recycled water conveyance facilities in place in 2007 and 2008, respectively. Conveyance facilities for the remaining basin sites should be constructed by 2015. Although the Ely Basins were in operation prior to the Phase I permit, in 2007, they were added to Phase II of the Recycled Water Groundwater Recharge Program. Recycled water delivery facilities are in place for Ely Basins.

5.4 CURRENT TYCIP

As shown in Table 5-3 and discussed below, the main projects in the Recharge Water (RW) Capital Improvement Program are Basin Improvement Projects. These are in turn composed of several sub-projects. Additional projects are needed to enhance the Groundwater Recharge Program. Funding has been sought and obtained from DWR. A total grant of $5.28 million will provide partial financing of the following project components to expand and enhance existing basins: They include:

8. **Lysimeters and Monitoring Wells:** Lysimeters will be constructed to monitor recycled water quality changes due to soil-aquifer treatment. Groundwater monitoring wells will be constructed to track the movement of recycled water down gradient from the basins;
9. **New/Modified MWD Turnouts:** A new MWD turnout on the Rialto Pipeline will be constructed to deliver imported water to basins on West Cucamonga Channel. Modifications to turnouts CB13T and CB14T will expand delivery capacity;
10. **SCADA System Improvements**: Improvements to the SCADA system include adding control features at basins not currently instrumented and improving control features at other basins based on needs identified following initial operations;
11. **Basin Berm Hardening:** Hardening of internal berms will allow stormwater to be captured more reliably in basins by the avoidance of berm washouts during larger storm events;
12. **Montclair Dual Inlet**: A dual inlet to Montclair basins 2 and 3 will allow extended delivery of water to basins during maintenance activities in Montclair basin 1 or 2.; and
13. **Wet Basin Cleaning Development**: Development of wet basin cleaning equipment will be researched . Use of developed equipment will reduce down time for basin dewatering, drying, and traditional silt removal methods.

Table 5-3: Recharge Water (RW) Capital Improvement Program
Basin Improvement Projects

Project	*Scheduled Completion*	*Ten-Year Cost*
Lysimeters and Monitoring Wells	**Fiscal Year 2006/2007**	**$ 1.735 M**
New/Modified MWD Turnouts	**Fiscal Year 2007/2008**	**$ 4.348 M**
SCADA System Improvements	**Fiscal Year 2006/2007**	**$ 0.810 M**
Basin Berm Hardening	**Fiscal Year 2007/2008**	**$ 2.790 M**
Montclair Dual Inlet	**Fiscal Year 2006/2007**	**$ 1.350 M**
Wet Basin Cleaning Development	**Fiscal Year 2006/2007**	**$ 0.050 M**
Total—RW Projects		*$11.083 M*

6.0 NON-RECLAIMABLE WASTEWATER SYSTEM CAPITAL IMPROVEMENT PROGRAM

In 2005 IEUA staff, at the request of its Board, developed an Asset Management Program (AMP) to identify and inventory IEUA's major assets, their condition, and plan for capital improvement projects. This chapter discusses ongoing and future projects for the Non-Reclaimable Wastewater System (NRWS) in accordance with this AMP. These projects reflect the IEUA Salinity Management Action Plan of 2002, which calls for maximizing the use of the NRWS and developing a program to reduce the salt impacts from water softeners to IEUA water recycling facilities.

6.1 BACKGROUND

The IEUA owns and operates the NRWS that provides for export of high-salinity and industrial wastewater generated within IEUA service areas to the Pacific Ocean. The wastewater discharged to the NRWS consists mainly of industrial and groundwater treatment brines. It also includes the belt press filtrate resulted from dewatering of the biosolids generated within the IEUA's water recycling treatment facilities and some domestic waste from non-sewered areas. The NRWS is physically separated from the Regional Domestic Wastewater System and provides a means for segregating poor quality, saline wastewater and exporting it out of the service area. This improves the quality of the recycled water for local use and helps ensuring that IEUA 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 2005/06, the NRWS exports approximately 33,000 tons of salt to the ocean, as summarized below:

FY 2005/2006	MGD	mg/L	Tons/Year
North NRW System	**4.60**	**2,499**	**17,496**
South NRW System	**0.56**	**5,182**	**4,417**
Desalter 1, (14 MGD)	**1.62**	**4,480**	**11,046**
Desalter 2, (10 MGD)	**0.42**	**4,480**	**470**
	7.20 Total	3,050 Average	33,430 Total

The NRWS collection system is comprised of a North and South systems. The North system, which serves approximately 42 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 12 industries, conveys wastewater to the Santa Ana Regional Interceptor (SARI) pipeline, 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.

Export of saline and industrial wastewater from the local area in this manner protects the quality of the IEUA's recycled water and is a key element of the Chino Basin Watermaster'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 392 mg/l. It is estimated that diverting most of the existing industrial users with TDS concentrations above 550 mg/l to the NRWS could lower the TDS level of the recycled water by another 8 to 11 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.

6.2 NRWS AND SALINITY MANAGEMENT ACTION PLAN

The IEUA developed a Salinity Management Action Plan in 2002 in cooperation with the Regional Technical and Policy Committees. Some of the strategies that were identified to reduce the salinity of recycled water supplies included:

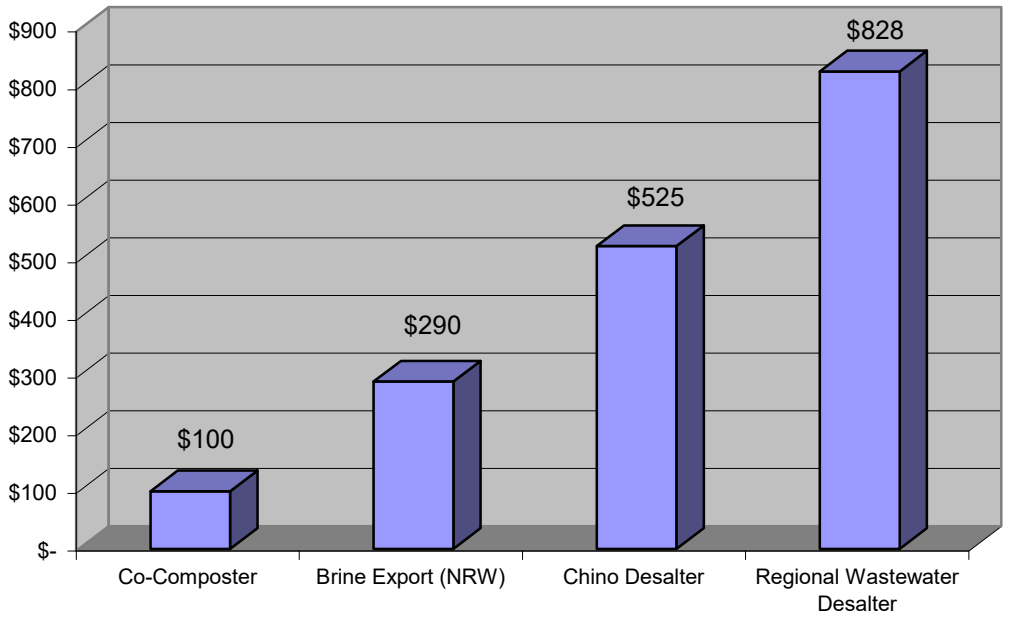
- Maximizing the use of the NRWS,
- Developing a program to reduce the salt impacts of water softeners, and
- Reducing salinity contributions from IEUA water recycling facilities.

A study by Parsons Engineering Science (2000) evaluated the long-term issues and future funding needs for operating and maintaining the NRW system 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 NRW system, 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 NRW system minimizes IEUA's treatment costs for salt, as illustrated in Figure 6-1.

In 2003, IEUA in partnership with the Regional Technical and Policy Committees, the Chino Basin Watermaster and the Santa Ana Regional Water Quality Control Board, developed a strategies to reduce TDS at the IEUA regional water recycling plants and to encourage salt export through optimum utilization of the NRWS consistent with the OBMP. This is also consistent with the Maximum Benefit Basin Plan, adopted in 2004 by the Santa Ana Regional Water Quality Control Board, which establishes new groundwater TDS and nitrogen water quality objectives. The Plan allows the use of recycled water for groundwater recharge while providing reasonable protection for the groundwater quality in the region. Key commitments in the plan included construction of Chino Desalters, recycled water quality management through industrial waste control, optimum use of the

NRWS, reducing the use of water softeners to decrease saline flows into the regional water recycling plants, ion-exchange plants, and groundwater monitoring programs.

FIGURE 6-1
Relative Costs of Salt Removal From Chino Basin
(Dollars per Ton of Salt Removed)



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:

- Water Softener Strategy—Develop incentives, public education materials and model ordinances to reduce the salt impacts of water softeners. In FY 2005/06, sources of TDS entering the Carbon Canyon Water Recycling Facility were characterized. In FY 2007/08, the water softener replacement incentive program will be implemented throughout IEUA's service area. The budget for the program is $250,000 per year using the Wastewater Collection, Treatment, and Disposal (RC) Fund. (Status: in progress),

- Buyback Agreement with CSDLAC—IEUA relinquished 3 MGD of owned capacity in the NRWS to LACSD in April 2004. This action has lowered annual payments to CSDLAC by approximately 23% or approximately $350,000 annually. The savings will be passed on to NRWS customers through more favorable rates and charges. This transaction encourages the use of the NRWS by new and existing industries to discharge their saline effluent and increase the salt export. (Status: completed),

- Implementation of the Maximum Benefit Basin Plan—Ensuring compliance with the Maximum Benefit requirements and with the Memorandum of Understanding with the Orange County Water District and Regional Board. A monitoring work plan has been

developed with Chino Basin Watermaster. The regional wastewater pretreatment requirements for TDS have been evaluated and local limits have been set. Reports on the salt balance are prepared annually through Chino Basin Watermaster. (Status: ongoing),

- MWD Dry Year Yield Conjunctive Use Ion-Exchange Projects—Construct connections to the NRW system (IEUA implementation responsibility) in conjunction with Upland, Monte Vista Water District, Chino, and Chino Hills for several proposed ion exchange projects. These projects will improve the water quality in the groundwater basin and improve its yield, especially during dry years, through participation in a conjunctive use program with MWD. (Status: in progress),

- NRWS "*Pass-Through*" Rates—IEUA adopted pass-through rates and budget impact analysis for existing industrial customers in 2004. The purpose is to pass-through charges from LACSD and SAWPA to industrial customers for using the NRWS, with addition of only minimal charges to cover the IEUA administrative expenses. This action encourages the export of salts from the Chino Basin by connecting more industries to the NRWS. The pass-through rate will be updated annually. (Status: in progress),

- Chino Desalter "SARI" Capacity Alternatives—In April 2004, IEUA reached an agreement with Chino Desalter Authority (CDA) to sell IEUA owned SARI capacity to the CDA to handle the brine waste from the Chino I Desalter Expansion and the future Chino II Desalter. The revenue from this sale transaction was $14.25 million. Approximately $4.73 million from the sale was deposited into IEUA's Regional Capital Improvement Fund and $9.51 million was deposited into the NRWS Capital Improvement Fund (Status: completed), and

- Leasing of Temporary SARI Capacity to Lewis Operating Company—IEUA entered into agreement with Lewis Operating Company (LOC) to lease a portion of the SARI capacity for their Chino Preserve Expansion. IEUA has made this lease available to LOC until the City of Chino has completed the design and construction of the Pine Ave. Interceptor Sewer. Once the construction of the Pine Ave. Interceptor is completed, the California Institute for Women will stop discharging to the SARI and start discharging to the Pine Ave. Interceptor, which will flow to IEUA Regional Plant No. 5 (Status: in progress)

6.3 *ECONOMIC BENEFITS OF THE NRWS AND SALINITY MANAGEMENT ACTION PLAN*

IEUA expects to achieve substantial avoided costs as well as benefits for the service area by implementation of the NRWS Action Plan. The IEUA will avoid the cost of treating non-reclaimable industrial wastewater at IEUA'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 IEUA is the ability to use 20,000 to 25,000 acre-feet per year of recycled water for groundwater recharge instead of more expensive imported water. IEUA 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. These avoided costs are summarized in Table 6-1.

Table 6.1 Cost Avoided by the NRW Action Plan

Action Avoided	Estimated Future Cost Avoided

Construction & Operation of Desalination Facilities at Regional Plants	**$250 million**
Construction of Secondary and Tertiary Treatment Facilities at Regional Plants for 15 mgd ($8 per gpd including solids handling)	**$120 million**
Purchase Imported Water for Recharge to Replace 20,000 AFY Recycled Water	**$6 million/year**
Total Net Economic Benefits Over Ten Years	$430 million

There will also be additional revenues from the sale of unused capacity, either: (1) as part of the CSDLAC buyback agreement; (2) for the Chino Desalters; (3) for local ion exchange groundwater treatment projects; or (4) for local development in non-sewered areas. These cost savings are expected to offset the cost of "regionalizing" the NRWS.

6.4 CURRENT TYCIP

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 6-2.

Table 6-2: NRW System Capital Improvement Program—Major Projects

Project	Scheduled Completion Fiscal Year	Ten-Year Cost (in Million Dollars)
NRW System Upgrades	FY 2014/15	$21.5*
CSDLAC Capital Replacement Costs	Each Year	20.2
NRWS Connection & Emergency Pipeline Replacement	FY 2016/17	2.0
Total—Major NRW System Projects		***$43.7***
Total—All NRW System Projects		***$43.9***

*** Includes $5.6 million savings from relinquishing of 3 MGD unused capacity back to CSDLAC.**

IEUA is obligated to make annual payments to CSDLAC to cover its proportional share of the capital repair, relocation, reconstruction and rehabilitation (4R) costs into CSDLAC sewer system. The relinquishment of 3 MGD of unused NRWS capacity to CSDLAC reduced the ten-year budget to $18.8 million for 4R capital replacement costs, a saving of $5.6 million.

As a part of the ten year CIP, one of the goals of IEUA is to identify and assess the condition, rehabilitation and replacement costs for the NRWS. IEUA retained the services of PBS&J and performed an exhaustive condition assessment of the NRWS pipelines and infrastructure including manholes using Closed Circuit Tele Vision (CCTV) and Global Positioning System (GPS) technology.

This assessment indicated the following: 48 miles of pipeline and 571 manholes of the NRWS were inspected. Overall, the pipelines that were inspected are in good condition, with 21% of the segments requiring no action. Nevertheless, the system is in need of cleaning, as over half of the inspected segments have debris accumulation or deposits in the pipeline and about 9 % of the system could not be inspected due to the excessive debris. Structural defects were found in 17% of the system that will require point repair and replacement over the next two years, and rehabilitation of pipelines over the following eight years by Cast in Place Pipe lining techniques. About 5,100 feet of SARI pipeline, 15,000 feet of North, Central and South Trunks of the Northern NRW system, and 4,500 feet of laterals require rehabilitation. Manholes were in relatively good condition, with 61% not requiring action, 17% needing maintenance, 13% needing repair/rehabilitation and 9% needing re-inspection as they could not be located or were buried. A planning level condition assessment of the Philadelphia Avenue Pump Station found that it is aging and in need of improvements and upgrades. New pumps, instrumentation, controls and improvements to the ferric chloride system were recommended and are also included in the CIP schedule.

A multi-year capital improvement project has been established to rehabilitate the NRWS pipelines and manholes. Table 6-3 shows the recommended CIP schedule from PBS&J.

Table 6-3 Ten Year Capital Improvement Program for NRWS

	Expense per Fiscal Year (in thousands of dollars)										
TOTAL	2006/ 2007	2007/ 2008	2008/ 2009	2009/ 2010	2010/ 2011	2011/ 2012	2012/ 2013	2013/ 2014	2014/ 2015	2015/ 2016	Totals
CIP	$833.1	$1,051.1	$3,019.6	$2,267.5	$1,389.9	$2,635.1	$1,883.9	$1,682.6	$1,117.8	$1,994.4	$17,875.0
O&M	$1,345.0	$1,320.8	$1,573.6	$1,293.6	$1,345.3	$1,399.1	$1,455.1	$1,513.3	$1,573.8	$1,636.8	$14,456.6
Annual	$2,178.1	$2,371.9	$4,593.3	$3,561.1	$2,735.2	$4,034.2	$3,339.0	$3,195.9	$2,691.7	$3,631.2	$32,331.6

The SARI cleaning and condition assessment project was completed during the month of March, 2007 by IEUA staff. This project involved cleaning 3 miles of 27" sewer along the SARI line located within the IEUA service area and 1.5 miles of IEUA owned pipeline. Closed-Circuit Television Inspection (CCTV) was also conducted after cleaning of each section to evaluate the internal structural condition of the pipelines and manholes. Fifteen roll off bins were used to remove approx. 90 tons of material from the line. Material was classified as non-hazardous waste and was disposed at the Chemical Waste Management landfill in Kettleman City, CA. The results of the CCTV inspection were favorable with the pipelines in generally very good condition with no structural problems noted. If resources allow, IEUA staff will perform some of the cleaning, CCTV, and condition assessment as an ongoing program and to meet the recently adopted requirements of the State mandated Wastewater Discharge Requirement's Sanitary Sewer Management Program.

7.0 ORGANICS MANAGEMENT/ CO-COMPOSTING CAPITAL IMPROVEMENT PROGRAMS

Organics Management

The Agency's long-range plans for treating and utilizing biosolids as well as dealing with the problems of dealing with manure and green 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 IEUA's mission to protect public health, the groundwater basin, and the environment (e.g., reduce air pollution and improve water quality). The Board certified the Programmatic EIR for the Business Plan in June 2002 and adopted the Business Plan together with the WFMP and the Recycled Water Feasibility Study in August 2002.

To the extent it is economically feasible, the IEUA's organics management strategy seeks to protect the Chino Groundwater Basin from infiltration of salts and nitrogen compounds generated on dairies in order to avoid the future cost of removing such contaminants from the groundwater. As a result, the Business Plan is an integral tool to implement the Chino Basin Watermaster's Optimum Basin Management Plan. The Business Plan included the implementation of two key initiatives. The first is a comprehensive renewable energy reliability program, which has resulted in the construction of a dairy manure digestion facility to generate methane gas and divert salts from the groundwater basin. The facility commenced operation as a pilot project in January 2002 to receive and digest 225 tons per day of manure from the dairies. In 2006, after 4 years of successful operation, the facility was upgraded from a pilot project to a full operational project and the facility manure capacity was increased to 315 tons per day. The facility was given the name RP-5 Solids Handling Facility. Along with the IEUA Co-Composting Facility which opened in 1996 to compost dairy manure with municipal biosolids, the manure digestion facility has diverted a significant amount of pollutants: 121,000 tons of total dissolved solids (salt), 270 tons of nitrate-nitrogen, and 5,305 tons of ammonia.

The second is 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. This community partnership is being carried out through a project the Agency is implementing with the Los Angeles County Sanitation Districts (LACSD). IEUA formalized an agreement with LACSD to implement the joint goal of development of a sustainable biosolids

management project. This Joint Powers Agreement outlines the design, construction and operation of a biosolids composting facility, called the Inland Empire Regional Composting Facility (IERCF), to be located adjacent to the IEUA Regional Water Recycling Facility No. 4, located in Rancho Cucamonga, CA. Recycled green wastes from the local communities are being mixed with biosolids to make high quality compost for local landscaping and horticulture uses. This new composting facility will replaces IEUA's Co-Composting Facility which was located in Chino, CA which was closed in 2006. The IERCF construction was completed and commenced start up in early 2007. While it is anticipated that the majority of biosolids generated at the IEUA's water recycling facilities will be made into compost at the Inland Empire Regional Composting Facility, IEUA will continue evaluating several options that will provide a diverse, yet cost-effective, long-term sustainable biosolids recycling portfolio.

8.0 TEN YEAR CIP COSTS AND FINANCING

8.1 INTRODUCTION

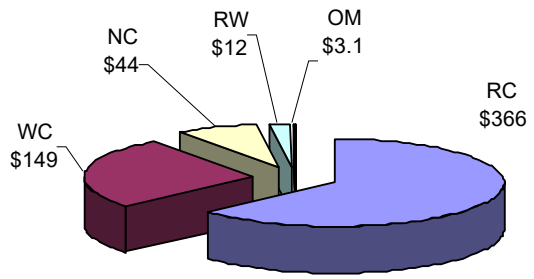
The Agency's budget and Ten-Year Capital Improvement Program are divided into several different program areas:

- Regional Program (RC Fund)
- Recycled Water Program (WC Fund)
- Recharge Water Program (RW Fund)
- Non-reclaimable Waste System Program (NC Fund)
- Organics Management Program (OM Fund)

These funds account for all of the costs and revenues associated with acquisition or construction of facilities and improvements. The operating funds are described in the Agency's adopted Budget (Volume 1) and are not discussed in this Ten-Year Capital Plan except to note any transfers between capital and operating funds.

As shown in Figure 8-1, by far the largest capital improvement program area is the Regional Program. For each program area, the complete list of projects with schedules and budgetary costs is shown in Appendix B.

FIGURE 8-1
RECOMMENDED TEN-YEAR CAPITAL PROJECT EXPENDITURES
(Dollars in Millions)



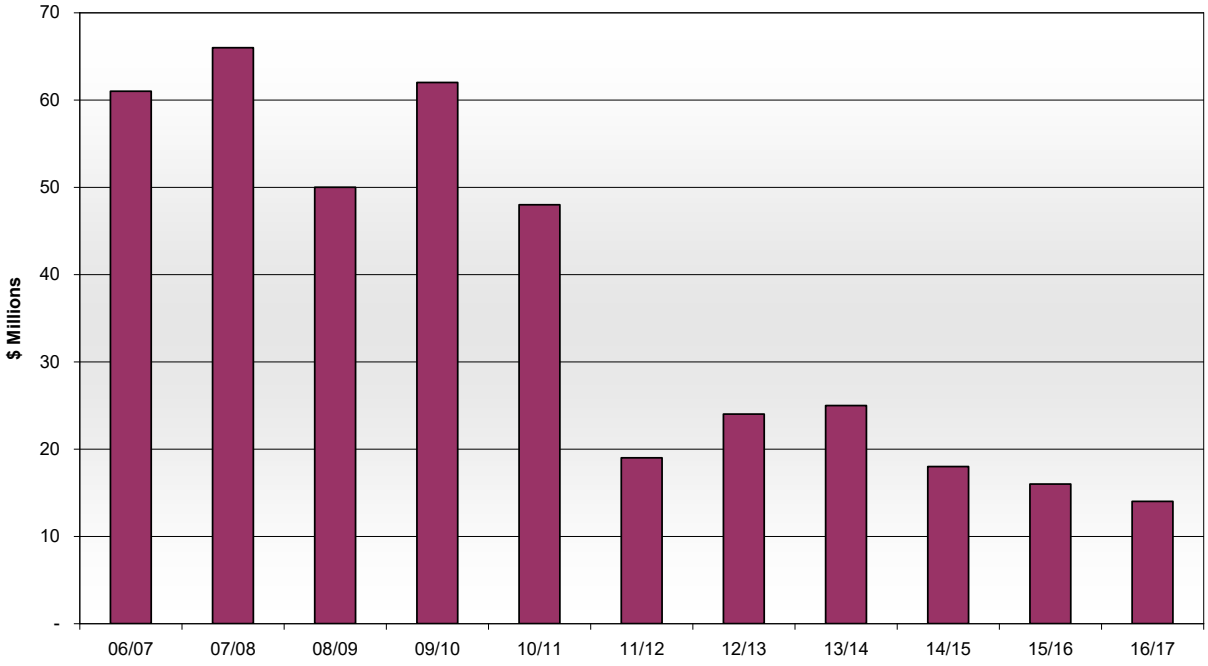
8.2 WASTEWATER COLLECTION, TREATMENT, AND DISPOSAL

This year's Ten-Year Program recommends $366 million in capital project expenditures for the Regional Program over the next ten years for both new construction and replacement projects. The projected Regional Program expenditures are less than last year's (FY 2006/07 TYCIP) by approximately $12 million dollars. The decrease is generally attributable to the slower growth forecast for the Agency's service area and some expansion projects are estimated to complete in FY 2007/08. The significant additions starting in FY 2007/08 are the new Operations Laboratory of $15 million and the San Bernardino Pump Station By-Pass project of $ 7.6 million.

Table 8-1 ("Wastewater Collection, Treatment, and Disposal") lists the largest RC projects, in terms of ten-year cost, by service area. The projects listed in Table 8-1 account for 87 percent of the $366 million budgeted for RC projects in the next ten years. Within the RC Program, the top six areas of expenditures are:

- RP-5 Facilities Improvements ($37.7 million),
- RP-1 Dechlorination System & Solids Process Upgrades ($31 million),
- RP-1 Secondary Treatment Odor Control Filtration & Redundancy ($31 million),
- RP-1 Condition Assessments ($19 million),
- RP-1 Dewatering Facility Expansion ($16.6 million),
- New Operations Laboratory ($15 millions),
- CCWRP Tertiary Filter & Chlorine Contact Tank Expansion ($13 million),

Figure 8-2
Recommended Wastewater Collection, Treatment, and Disposal Program Capital Expenditures



8.2.1 Wastewater Collection, Treatment, And Disposal Program Costs

Figure 8-2 examines how the recommended RC capital project costs are spread over the next ten fiscal years and grouped by location. The current fiscal year is also included for reference. The general trend in the first four years is ranging from $50 million to $65 million, and tapering down to about half that level in the remaining years. In the first three years, significant projects are recommended at most locations—at RP-1, RP- 4, RP-5, and in the wastewater conveyance system. RP-1 projects account for $203 millions and RP5 projects account for $65 million over the next ten years, 87% of the total Regional program. Notably, the Agency will be completing the RP-5 Renewable Energy Efficiency Project, RP-5 System Facility Upgrade, the RP-4 expansion to 14 mgd, San Bernardino Avenue Pump Station, and interceptor and lift station projects. In the ensuing two years, the focus of work will be RP1 Facilities Improvements, RP-1 Condition Assessments related projects, RP-5 Phase II Expansion, and RP1 Dewatering Facility Expansion. In the following two years, the focus will be the RP-1 Secondary Treatment Odor Control Filtration and Redundancy, and the CCWRP Tertiary Filter & Chlorine Contact Tank Expansion.

8.2.2 Wastewater Collection, Treatment, and Disposal Program Financing

To plan, design, and construct the Regional program capital projects summarized previously in Chapter 3, it is expected to cost approximately $366 million in the coming ten-year period. In addition to paying for new capital projects, the RC fund has long-term liabilities for bonds payable and interest expenses, as well as administrative and other expenses. In addition, transfers are made to other funds for capital and administrative support and debt service. Financing for the Regional program is provided by several sources including, but not limited to: property taxes, capital capacity reimbursement payments (connection fees), a combination of long and short term debt, state loans, grants, proceeds from the sale of property, and interest earned.

The details of the Agency's Ten Year Budget for the Regional program are presented in Exhibit X in the Exhibit section of this report. It gives a complete revenue and cost summary, including construction and replacement projects ("work in progress") and transfers between the RC fund and other funds. The major transfers are to the Recycled Water, Recharge Water, Organics Management and Internal Services funds.

Additional debt service issue is planned to finance the TYCIP. Within the Regional Program, grants are expected to total $8.6 million for wetlands and energy efficiency projects. The key sources of revenue for the TYCIP are property taxes ($242 million) and supplemental capital contributions ($259 million). Supplemental capital contributions come from calls to contracting agencies for Capital Capacity Reimbursement Payments (CCRP), which are derived from connection fees. The expected cash receipts from Reimbursement Payments depend on the number of new EDUs added to the Regional wastewater system each year. The expected number of EDUs is forecasted based on growth projections. Though contracting agencies provided a projection of 6,000 to over 7,000 EDU over the next ten year, a conservative EDU projection of 5,500 to 5,200 per year for the first three years, gradually decreased to 4000 per year for the last two years was assumed for the revenue projections. (See discussion in Chapter 2).

In the past, it has been assumed that the CCRP will be increased at the rate of inflation in

construction costs, estimated at an average of 3% per year. Starting in FY 2006/07, the annual increase in the CCRP is calculated as the ten year average Engineering News Record (ENR) construction cost index for Los Angeles County (ENRLA). The current (FY 2007/08) Capital Capacity Reimbursement Payment amount is $4,450 per EDU. It was raised from $4200 per EDU by the IEUA Board of Directors in March of 2007.

To support and to meet the future growth in the service area for the next ten years, the Agency will pursue State low interest loans of approximately $67 million for the Regional Program projects.

Table 8-1: Wastewater Collection, Treatment, and Disposal Program Summary

SERVICE AREA	TEN-YEAR COST ($ IN MILLIONS)
RP-1	
• RP-1 Facilities Improvements	30.7
• RP-1 Secondary Treatment Odor Control Filtration and Redundancy	30.2
• ALL Facilities Capital Upgrade	30.0
• RP-1 Dewatering Facility Expansion	14.3
• All Facilities Condition Assessment	10.5
• RP-1 Plant Equipment Improvements	10.0
• RP1 Aeration Modification	8.5
• RP1 Cogeneration Facility Expansion	8.3
• Regional Facility Chemical & Control Automation	4.6
• RP-1 3-Phase Digestion Improvements	4.4
• RP-1 Odor Control, Phase I	4.4
• RP-1 Modernization	4.4
• RP-1 Upgrades at Primary, Sludge, & Energy Recovery	4.3
• RP-1 Tertiary Filter Expansion	3.8
Total—Major RP-1 Projects	***$168.4***
Total—All RP-1 Projects	***$202.7***
RP-4	
• San Bernardino Avenue Pump Station	$12.0
• San Bernardino Pump Station Bypass	7.6
• RP-4 Gravity Line to San Sevaine Channel	5.9
• Land Acquisition – 1158/1270 East Reservior	4.1
Total—Major RP-4 Projects	***$29.6***
Total—All RP-4 Projects	***$31.1***
CCWRF	
• CCWRF Tertiary Filter and Chlorine Tank Expansion	$11.8
• CCWRF Aeration System Modification	4.6
• CCWRF Aeration Pipes Repair	2.0
Total—Major CCWRF Projects	***$18.4***
Total—All CCWRF Projects	***$19.6***
RP-2/RP-5	
• RP-5 Capacity Improvements	$37.7
• New Operations Laboratory	15.0
• RP-2 Decommissioning	8.0

SERVICE AREA	TEN-YEAR COST ($ IN MILLIONS)
• RP-5 Maintenance Facility	6.0
• RP-2 Dewatering	4.6
• RP-2 Daft System Modification	3.0
• RP-5 System Facility Upgrade & Improvements	2.7
• RP-2 Solids Handling Automation	2.6
Total—Major RP-2/RP-5 Projects	***$79.6***
Total—All RP-2/RP-5 Projects	***$90.2***
Other Regional System Equipment Purchase & Projects	***$21.9***
Total—Major Wastewater Collection, Treatment, and Disposal Projects	***$315.0***
Total—All Wastewater Collection, Treatment, and Disposal Projects	***$365.5***

8.3 OTHER IEUA CAPITAL IMPROVEMENT PROGRAMS

Other IEUA capital improvement programs include the Recycled Water Program (WC Fund), the Recharge Water Program (RW Fund), the Non-Reclaimable Wastewater System Program (NC Fund), and the Organics Management Program (OM Fund). Exhibits X through XIII present revenue and cost summaries for each capital improvement program, based on the Agency's budget. Table 8-2 lists the major projects for each program in terms of dollars budgeted for the next ten years. In addition, Appendix B presents the complete list of projects with schedules and budgetary cost estimates for the next ten years.

8.3.1 Recycled Water Capital Program

As discussed in Chapter 4, this year's TYCIP recommends $154 million in capital project expenditures for the WC Program over the next ten years. Exhibit XI summarizes the Agency's ten-year budget for the WC Fund. To finance the Recycled Water Program, Phases I–V, approximately 25% of the funding is expected to come from State Water Resources Control Board (SWRCB) and Santa Ana Watershed Project Authority (SAWPA) grants, DWR grants, and U.S. Bureau of Reclamation (USBR) grants, 38% from SWRCB loans, and most of the remaining 37% will be funded by excess revenues from recycled water sales and MWD LPP Program. Recycled water sales are expected to generate approximately $1.3 million to over $4 million annually for the WC Fund. Any funding shortfalls will be made up by inter-fund transfers from the RC Fund, which are estimated to be $12 million over the next five years.

8.3.2 Recharge Water Capital Program

As discussed in Chapter 5, this year's TYCIP recommends $11.8 million in capital project expenditures for the RW Program over the next ten years. The Recharge Water Capital Improvement Fund (RW Fund) was created in FY 2002/2003 to track the expenses associated with implementation of the Recharge Program. The establishment of this new fund in July of 2002 coincided with the Agency's readiness to begin final design of facilities improvements for the Recharge Program. Exhibit XII summarizes the ten-year budget for the RW Fund.

To finance the RW Program, the Chino Basin Regional Financing Authority issued $20 million of variable rate debt obligations in July of 2002. The Chino Basin Watermaster, through the Recharge Facilities Agreement, is obligated to pay one-half of the debt service. The State of

California's Proposition 13 Grant Program is providing $20 million of grant funding for the recharge program. Interfund transfers from the RC Fund cover the recharge program's debt service and provide a minimum operating reserve. Cooperating agencies are providing in-kind services. An $11 million basin recharge enhancement project is proposed to be expended over the next two years, to construct a new MWD turnout, SCADA system improvements, and monitoring wells. These additions will be partially funded by a $5.2 million DWR Prop 50 Grant and the remaining costs will be matched 25% by IEUA and 25% by CBWM. The IEUA portion, supported by RC Fund through interfund transfers, accounts for $5 million in the first two years and averages at $200,000 to $500,000 in the ensuing years.

8.3.3 Non-Reclaimable Wastewater System Capital Program

The NC Fund records financial transactions associated with facilities necessary to operate the northern and southern NRW systems. Exhibit XIII summarizes the Agency's ten-year budget for the NC Fund. This year's TYCIP recommends $43.9 million in capital project expenditures for the NC Program over the next ten years. The major capital expenditures include $20.1 million for the CSDLAC 4R charges and $ 23.8 million for the NRWS condition assessment capital projects discussed in Chapter 6.

The major revenue sources for the NC Fund are: (1) monthly user and capacity fees charges to holders of capacity rights in the system; and (2) sale of new capacity rights.

8.3.4 Organics Management Capital Programs

The Organics Management (OM) Fund records financial transactions associated with facilities necessary to implement and operate the Organics Management Program. In addition to paying for new capital projects, the OM Fund incurs expenses for debt service from previous bond issues and both funds incur administrative and operational expenses. Exhibit XII summarizes the Agency's ten-year capital budget for the OM Fund. In the Organics Management Program, the major capital expenditures are for the Inland Empire Regional Composting Facility (IERCF) described in Chapter 7. To finance the IERCF, IEUA issued $12.9-million in bonds in FY 2002/2003. In addition, interfund transfers from the RC Fund to the OM Fund will provide approximately $3.3 million each year for capital contributions and debt service. Another major revenue source for the OM Fund for the next two years includes proceeds from the sale of the existing IEUA Co-Composting site property.

Table 8-2: Major Capital Projects—Other Programs

	TEN-YEAR COST ($ IN MILLIONS)
WATER RECYCLING PROGRAM	
Recycled Water Pipeline Projects	54.7
Recycled Water Distribution System	62.6
Total - All Water Recycling Projects	**$117.3**

	TEN-YEAR COST ($ IN MILLIONS)
GROUNDWATER RECHARGE PROGRAM	
Recharge Enhancement Project	11.4
Total-All Recharge Projects	**11.4**
NON-RECLAIMABLE WASTEWATER SYSTEM	
CSDLAC Capital Replacement Costs – 4Rs	20.2
NRW System Refurbishment	21.5
NRW Condition Assessment	2.0
Total-All NRW System Projects	**$43.7**
ORGANICS MANAGEMENT	
Inland Empire Regional Compositing Facility[1]	1.1
Total-All Organics Management Projects	**$1.1**
1 The other half of project costs will be funded by the County Sanitation Districts of Los Angeles County, through the Inland Empire Regional Composting Authority.	

8.4 AB-1600 NEXUS TEST

Each year, IEUA assists its Contracting Agencies to demonstrate compliance with AB1600 (the "Mitigation Fee Act"), which requires that CCRP must be reasonably related to the service provided. As it relates to Capital Capacity Reimbursement Payments, this is accomplished by summarizing the projected needs for the collected funds and the duration that the funds will be held. Table 8-3 summarizes IEUA's projected need for Capital Capacity Reimbursement Payment revenues for the Regional Capital Improvement (RC) fund.

As indicated in Table 8-3, in the column labeled, "Balance of Funds Collected for 5 or More Years," post-1989 reimbursement payment receipts do not stay on deposit for more than five years during the ten-year program. If funds collected after January 1, 1989 are segregated and used to meet Regional Program needs first, post-1989 funds will be expended within the required five years. The CCRP balance starts building up in FY 2008/09, as IEUA will pursue the state capital market loans for Regional Program. As a result, funds in the CCRP balance will stay for more than 5 years. However, these funds are expected to expend for projects that continue beyond the ten year period, and to provide adequate coverage for cash flow shortages arising from pending state loans. Therefore, the CCRP balance is projected to meet the statutory requirements of AB-1600.

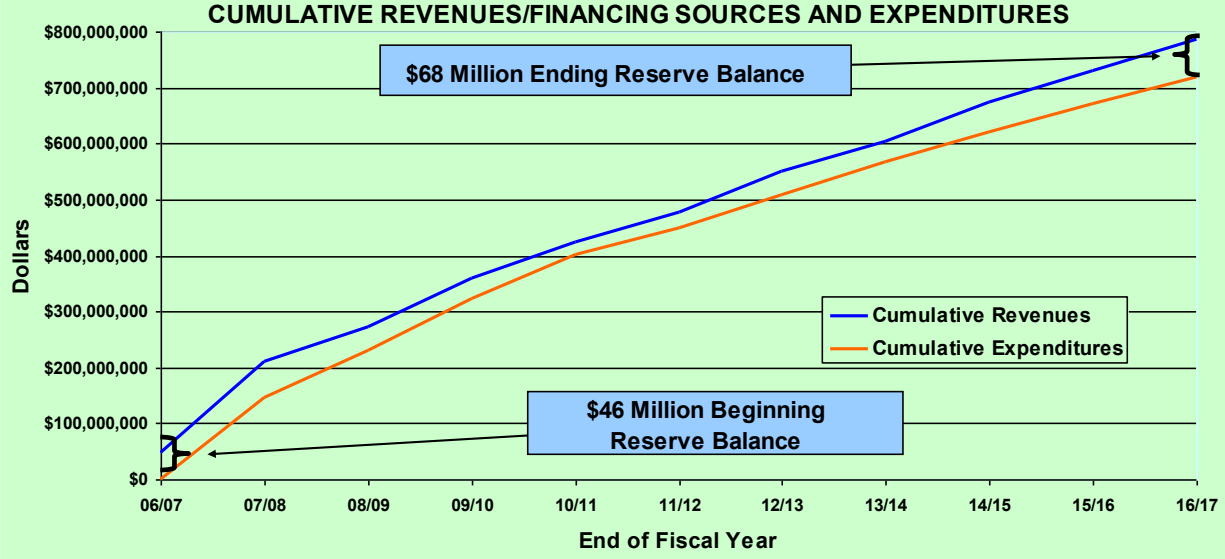
Table 8-3: Projected Status of Reimbursement Payment Receipts (in $1000s)				
Fiscal Year	***Annual Contracting Agency Receipts (Reimbursement Fees)***	***IEUA Expenditure of Funds (Capital Calls)***	***Balance of Funds Collected***	***Balance of Funds Collected for 5 or More Years***
1991-92	6,074	9,750	0	0
1992-93	4,337	0	4,337	0
1993-94	3,770	0	8,107	0
1994-95	4,906	0	13,013	0
1995-96	6,801	4,600	15,214	0
1996-97	11,185	5,125	21,274	0
1997-98	14,213	24,519	10,968	0
1998-99	13,718	14,637	10,049	0
1999-00	11,094	3,190	17,953	0
2000-01	17,216	22,400	12,769	0
2001-02	20,135	48,010	0	0
2002-03	23,999	0	23,999	0
2003-04	28,451	0	52,450	0
2004-05	26,868	51,200	28,118	0
2005-06	20,800	58,270	0	0
2006-07	26,880	27,176	0	0
2007-08	24,475	0	24,475	0
2008-09	24,767	38,919	10,323	0
2009-10	25,391	20,746	14,968	0
2010-11	26,025	43,138	0	0
2011-12	26,665	24,802	0	0
2012-13	27,308	12,275	15,033	0
2013-14	26,208	31,750	9,491	0
2014-15	26,170	11,800	23,861	0
2015-16	25,440	22,400	26,901	0
2016-17	26,584	18,700	34,785	0

8.5 CONCLUSIONS

The recommended financing for the Regional Program to fund the Ten-Year Capital Improvement Plan will include short term commercial paper and long term revenue bonds of approximately $129 million. Figure 8-3 shows how gross revenues and costs vary throughout the ten years, affecting the combined working capital and Member Agency reserves. Starting with a projected reserves balance of $42 million at the beginning of FY 2007/2008 with initial costs set to zero, cumulative funding sources are projected to exceed costs during the next ten years, leaving an ending combined reserve balance of $62 million.

Capital Capacity Reimbursement Payments are projected to provide $259 million for the capital improvement program over the next ten years. Grants are expected to provide $5 million for Regional Program projects, $58 million for Recycled Water projects, $5 million for Groundwater Recharge and $4 million for solids handling and energy generation projects. State Revolving Fund loans are expected to provide approximately $88 million for Recycled Water projects and $67 million for Regional Program projects. The other main revenue sources are approximately: $242 million in property tax revenues/recovery; $2 million from Watermaster for the groundwater recharge program; $68 million from NRW System user charges and capacity fees; $27 million in interest on reserves; and $5 million in payments from the sale of property.

FIGURE 8-3
WASTEWATER COLLECTION, TREATMENT, AND DISPOSAL PROGRAM
CUMULATIVE REVENUES/FINANCING SOURCES AND EXPENDITURES



9.0 EMERGING PLANNING ISSUES

In 2002, IEUA staff, in partnership with the Regional Technical Committee, prepared a comprehensive master plan of the regional wastewater facilities. In 2007/2008, IEUA staff will be closely coordinating an implementation strategy for the Master Plan with the regional committees to ensure that key technical issues are addressed.

The 2002 Wastewater Facilities Master Plan (WFMP) recognized the interrelationship of the IEUA's recycled water, renewable energy generation, organics management and groundwater recharge programs, and also the interrelationship of the facilities that serve these programs. The continued success of the IEUA service area is heavily dependent on a high- quality, dependable water supply which in turn is dependent on sound conservation and waste management practices. IEUA is seeking phase treatment plant expansions to ensure cost-effective capital improvements that will enhance existing capacity to process wastewater and meet the rapid growth needs of the service area.

EMERGING PLANNING ISSUES

In 2006/2007 IEUA staff has engaged in the following planning activities related to growth forecasts, sewer flows, system modeling and facility evaluation:

- Economic analysis of development and growth forecasts
- Evaluation of sewer flow factors for land use categories
- Monitoring and calibration of collection system and plant influent meters
- Update of sewer system hydraulic model
- Development of a Facilities Optimization Model

Also in 2006/2007 staff engaged in a effort to identify the potential for "Megatrends" to affect the agencys regional planning efforts. This effort focused on:

- Demographics
- Technology
- Scarcity
- Climate Change

- Geopolitics
- Globalization
- Biomolecular Evolution

Over the next year staff will hold additional workshops to develop general solutions, actions and ultimately an integrated strategy to address these megatrends.

During the Spring of 2006, IEUA asked the noted economist of the Inland Empire region, John Husing, to prepare a "build-out" forecast for the IEUA service area (June 2006) This report forecasted build-out by 2030. The pace of development to build-out will be different for each sector of construction. The industrial build-out is anticipated to occur in approximately 2018, followed by office market to build-out in roughly 2023. In around the same year the single family residential land is predicted to build-out. The multi-family residential market and retail-commercial developments are expected to reach saturation in 2020 and 2030, respectively. The above projections and their future revisions will form the basis for growth forecast and timely expansion of the IEUA collection and treatment systems.

Sewer flow factors (estimated sewer flow per building unit or acre for land use types) are used in combination with forecast development to predict the increased sewer flows into the regional system. IEUA staff has evaluated the sewer flow factors for the various land use types and concluded that the sewer flow factors historically used are higher than actual flows. In particular the sewer flow factors for two land use categories, industrial and residential, should be significantly lower when used to plan the timing of treatment plant expansions. Results from this evaluation have revealed that the sewer flow per EDU ranges from 160 to 250 gpd with newer developments in the lower end of the range. This is compared with 270 gpd which was used in the 2002 Master Plan. Indoor water conserving plumbing fixtures and lower population density are likely reasons for the lower flow in newer developments. IEUA staff will continue to monitor sewer flows and collect additional data to further refine sewer flow factors used for planning. In addition, the reduced sewer flow resulting from indoor water conservation will result in sewer flow with a higher BOD and suspended solid loading. This higher loading will have an impact on treatment plant capacity. This higher loading and is affect on treatment will be evaluated in 2007/2008.

In 2006/2007, IEUA's Sewer Model was updated as new infrastructure has been added to the Regional Sewer System since 2002, when the model was first created. The model was created to evaluate flows throughout the system, using diversions, while comparing it to the next ten year growth forecasts.

Issues that need to be addressed in the Sewer Model:

- Existing facilities need to be compared to the as-built drawings for accuracy;
- There are additional facilities that need to be entered or updated in the model ;
- There are new connection points that need to be added or modified to the system, as well as modifications of tributary areas;
- Waste water flow factors for new land use categories need to be added; and,
- Flow monitoring data at key locations needs to be compared with the model to test performance accuracy and identify additional opportunities for improvements to the model.

In 2006/2007, the Facilities Optimization Model was created to develop a comprehensive strategy to optimize the need and timing of wastewater treatment facilities improvements, as well as on-going operations and maintenance (O&M) activities for all of the conveyance, treatment, and disposal facilities taking into consideration the rapid urban growth. The Agency has developed an Asset Management Program to ensure adequate resources are budgeted for replacement and maintenance of the capital facilities. Maintenance and upgrades at RP-1 have already begun.

The goal of the Optimization Model is to provide a evaluation tool that will help the Agency develop a business plan strategy of expanding IEUA water recycling facilities that optimize the three key products from the treatment plants: provide recycled water supplies to customers; produce high quality biosolid compost products; and optimize the cost effective production of renewable energy. Ultimately the Agency would like to manage all assets under an integrated "one plant" concept, with a watershed-based management perspective, including the impact of nonstructural programs on the need and timing of wastewater facility expansions and the maximum use of water recycling supplies for beneficial reuse.

The Optimization Model will address the five following major components of IEUA's facilities:

- Wastewater Liquids treatment to optimize production of recycled water at plants for delivery to customers and renewable energy/biosolids production;
- Recycled Water delivery to customers (e.g., diurnal flow, storage and minimization of pumping costs);
- Renewable Energy Methane Gas Generation;
- Power /Electrical /Natural Gas Loads; and
- Wastewater/ Industrial/ Manure Solids production to composting facilities

The efforts of sewer flow monitoring, calibration and development of the optimization model have improved the understanding of the collection and treatment system capacities and confirmed that treatment plant capacity limits is typically due to capacity limitations within a few unit processes. Staff will be evaluating these unit process limitations or "bottlenecks" and identifying options for increasing plant capacity while limiting capital expenses. The evaluation will include operating some unit processes at or above rated capacities to "stress test" the actual process capacity. These evaluations initially be done on the southern service area plants (RP-2 Solids, RP-5 and CCWRF) and at RP-1 and RP-4 later in 2007.

Based on the flow forecast additional treatment capacity may be needed at RP-5 by 2012. However if growth in Ontario is less than forecast and sewer flows from new development are consistent with recent monitoring results an expansion may not be necessary until 2015. In order to assure that adequate capacity is available in the event development occurs as forecast the following activities and contingency plans will be implemented.

- RP-5 unit process bottlenecks and improvements – potential of 2 to 5 MGD additional capacity
- Montclair diversion facility capacity and redundancy – potential 2 to 5 MGD flow diversion from RP-5 to RP-1

- Re-commissioning of Whispering Lakes sewer lift station – potential 2.5 MGD flow diversion from RP-5 to RP-1
- Reduction of filtrate and recycle streams from RP-2 solids – potential 1 MGD flow reduction

Other leading planning projects include the following:

- Monitoring growth, development activity and other community economic activities that impact the Agency's infrastructure, and other utility service functions;
- Preparing plans and program evaluations in coordination with the retail agencies that will guide the Agency's policy development and investment decisions in meeting the future needs of the region, including the Ten-Year Capital Improvement Plan;
- Developing and implementing regional water conservation programs in partnership with the seven retail water agencies served by IEUA as well as other agencies within the Agency's service area, consistent with the Regional Urban Water Management Plan;
- Implementing the Inland Empire Regional Recycled Water Program and Chino Basin Groundwater Recharge Program, in partnership with the Chino Basin Watermaster and the cities and agencies served by IEUA;
- Leading a region-wide planning effort for the Chino Creek Watershed and Prado Basin to develop an integrated strategy for protecting water quality, preserving habitat, enhancing flood control and promoting environmental education.

Finally, on-going evaluations will prioritize and make the best use of future capital dollars by evaluating projects such as:

- **NRW System** -- How can the NRWS be fully utilized to improve water quality and defer expansions at RP-4 and RP-5?,

- **RP-4 Solids** -- When should organic solids be processed at RP-4 to minimize cost and increase energy production?,

- **Food Waste** – How should the existing anaerobic digester waste treatment systems be modified and operated to accept new waste streams (food waste) to enhance renewable energy production?,

- **CMOM** – How will implementation of the program for Collection System Maintenance Operation and Management (CMOM) and asset management affect future facility design and planning?,

- **System Automation** – How can the facilities in the system be automated to reduce staffing needs?, and,

- **Technology --** Use of technology to further reduce operating costs and land requirements at the IEUA water recycling plants.

Key goals will be to reduce operating costs at IEUA water recycling plants through cost-effective

capital improvements and to ensure environmental compliance. In addition, identifying and implementing improvements to the plants that will expand existing capacity to process wastewater and meet the rapid growth is a critical emerging issue.