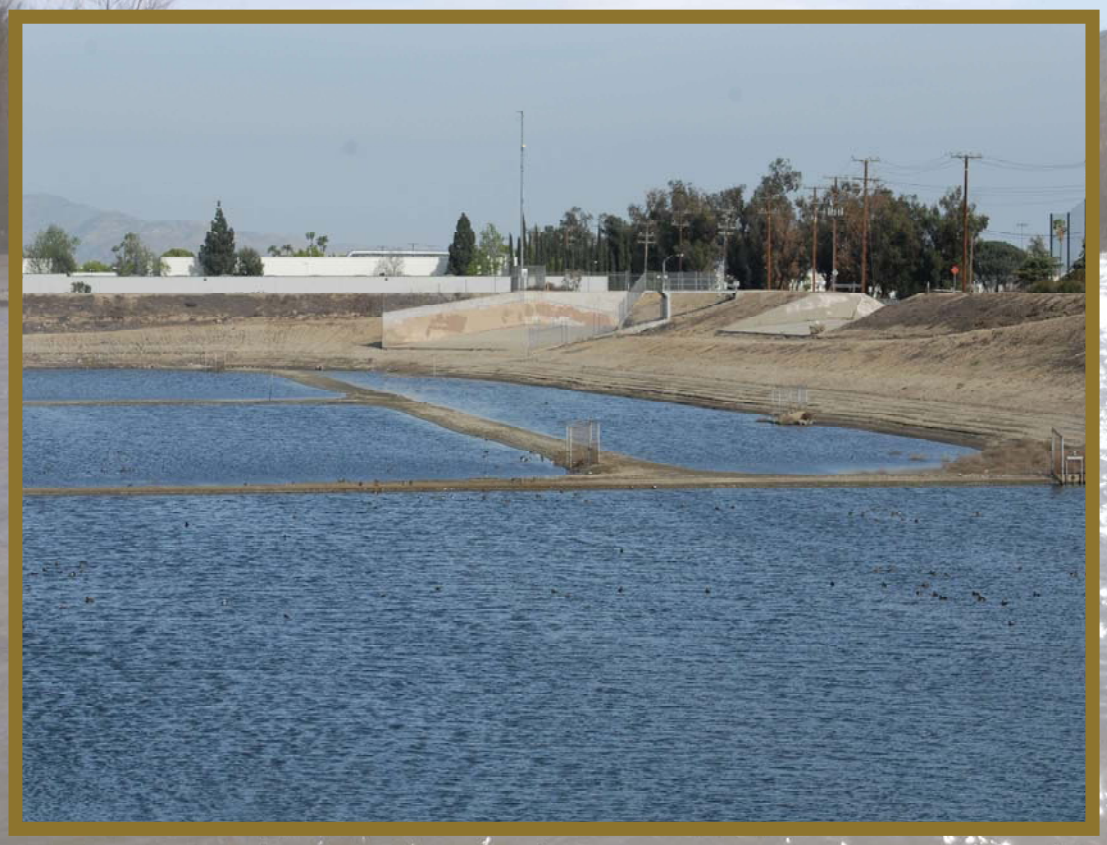
2016 Chino Basin Storm Water Resources Plan

Functional Equivalency Document



March 11, 2016

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

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1.1 Background

On September 24, 2014, Governor Brown signed SB 985 (Pavley) into law. This bill created a requirement that in order to receive grant funding for a storm water and/or dry-weather runoff project where the grant funding was provided by a bond act approved by the voters after January 1, 2014, the project be included in a Storm Water Resource Plan (SWRP). The minimum contents of an SWRP were specified in SB 985. The State Water Resources Control Board (SWRCB) published the final Storm Water Resources Plan Guidelines in December, 2015 (hereafter Guidelines), which describe the requirements of an SWRP consistent with SB 985 and other laws and regulations. The Guidelines indicate that an entity may have existing plans and agreements that in aggregate are functionally equivalent to an SWRP, in which case the entity can provide documentation demonstrating the nexus of its aggregation of plans and agreements to the requirements in the Guidelines. The objective of this report is to demonstrate that the aggregation of the existing storm water and dry-weather flow management programs and their implementation agreements in the Chino Basin are functionally equivalent to an SWRP.

The Inland Empire Utilities Agency (IEUA), the Chino Basin Watermaster (Watermaster), the Chino Basin Water Conservation District (CBWCD), and the San Bernardino County Flood Control District (SBCFCD), and the region's cities and water districts have worked together since 2000 to implement a regional program within the Chino Groundwater Basin to increase groundwater recharge with using storm water and dry-weather runoff. This is demonstrated through a 15-year process of collaboration; the development of recharge master plans; the construction, operation, maintenance, and monitoring of new recharge projects facilities; periodic reviews of these recharge projects' performance; and periodic updates to recharge master plans. The IEUA, Watermaster, the CBWCD, the SBCFCD, and the related parties completed the latest update to the Chino Basin Recharge Master Plan in 2013 and are in the process of implementing new projects that will increase the recharge of storm water, dry-weather runoff, and recycled water within the watershed of the Chino Basin.

The combined efforts of the IEUA, Watermaster, the CBWCD, and the SBCFCD to collect and recharge storm water and dry-weather runoff is part of a greater integrated water resources management plan for the Chino Groundwater Basin called the Optimum Basin Management Program (OBMP). The OBMP includes comprehensive monitoring (surface water, groundwater, and land subsidence), storm water and dry-weather runoff recharge improvements, salt and nutrient management, water quality improvements, the recovery of impaired groundwater for beneficial use, conjunctive use, land subsidence management, and safe yield management.

1.2 Organization of This Report

The remainder of this report is organized as follows:

- Section 2 of this report, *Storm Water Resources Plan for the Chino Basin Watershed*, describes the 2016 Chino Basin SWRP and the plans and agreements upon which it is built: the

Chino Basin OMBP, recharge master plans (storm water and dry-weather runoff management programs), and implementation agreements.

- Section 3 of this report, *Storm Water Resource Plan Checklist and Self-Certification Narrative*, is organized to precisely follow the checklist in Appendix A of the Guidelines, included herewith as the Appendix A, and explains how the 2016 Chino Basin SWRP complies with the Guidelines in greater detail than provided for in the checklist form. The last subsection describes how the Chino Basin SWRP complies with the Requirements of Section V of the Guidelines.
- Section 4 of this report, *References*, contains references to the documents cited in Sections 2 and 3 with uniform resource locators (urls), enabling online access to the reference documents. These references are also included in Sections 2 and 3 with urls, enabling immediate reference to seminal documents.
- Appendix A, *Appendix A: Checklist and Self-Certification*, contains the completed Checklist and Self-Certification form from the Guidelines Appendix A. The form provided in the Guidelines contains insufficient space for a full explanation of how the 2016 Chino Basin SWRP complies with the Guidelines. Each checklist item references directly to a subsection of Section 3.

1.3 Web Resources

The IEUA has established a webpage (www.ieua.org/stormwater-resources plan/ that contains a portable document file (pdfs) of this report, pdfs of the large scale map plates referred to in Sections 2 and 3, and pdfs of most of the references cited herein. Those references not contained on the IEUA webpage have urls to websites where they may be viewed. The GIS shapefiles that were used to construct the map plates are also included on the IEUA webpage as requested in the Guidelines.

Section 2 – Storm Water Resource Planning in the Chino Basin

2.1 Chino Basin Storm Water Resource Plan

The 2016 Chino Basin SWRP consists of a series of plans, implementation agreements and construction and operations activities when viewed in aggregate are functionally equivalent to an SWRP as described in the Guidelines. The table below summarizes the plans, agreements, monitoring and assessment activities, and construction and operations activities that define the scope of 2016 Chino Basin SWRP and when considered in aggregate demonstrate compliance with the Guidelines. Completed plans and agreements in Table 1 are available at the indicated website or at www.ieua.org/stormwater-resources plan/

Table 1
Elements of the 2016 Chino Basin Storm Water Resources Plan

Item	Plan, Agreement, Monitoring, Construction, or Operation	Function	Completed or Effective Date
Optimum Basin Management Program (OBMP)	Plan	Defines the integrated water resources plan for the Chino Basin and overlying Watershed that includes, among several initiatives, implementation of a recharge master plan and monitoring of its performance.	1999
Peace Agreement	Agreement	Commits the Watermaster and the IEUA to implement the OBMP, and as to recharge, it provides direction on how the basin should be recharged	2000
2001 Recharge Master Plan (2001 RMP)	Plan	Defines the universe of storm and dry-weather runoff recharge projects as of 2001	2001

Table 1
Elements of the 2016 Chino Basin Storm Water Resources Plan

Item	Plan, Agreement, Monitoring, Construction, or Operation	Function	Completed or Effective Date
Biennial State of the Basin Report http://www.cbwm.org/rep_engineering.htm	Monitoring and Assessment	Contains a comprehensive assessment of the surface and groundwater resources of the Chino Basin based on monitoring	2002 and every other year thereafter
Chino Basin Maximum Benefit Annual Report http://www.cbwm.org/rep_engineering.htm	Monitoring and Assessment	Contains a comprehensive assessment of the surface and groundwater resources of the Chino Basin based on monitoring	2005 and annually thereafter
Four-Party Agreement	Agreement	Defines IEUA, Watermaster, CBWCD, and SBCFCD responsibilities, and cost sharing in the implementation of the 2001 RMP	2001
Cost Sharing Agreement	Agreement	Defines cost sharing and financial obligations for construction of 2001 RMP facilities	2001 and periodically updated
Construction and operation of the 2001 RMP facilities	Construction and Operation	CEQA, design, and construction of the 2001 RMP facilities with most construction completed by 2008 and facilities in operation thereafter	2002 to present; operations to continue indefinitely
Peace II Agreement	Agreement	Requires the IEUA and Watermaster to update the recharge master plan every five years, revises cost sharing for O&M, and provides direction for supplemental water recharge	2007

Table 1
Elements of the 2016 Chino Basin Storm Water Resources Plan

Item	Plan, Agreement, Monitoring, Construction, or Operation	Function	Completed or Effective Date
One Water One Watershed 2.0	Plan	Integrated Water Resourced Management Plan for the Santa Ana Watershed	2014
2010 Recharge Master Plan Update (2010 RMPU)	Plan	Defines the universe of storm and dry-weather runoff recharge projects as of 2010	2010
2013 Amendment to the 2010 RMPU (hereafter the 2013 RMPU)	Plan	Defines the universe of storm and dry-weather runoff recharge projects as of 2013 and includes recommended projects and an implementation plan	2013
Upper Santa Ana River Habitat Conservation Plan http://www.uppersarhcp.com/	Plan	Defines a plan to protect habitat and develop the water resources of the upper Santa Ana River watershed	Projected 2017
Update to the 2001 Four-Party Agreement	Agreement	Updates the 2001 Four Party Agreement	Projected 2016
Update to the 2001 Facilities Cost Sharing Agreement	Agreement	Updates the IEUA and Watermaster cost sharing agreement for the 2013 RMPU	Projected 2016
Construction and operation of 2013 RMP facilities	Construction and Operation	CEQA, design, and construction of the 2013 RMPU facilities with construction completed by 2020 and facilities in operation thereafter	Projected 2015-2020; operations to continue indefinitely
2020 Recharge Master Plan Update	Plan	Defines the universe of storm and dry-weather runoff recharge projects as of 2020	Projected 2020

The Chino Basin storm water and dry-weather runoff recharge improvements for the 2001 RMP are included in the Santa Ana Regional Quality Control Plan[1] as a requirement to access the assimilative capacity for TDS and nitrate. When viewed over time, the Chino Basin SWRP began in 1998, has successfully progressed to the present, and continues into the future. The 2016 Chino Basin SWRP is not static plan – it is continuing process that will continue through 2030 pursuant to the Peace Agreements in the Chino Basin.

2.2 Optimum Basin Management Program

Figure 1 shows the location of the Chino Basin in the Santa Ana Watershed. The basin lies within the Counties of Los Angeles, San Bernardino, and Riverside; includes the Cities of Chino, Chino Hills, Eastvale, Fontana, Ontario, Pomona, Rancho Cucamonga, and Upland, as well as several other communities; and covers about 235 square miles.

The Chino Basin is an integral part of the regional and statewide water supply system. The Chino Basin is one of the largest groundwater basins in Southern California, containing about 5,700,000 acre-ft of water in storage, and has an unused storage capacity of over 1,000,000 acre-ft. Cities and other water supply entities produce groundwater for all or part of their municipal and industrial supplies. Agricultural users also produce groundwater from the basin. Irrigated agriculture has declined substantially in recent years and is projected to be almost nonexistent by 2020.

Production and storage rights in the Chino Basin are defined in the Stipulated Judgment[2] (Judgment), issued in 1978 (Chino Basin Municipal Water District vs. the City of Chino et al. [SBSC Case No. RCV 51010]). Since that time, the basin has been sustainably managed, as required by the Judgment, under the direction of a court-appointed Watermaster. The Judgment declares that the safe yield of the Chino Basin is 140,000 acre-ft/yr,[3] which is allocated among three pools of right holders as follows:

Overlying agricultural pool	82,800 acre-ft/yr
Overlying non-agricultural pool	7,366 acre-ft/yr
Appropriative pool	49,834 acre-ft/yr

A fundamental premise of the Judgment is that all Chino Basin water users are allowed to pump sufficient water from the basin to meet their requirements. To the extent that pumping by a party exceeds its share of the safe yield, assessments are levied by Watermaster to replace overproduction. The Judgment recognizes that there exists a substantial amount of available unused groundwater storage capacity space in the Chino Basin that can be utilized for storage and the conjunctive use of supplemental and basin waters, makes utilization of this storage

[1] The Santa Ana Regional Water Quality Control Plan is located here::
http://www.waterboards.ca.gov/santaana/water_issues/programs/basin_plan/index.shtml

[2] The stipulated agreement or Judgment, restated in 2012, is located here:
http://www.cbwm.org/rep_legal.htm

[3] Watermaster has conducted extensive hydrologic investigations and recently concluded that the safe yield has declined. Watermaster is currently in the process of resetting the safe yield. See Section 7 of 2013 Chino Basin Model Update and Recalculation of Safe Yield Pursuant to the Peace Agreement, October 2015.:
http://www.ieua.org/referenced-documents/.

subject to Watermaster control and regulation, and provides that any person or public entity, whether or not a party to the Judgment, may make reasonable beneficial use of the available storage, provided that no such use shall be made except pursuant to a written storage agreement with Watermaster.

The Chino Basin Judgment gave Watermaster the authority to develop an optimum basin management program (OBMP) for the Chino Basin, including both water quantity and quality considerations. Watermaster, with direction from the Court, began the development of the OBMP in 1998 and completed it in July 2000. The OBMP was developed in a public collaborative process that identified the needs and wants of all the stakeholders, developed a set of management goals, and identified impediments to those goals and a series of actions that could be taken to remove those impediments and achieve management goals. The goals of the OBMP process include:

1. Enhance Basin Water Supplies
2. Protect and Enhance Water Quality
3. Enhance Management of the Basin
4. Equitably Finance the OBMP

Table 1 lists these goals, their impediments, actions that can be taken to remove the impediments, the implications of these actions, and the OBMP program element that contains the action.

The Court approved the OBMP and its implementation agreement, hereafter the Peace Agreement, in October 2000.[4,5] The OBMP consists of nine program elements or initiatives that contain the actions that remove the impediments to the OBMP goals and enable their achievement. These include:

- Program Element 1 – Develop and Implement Comprehensive Monitoring Program
- Program Element 2 – Develop and Implement Comprehensive Recharge Program
- Program Element 3 – Develop and Implement Water Supply Plan for the Impaired Areas of the Basin
- Program Element 4 – Develop and Implement Comprehensive Groundwater Management Plan for Management Zone 1
- Program Element 5 – Develop and Implement Regional Supplemental Water Program
- Program Element 6 – Develop and Implement Cooperative Programs with the Regional Water Quality Control Board, Santa Ana Region (Regional Board) and Other Agencies to Improve Basin Management
- Program Element 7 – Develop and Implement Salt Management Program

[4] Optimum Basin Management Program, Phase I Report, August 1998, WEI. The OBMP is located here: http://www.ieua.org/referenced-documents/.

[5] The Peace Agreement is located here: http://www.ieua.org/referenced-documents/.

- Program Element 8 – Develop and Implement Groundwater Storage Management Program
- Program Element 9 – Develop and Implement Conjunctive-Use Programs

Each program element contains an implementation plan and schedule. The implementation plan and schedule are included in both the OBMP and the Peace Agreement.: The parties to the Peace Agreement were bound to implement it and have done so under close Court supervision.

2.3 Storm Water Resource Planning

The IEUA, Watermaster, the CBWCD, and the SBCFCD and the region's cities and water districts have collaborated to implement all of these program elements. Program Element 2 – Develop and Implement Comprehensive Recharge Program is fundamental to achieving the first two OBMP goals (1 Enhance Basin Water Supplies and 2 Protect and Enhance Water Quality). Prior to the OBMP, the SBCFCD and the US Army Corps of Engineers (USACE) constructed flood control projects that efficiently capture and convey storm water to the Santa Ana River, effectively eliminating the groundwater recharge that formerly took place in the stream channels and flood plains of the Chino Basin. These flood control projects consisted of concrete lining of all the major drainages in the basin and the construction of passive retention basins to temporarily store storm water and release it in 24 hours or less. Insufficient provisions were made to mitigate the loss of recharge from these flood control projects. Figure 2 shows the locations of the major channels that drain the Chino Basin area and their time history of concrete lining. Figure 3 shows the time history of storm water recharge in the channels that cross the Chino Basin from the San Gabriel Mountains to the Santa Ana River. The loss in recharge to the basin is estimated to be at least 15,000 acre-feet/year (afy). Also, there were no mitigation efforts to preserve recharge when land use was converted from native and agricultural uses to urban uses. Lining the drainages with concrete and changes in land use resulted in a decline in the sustainable yield of the Chino Basin. Program Element 2 was developed to reverse the loss in yield.

Increasing stormwater recharge also results in the capture and recharge of dry-weather runoff. Capturing and recharging storm water and dry-weather runoff improves water quality in the Santa Ana River, reducing the concentrations of metals, nutrients, pathogens, and other constituents of concern. These contaminants are eliminated during recharge through soil-aquifer treatment processes and thus are not a concern for groundwater degradation. In fact, the total dissolved solids (TDS) and nitrogen concentrations in storm water recharge are very low, and subsequently increasing stormwater recharge lowers the TDS and nitrate concentration in groundwater. In summary, increasing the recharge of storm water and dry-weather runoff increases the sustainable yield of the Chino Basin and improves the water quality of both the Chino Basin and the Santa Ana River, the latter being a regional benefit extending to other Santa Ana River Watershed parties and Santa Ana River Watershed habitat.

2.4 Recharge Master Plan Activities and Project Implementation

Pursuant to the OBMP and the Peace Agreement, the IEUA, Watermaster, the CBWCD, the SBCFCD and the region's cities and water districts completed a recharge master plan in 2001 (hereafter the 2001 Recharge Master Plan or 2001 RMP) and began its implementation in 2001

with construction occurring between 2004 and 2014. Seventeen existing flood retention facilities were modified to increase diversion rates, increase conservation storage, and subsequently increase the recharge of storm water and dry-weather runoff. And, two new recharge facilities were constructed. Figure 4 shows these facilities. The cost of these recharge improvements was about $60 million, of which half came from grants provided from Proposition 13 bonds and other grants with the remainder paid for by the IEUA and Watermaster.

Watermaster has permits from the SWRCB to divert surface water to the spreading basins shown in Figure 4, store the recharged water, and subsequently recover it for beneficial use. Watermaster holds these permits in trust for all entities that rely on groundwater from the Chino Basin.

Figure 5 shows the estimated annual recharge of storm water, dry-weather runoff, and recycled water for the period of 2004 through 2015. Figure 5 is based on the comprehensive monitoring of the recharge basins by the IEUA; this information is documented in monthly reports prepared by the IEUA and annual reports prepared by the Chino Basin Watermaster, the latter of which are submitted to the SWRCB. Prior to 2004, there was no significant recharge of dry-weather runoff, and recycled water recharge was about 500 acre-ft/yr. Based on monitoring of the recharge performance and numerical model investigations, the aggregate average annual increase in storm and dry-weather runoff recharge due to the implementation of the 2001 RMP is estimated to be about 6,000 acre-ft/yr. The aggregate recharge of new storm water, dry-weather runoff, and recycled water created through the implementation of the 2001 RMP for the ten-year period July 2006 through June 2015 is about 106,000 acre-ft and has reduced the demand for imported water from the State Water Project (SWP) by the same amount, averaging about 10,600 acre-ft/yr. During most of this period, storm water recharge was suppressed by drought, and the recycled system was expanding; the amount of storm and recycled water recharge due to the 2001 RMP will increase substantially with the fullness of time.

The IEUA, Watermaster, the CBWCD, and the SBCFCD prepared the 2010 Recharge Master Plan Update and amended it in 2013. The 2010 Recharge Master Plan Update and its 2013 amendment (hereafter the 2013 Recharge Master Plan Update or 2013 RMPU) were developed in a transparent process, including nine public workshops for the 2010 Recharge Master Plan Update and 67 steering committee meetings and workshops for the 2013 RMPU. The steering committee meetings were open to all stakeholders with an interest in storm water and dry-weather runoff management and groundwater management in the Chino Basin. The IEUA and Watermaster Boards of directors approved the 2013 RMPU, and it was submitted to the Court in the fall of 2013 for review and approval. The Court approved the 2013 RMPU in 2014 and directed the IEUA and Watermaster to implement it.

The 2013 RMPU contains two types of recharge projects: yield enhancement and production sustainability projects. The steering committee issued a "call for projects" to all entities with an interest in storm water and dry-weather management and groundwater management in the Chino Basin. The steering committee developed screening criteria to evaluate and rank the recharge projects. In total, 39 yield enhancement projects and nine production sustainability projects were identified and evaluated by the steering committee to determine average annual stormwater recharge and recycled water recharge capacities. After four years of meetings, the steering committee recommended the storm water projects listed in Table 2. Table 2 lists the project name, new storm water recharge, recycled water recharge capacity, and capital cost.

The 2013 RMPU will increase storm water and dry-weather runoff recharge in the Chino Basin by about 5,500 acre-ft/yr and increase recycled water recharge capacity by about 7,100 acre-ft/yr. The total cost to implement the 2013 RMPU is about $41 million. When fully implemented, the 2013 RMPU will reduce the reliance on SWP water by about 12,600 acre-ft/yr.

The 2013 RMPU implementation includes a process to create a database of all known local storm water and dry-weather runoff management projects implemented through the municipal separate storm sewer system (MS4) permits in the Los Angeles, Riverside, and San Bernardino County parts of the Chino Basin. The project types, physical characteristics, and time histories of maintenance are being stored in a relational database for periodic review with the intent of incorporating them into surface water and groundwater models. The surface water model will be used to estimate the new storm water discharge and dry-weather runoff and the subsequent recharge of these waters in the Chino Basin created by these projects. The groundwater model will be used to evaluate the groundwater basin response and net new recharge to the basin and to subsequently reset the basin safe yield. The water quality benefits to the Chino Basin and the Santa Ana River will be estimated in this process.

Presently, the IEUA, Watermaster, the CBWCD, and the SBCFCD are in the process of updating their Four-Party Agreement, used to implement, operate, maintain, and monitor the 2001 RMP facilities, and to enable the implementation of the 2013 RMPU. The IEUA and Watermaster will split the capital cost of 2013 RMPU projects that result in an increase in storm, dry-weather runoff, and recycled waters, and Watermaster will pay the capital cost for improvements that increase storm water and dry-weather runoff recharge only. Pursuant to the Peace II Agreement, recharge operations and maintenance costs are shared on a pro rata basis with the IEUA's share based on the annual amount of recycled water recharged relative to the total amount of annual recharge, the latter including storm water, dry-weather runoff, and recycled water recharge. The financing plan for the 2013 RMPU is currently in development and will be completed in late 2016.

The IEUA and Watermaster are currently funding the advanced planning of the recharge improvements listed in Table 2 for the 2013 RMPU and reporting on the technical and budget statuses at monthly Recharge Investigation Project Committee (RIPCom) meetings and at their respective monthly board meetings. Table 3 summarizes the status of each of the recommended 2013 RMPU projects as of January 2016.

2.4.1 Storm Water Resource Planning in the Chino Basin is a Continuous Process

In summary, the IEUA, Watermaster, the CBWCD, the SBCFCD and the region's cities and water districts have been working together since 1998 to develop an integrated water resources management plan for the Chino Basin area, have coordinated the development and implementation of the OBMP with other stakeholders in the Santa Ana River Watershed OWOW 2.0 plan, and have been implementing the OBMP since 2000. The process to develop and implement the OBMP has been open and transparent. Implementation of OBMP Program Element 2 – Develop and Implement Comprehensive Recharge Program has been very successful: increasing the recharge of storm water, dry-weather runoff, and recycled water by an average of 10,600 acre-ft/yr. Implementation of the 2001 RMP in the Chino Basin has reduced

the demand for imported SWP water by Chino Basin water agencies by 10,600 acre-ft/yr and improved the water quality in the Chino Basin and the Santa Ana River. The IEUA, Watermaster, the CBWCD, and the SBCFCD have conducted extensive technical investigations and exhaustive public outreach to develop the 2013 RMPU, and they are engaged in advanced planning to implement it. Implementation of the 2013 RMPU is expected to reduce the demand for SWP water by an additional 12,600 acre-ft/yr.

Pursuant to the Peace Agreements and Court order, the process of planning and construction of additional recharge projects will occur through 2030, and could be extended through 2060 if the Peace Agreement extension provision is implemented.

Section 3 – Storm Water Resource Plan Checklist and Self-Certification Narrative

This section demonstrates the functionally equivalency of the 2016 Chino Basin SWRP to the SWRP requirements in the Guidelines. This section is organized to precisely follow the *Appendix A Self Certification and Checklist* (Checklist) from the Guidelines. Each requirement in the Checklist is listed in a subsection below with a response. This approach is used to provide more a complete response to each requirement in the Checklist than can be accomplished due to space limitations in the Checklist form. Each response includes a "yes" or "no" as to whether or not a requirement has been met and an explanation as to why. All relevant documents used in the response are cited herein and they are available from the IEUA webpage: http://www.ieua.org/referenced-documents/ or can be accessed from another website at the url assigned to it.

The Checklist form from the Guidelines is also included in this report as Appendix A. The response to each requirement in the Checklist form in Appendix A refers explicitly to a subsection of this Section 3.

3.1 Watershed Identification (Guidelines Section VI.A)

The Chino Basin watersheds considered in the 2013 RMPU include, from west to east, the San Antonio Creek/Chino Creek system, the Cucamonga Creek system, the Day Creek system, and the San Sevaine Creek system. The watershed boundaries and subarea boundaries were developed based on fine-scale topographic mapping and storm drainage plans provided by the Cities and the Counties and were subsequently verified in the field. The scale of the watershed mapping covers the Chino Basin and the areas under the common jurisdictions of the IEUA, Watermaster parties, the CBWCD, and the SBCFCD. The subarea delineation used in the 2013 RMPU was required to develop and apply numerical surface water models to evaluate and design storm water and dry-weather runoff recharge facilities. The systems approach adopted in the 2013 RMPU allowed for determining the interaction between existing and proposed facilities, quantification of tradeoffs between various facilities, and various scales of improvements at recharge facilities. The drainage systems identified in the watershed maps were modeled such that the IEUA and Watermaster could evaluate the change in recharge at existing and/or proposed facilities due to the construction of new recharge facilities or the expansion of existing recharge facilities located upstream. The watershed maps are included in the 2013 Recharge Master Plan and the requested GIS files are available on the IEUA SWRP webpage located at http://www.ieua.org/stormwater-resources-plan/ . The plates include the following:

- Plate 1 – Chino Basin Subwatersheds and Surface Water Diversions within the Santa Ana Watershed
- Plate 2 – Recharge Improvements in the Chino Basin Since Implementation of the OBMP and the 2001 Recharge Master Plan
- Plate 3 – Recharge Facilities and Channel Lining History in the Chino Basin
- Plate 4 – Water Service Areas and Recharge Facilities in the Chino Basin

- Plate 5 – Land Use Control Agencies and Recharge Facilities in the Chino Basin

3.1.1 Plan Identifies Watershed and Subwatershed(s) for Storm Water Resource Planning [Water Code Section 10565(c), 10562(b)(1), 10565(c)]

Yes. The Chino Basin Watershed is wholly contained in the Santa Ana River Watershed. The Chino Basin Watershed area overlies: most of the adjudicated Chino Basin, the service areas of the IEUA, the retail water agencies that depend on the Chino Basin for water supply, the CBWCD; and parts of the services areas of the Los Angeles County Flood Control District, Riverside, Riverside County Flood Control and Water Conservation District and SBCFCD. The subwatersheds include San Antonio/Chino Creek, Cucamonga Creek, Day Creek and San Sevaine Creek. Each of these subwatersheds has been subdivided into very small subdrainages to enable the detailed numerical surface water modeling, recharge project conceptualization and evaluations of existing and proposed recharge projects. This level of watershed discretization provides for a geographically comprehensive, watershed-based recharge master plan, enabling: the systematic numerical analysis of how the various spreading basins and channels function and interact; quantification of multiple benefits including water supply, water quality and other environmental benefits (e.g., reduction in greenhouse gas emissions); and for the optimization of recharge benefits and costs.

3.1.2 Plan Is Developed on a Watershed Basis, Using Boundaries as Delineated by USGS, CalWater, USGS Hydrologic Unit Designations, or an Applicable Integrated Regional Water Management Group, and Includes a Description and Boundary Map of Each Watershed and Sub-watershed Applicable to the Plan

Yes. The Chino Basin SWRP is developed on a watershed basis, the watershed being four tributaries to the Santa Ana River that include San Antonio Creek/Chino Creek system, the Cucamonga Creek system, the Day Creek system, and the San Sevaine Creek system. The initial watershed boundary delineation was based on the USGS Hydrologic Unit designations and then superseded by more refined delineation based on fine-scale topographic mapping and storm drainage plans provided by the Cities and the Counties, and subsequently verified in the field. The watershed boundaries used in the 2013 RMPU are consistent with the watershed boundaries included in the Santa Ana Watershed IRWMP, called One Water One Watershed (OWOW) 2.0.

3.1.3 Plan includes an explanation of why the watershed(s) and sub-watershed(s) are appropriate for storm water management with a multiple-benefit watershed approach

Yes. See Section 3.1.1.

3.1.4 Plan Describes the Internal Boundaries within the Watershed (Boundaries of Municipalities; Service Areas of Individual Water, Wastewater, and Land Use Agencies, Including Those Not Involved in the Plan; Groundwater Basin Boundaries, Etc.; Preferably Provided in a Geographic Information System Shape File)

Yes. The boundaries of the municipalities and counties; the service areas of individual water, wastewater, and land use control agencies, including those not involved in the Plan; and the groundwater basin boundaries were included in the 2013 RMPU and are included on the IEUA SWRP webpage located here http://www.ieua.org/stormwater-resources-plan/. Map plates showing these boundaries are included as pdf files and GIS shapefiles.

3.1.5 Plan Describes the Water Quality Priorities within the Watershed Based on, at a Minimum, Applicable TMDLs and Consideration of the Water Body-Pollutant Combinations Listed on the State's Clean Water Act Section 303(d) List of Water Quality Limited Segments (a.k.a. Impaired Waters List)

Yes. Table 4 lists the water quality limited segments in the Chino Basin[6] for the watersheds included in the plan and the 2013 RMPU projects that will provide water quality benefits. The primary benefit is achieved through reduced storm water discharge downstream of the proposed Ely, Montclair, and Turner Basin projects, and the diversion of dry-weather (urban) runoff to the spreading basins and its subsequent recharge. While there are no impaired water quality segments on the Day and San Sevaine Creek systems, the reductions in storm water discharge and dry-weather runoff at the proposed facilities will improve water quality in these creeks downstream of the proposed 2013 RMPU projects and in the Santa Ana River.

3.1.6 Plan Describes the General Quality and Identification of Surface and Ground Water Resources within the Watershed (Preferably Provided in a Geographic Information System Shape File)

Yes. Please see the Watermaster biennial State of the Basin Report sections entitled *General Hydrologic Conditions* and *Water Quality* that characterizes groundwater conditions in the Chino Basin and the annual Chino Basin Maximum Benefit Annual Report section 3 entitled *Maximum-Benefit Monitoring Program: Data Collected in 2014* and Section 4 entitled *The Influence of Rising Groundwater on the Santa Ana River* that characterizes surface and ground water resource conditions in the Basin.[7, 8] The former report will be updated later this year. The latter is being updated and will be available in May 2016.

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[6] The current 303 (d) of impaired water bodies in the Santa Ana River watershed is located here: http://www.waterboards.ca.gov/santaana/water_issues/programs/tmdl/docs/303d/2010_303d.pdf

[7] See the groundwater quality section in the 2014 State of the Basin Report, located here: http://www.cbwm.org/rep_engineering.htm

[8] See Sections 3 and 4 of the Maximum Benefit Annual Report, located here: http://www.cbwm.org/rep_engineering.htm

3.1.7 Plan Describes the Local Entity or Entities that Provide Potable Water Supplies and the Estimated Volume of Potable Water Provided by the Water Suppliers

Yes. Please see Section 2.4 of the 2013 RMPU[9] for a detailed description of the potable water demands for entities that provide potable water supplies and the sources of those supplies.

3.1.8 Plan Includes Map(s) Showing Location of Native Habitats, Creeks, Lakes, Rivers, Parks, and Other Natural or Open Space within the Sub-Watershed Boundaries

Yes. Please see Section 5.9 of the OWOW 2.0 report[10] for the subject maps. The maps and related documentation in the OWOW 2.0 report are presently being updated. The IEUA is working in partnership with the other regional water agencies in the Santa Ana River Watershed, including the Eastern Municipal Water District, the Orange County Water District, the San Bernardino Valley Municipal Water District, and the Western Municipal Water District to develop the Upper Santa Ana River Habitat Conservation Plan (USARHCP).[11] One of the goals of the USARHCP is to identify key habitat areas and to create a mitigation bank to enable their protection and/or the creation of new habitat. This plan should be completed in July 2017.

IEUA has dedicated 3.7 acres of habitat at its RP3 recharge site to the preservation of riparian and woodland habitat. The habitat is conserved as mitigation for the recharge facilities constructed following the 2000 RMP. The site collects dry weather flows from Declez creek (a tributary to San Sevaine Creek) where they are cleans by the wetlands and recharged. In 2004, IEUA dedicated the Chino Creek Wetlands and Educational Park (CCP) in Chino on 22 acres. The park was partially funded by a state grant from the State Water Resources Control Board and was designed to restore native habitat and natural drainage, showcasing the environmental values of the Prado Basin, the largest freshwater habitat remaining in southern California. The park is adjacent IEUA LEED Platinum headquarters building, which integrates LID methods in its construction, landscaping, and integration with the wetlands park. Stormwater is flows through the park are polished through the LID in place and by the wetlands environment. Adjacent the IEUA headquarters runs Magnolia Channel (a tributary to Chino Creek) which has had significant bacteriological and sediment runoff in storms. IEUA has created the Magnolia channel settling basin and riparian habitat to remove the sediment and bacteria from storm flows in Magnolia Channel. CBWCD houses a water conservation garden that is open to the community for drought tolerant plant and landscape tours and educational water conservation events.

[9] Please see Section 2.4 of the 2013 RMPU located here: http://www.ieua.org/referenced-documents/.

[10] Please see Section 5.9 of the OWOW 2.0 report located here: http://www.sawpa.org/owow-2-0-plan-2/.

[11] Please visit http://www.uppersarhcp.com for a description of the USARHCP.

3.1.9 Plan Identifies (Quantitative, if Possible) the Natural Watershed Processes that Occur within the Sub-Watershed and a Description of How Those Natural Watershed Processes Have Been Disrupted within the Sub-Watershed (e.g., High Levels of Imperviousness Convert the Watershed Processes of Infiltration and Interflow to Surface Runoff Increasing Runoff Volumes; Development Commonly Covers Natural Surfaces and Often Introduces Non-Native Vegetation, Preventing the Natural Supply of Sediment from Reaching Receiving Waters)

Yes. The Chino Basin Watermaster has identified the change in recharge over the Chino Basin that occurred from the change in land use from native through agriculture and urban development and recently reported it in 2013 Chino Basin Groundwater Model Update and Redetermination of Safe Yield.[12] Figure 3, abstracted from the aforementioned report, shows the time history of storm water recharge in the channels that cross the Chino Basin from the San Gabriel Mountains to the Santa Ana River and the decline in recharge due to the concrete-lining of the major drainages that cross the basin from the San Gabriel Mountains to the Santa Ana River. The water budget tables in Section 3 of the aforementioned report show how historical land use, flood control, and other water management practices have reduced the recharge to the basin. Section 7 shows similar tables for historical projected land use, current flood control management, and projected water management practices.

3.2 Water Quality Compliance (Guidelines Section V)

3.2.1 Plan Identifies Activities that Generate or Contribute to the Pollution of Storm Water or Dry Weather Runoff, or that Impair the Effective Beneficial Use of Storm Water or Dry Weather Runoff [Water Code Section 10562(d)(7)]

Yes. Please see Sections 2 and 3 of the Phase 1 OBMP Report[13]and Sections 3 and 7 of the 2013 Chino Basin Model Update and Recalculation of Safe Yield[14] report. These documents describe how historical land use changes and stormwater management have impacted the discharge of storm water and dry-weather runoff in the major drainages that traverse and recharge the Chino Basin. Section 2 of the 2014 State of the Basin Report[15] illustrates the cumulative impacts of land use and storm water management in the Chino Basin Watershed have impacted the storm water discharge in the Santa Ana River at Prado Dam.

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[12] See Sections 3 and 7 of 2013 Chino Basin Model Update and Recalculation of Safe Yield Pursuant to the Peace Agreement located here: http://www.ieua.org/referenced-documents/. .

[13] See Sections 2 and 3 of the Chino Basin Optimum Basin Management Program Report located here: http://www.ieua.org/referenced-documents/.

[14] See Sections 3 and 7 of the 2013 Chino Basin Model Update and Recalculation of Safe Yield Pursuant to the Peace Agreement located here: http://www.ieua.org/referenced-documents/.

[15] See Section 2 of the 2014 State of the Basin Report located here: http://www.cbwm.org/rep_engineering.htm

3.2.2 Plan Describes How It Is Consistent and Assists in, Compliance with Total Maximum Daily Load Implementation Plans and Applicable National Pollutant Discharge Elimination System Permits [Water Code Section 10562(b)(5)]

Yes. The 2001 RMP projects were incorporated into the Santa Ana River Watershed Water Quality Control (Basin) Plan in Regional Board Resolution R8-2004-0001[16] as part of the salt and nutrient management plan for the Chino Basin. The Santa Ana Regional Water Quality Control Board (Water Board) subsequently included "completion" and "operation" of the storm water recharge projects into the recycling permits issued to the IEUA and Watermaster; the permits were issued in Water Board Resolutions R8-2005-0033, R8-2007-0039, and R8-2009-0057.[17] The TDS and nitrogen concentration limits in the recycling permit are dependent on increasing storm water recharge pursuant to the OBMP and the 2001 RMP. The IEUA and Watermaster are fully compliant with the permit requirements. Note also that the 2001 RMP and proposed 2013 RMPU facilities intercept and recharge all dry-weather runoff that is tributary to them.

3.2.3 Plan Meets Applicable Permits and Describes How It Meets all Waste Discharge Permit Requirements [Water Code Section 10562(b)(5)]

Yes. See explanation provided in 3.2.2 immediately above regarding IEUA NPDES/water recycling permits that require the time-certain construction of storm water recharge improvements. The IEUA and the Watermaster are fully compliant with these permits.

The Chino Basin Watermaster has acquired water rights to divert storm water for recharge in the Chino Basin. These permits, their priority dates, annual diversion limits, instantaneous diversion rates, and diversion periods are listed below.

[16] See Section 5 Implementation of the Santa Ana Water Quality Control Plan located here: http://www.waterboards.ca.gov/santaana/water_issues/programs/basin_plan/index.shtml

[17] The Water Board requires compliance with the maximum benefit demonstrations, including the construction and operation of the 2001 RMP facilities. See the following historical issuance of permits that requires the construction and operation of the 2001 RMP facilities and the storm water dilution requirements are located here: http://www.waterboards.ca.gov/santaana/board_decisions/adopted_orders/orders/2005/05_033_wdr_ieua_cbw_04152005.pdf, http://www.waterboards.ca.gov/santaana/board_decisions/adopted_orders/orders/2007/07_039_wdr_ieuacbw_cbrwgrp_06292007.pdf, http://www.waterboards.ca.gov/santaana/board_decisions/adopted_orders/orders/2009/09_057_amending_07-0039_ieua_cbw_phase1_2.pdf

Permit Number	Priority Date	Annual Diversion Limit (afy)	Instantaneous Diversion Rate (cfs)	Diversion Period
19895	6/10/1985	15,000	179	11/1 to 4/30
20753	4/9/1987	27,000	440	10/1 to 5/1
21225	11/4/2002	68,500	115,570	1/1 to 12/31
Total	--	110,500	116,189	--

The IEUA constructed and has been operating monitoring equipment that enables them to compute the amount of storm water and dry-weather runoff recharge and reports this information to Watermaster. Watermaster prepares an annual report and submits it to the SWRCB, describing the amount of storm water and dry-weather runoff that is diverted and recharged and the change in discharge and relative change in discharge for each tributary to the Santa Ana River due to these diversions. Watermaster is fully compliant with all of its water rights permit requirements.

3.3 Organization, Coordination, Collaboration (Guidelines Section VI.B)

3.3.1 Local Agencies and Nongovernmental Organizations Were Consulted in Plan Development [Water Code Section 10565(a)]

Yes. Extensive coordination and outreach occurred in the development of the 2013 RMPU, including nine public community workshops[18] and 67 steering committee meetings.[19] Attendees included public agencies (regional water management, retail water agencies, flood control districts, and regulatory agencies), private water companies, and members of the public. Please see the Watermaster ftp site [20]; provided here are the sign-in sheets, agendas, and meeting materials for the 67 recharge master plan steering committee meetings that occurred through the development of the 2013 RMPU and the subsequent meetings in 2014 and 2015 related to its implementation.

See the 2013 RMPU, Section 8[21] and more specifically the implementation plan therein that identifies the public agencies, one private water company (Fontana Water Company), and one private business (CSI) required to implement the plan. In addition to steering committee meetings, regular progress reports were included at IEUA, Watermaster, CBWCD, and SBCFCD board meetings. This process continues through monthly Recharge Investigation and Projects Committee (RIPCom) meetings[22] and updates at IEUA, Watermaster, CBWCD, and SBCFCD board meetings.

[18] The workshop agendas and presentation materials are located here: http://52.32.17.3:7777/

[19] The agendas, presentation materials, and sign-in sheets are located here: http://www.cbwm.org/FTP/CB%20RMPU%20Steering%20Committee/Meetings%20By%20Date/

[20] Ibid

[21] See the 2013 RMPU, Section 8 located here: http://www.ieua.org/referenced-documents/.

[22] The agendas, presentation materials, and sign-in sheets are located here: http://www.cbwm.org/FTP/Recharge%20Investigations%20and%20Projects%20Committee%20(RIPCom)/

3.3.2 Community Participation Was Provided for in Plan Development [Water Code Section 10562(b)(4)]

Yes. See section 3.3.1 above.

3.3.3 Plan Includes Description of the Existing Integrated Regional Water Management Group(s) Implementing an Integrated Regional Water Management Plan

Yes. The Santa Ana Watershed Project Authority (SAWPA) led a collaborative process with public agencies, private utilities, and NGO stakeholders in the watershed and subsequently prepared and adopted an IRWMP called OWOW 2.0. The entities implementing OWOW 2.0 can be found at the OWOW 2.0 website.[23] The IEUA, Watermaster, the CBWMD, and the SBCFCD participated in the development of OWOW 2.0.

The IEUA, Watermaster, the CBWCD, and the SBCFCD are working with SAWPA to incorporate the Chino Basin SWRP into OWOW 2.0 will occur in March 2016. The types of projects included in the 2013 RMPU are consistent with those recommended for optimization and prioritization (see OWOW 2.0, Section 5.8,) and cited here:

> "Existing FCD (flood control district) basin and facility retrofit evaluation and implementation studies (MS4 Permit requirement): Determine stormwater capture and groundwater recharge potential, concomitant with continued flood protection requirements, for FCD flood control district] facilities throughout the SAR [Santa Ana River] Watershed. Develop list of priorities for implementation, and consult with potential project partners."

The IEUA, Watermaster, the CBWCD, the SBCFCD, public water agencies, private water retailers, municipal water users, agricultural water users, industrial water users, and other stakeholders in the Chino Basin area have worked together over four years to identify recharge opportunities with multiple benefits, to analyze them to determine recharge potential, to design the structural and operational improvements required to increase recharge, and to prioritize these improvements. The OWOW 2.0 recommendation regarding the retrofit of existing "FCD" facilities comes in part due to the successful recharge projects developed in existing FCD facilities in the 2001 RMP by the IEUA, Watermaster, the CBWCD, and the SBCFCD.

3.3.4 Plan Includes Identification of and Coordination with Agencies and Organizations (Including, but Not Limited to Public Agencies, Nonprofit Organizations, and Privately Owned Water Utilities) that Need to Participate and Implement Their Own Authorities and Mandates in Order to Address the Storm Water and Dry Weather Runoff Management Objectives of the Plan for the Targeted Watershed

Yes. See section 3.3.1 above.

[23] See Section 2.2 of OWOW 2.0, located at http://www.sawpa.org/owow-2-0-plan-2/

3.3.5 Plan Includes Identification of Nonprofit Organizations Working on Storm Water and Dry Weather Resource Planning or Management in the Watershed

No. Nonprofit organizations have not been engaged in the development of the 2016 Chino Basin SWRP. IEUA and the Watermaster will engage with them in the future.

3.3.6 Plan Includes Identification and Discussion of Public Engagement Efforts and Community Participation in Plan Development

Yes. See section 3.3.1 above.

3.3.7 Plan Includes Identification of Required Decisions That Must be Made by Local, State or Federal Regulatory Agencies for Plan Implementation and Coordinated Watershed-Based or Regional Monitoring and Visualization

Yes, in part, but not all required decisions have been identified. Please see Section 8 of the 2013 RMPU[24], specifically the implementation plan for a description of the permits and decisions that are presently known to be required. The permits and decisions required will be determined after preliminary designs are completed and the CEQA documents for the projects are certified in the fall of 2016. A list of required decisions will be prepared then.

3.3.8 Plan Describes Planning and Coordination of Existing Local Governmental Agencies, Including Where Necessary New or Altered Governance Structures to Support Collaboration among Two or More Lead Local Agencies Responsible for Plan Implementation

Yes. See section 3.3.1 above. Note that the existing governance structures did not need to be altered to develop the 2016 SWRP.

3.3.9 Plan Describes the Relationship of the Plan to Other Existing Planning Documents, Ordinances, and Programs Established by Local Agencies

Yes. The IEUA and the Watermaster have an existing agreement that describes their cost sharing of the 2001 RMP facilities and other recharge facilities that have been constructed since 2001.[25] The IEUA and Watermaster are in a process to revise this agreement to finance the construction of the 2013 RMPU facilities. The revised agreement will be completed in the fall of 2016.

[24] Please see Section 8 of the 2013 RMPU, located here: http://www.ieua.org/referenced-documents/.

[25] The existing agreement between the IEUA and Watermaster for financing the construction of recharge facilities is located here: http://www.ieua.org/referenced-documents/.

The IEUA, Watermaster, the CBWCD, and the SBCFCD are updating their existing "Four-Party" agreement[26] that was used to implement the 2001 RMP and to operate and maintain the facilities. The revised agreement will be completed in the fall of 2016. The Four-Party agreement spawned the Groundwater Recharge Coordinating Committee (GRCC), which meets quarterly and as required to plan recharge operations and maintenance, to develop annual budgets, and to develop solutions to problems as they occur. The GRCC has been in existence since the implementation of the 2001 RMP projects.

An agreement between the IEUA, Watermaster, and California Steel Industries (CSI) will be prepared and completed by the end of 2016 to enable the IEUA to construct the 2013 RMPU recharge improvements on CSI property.

3.3.10 (If Applicable) Plan Explains Why Individual Agency Participation in Various Isolated Efforts is Appropriate

No. Not applicable to the 2016 Chino Basin SWRP.

3.4 Quantitative Methods (Guidelines Section VI.C)

3.4.1 For All Analyses: Plan Includes an Integrated Metrics-Based Analysis to Demonstrate That the Plan's Proposed Storm Water and Dry Weather Capture Projects and Programs Will Satisfy the Plan's Identified Water Management Objectives and Multiple Benefits

Yes. The 2013 RMPU consists of nine projects that will reduce storm water and dry-weather runoff discharges through recharge in spreading basins. The projected increase in storm water recharge will average about 5,500 acre-ft/yr. These same improvements will increase recycled water recharge capacity by 7,100 acre-ft/yr. Imported SWP water demands will thus decrease by 12,600 acre-ft/yr (equal to the sum of 5,500 acre-ft/yr of storm water recharge plus 7,100 acre-ft/yr of recycled water recharge). The reduced delivery of imported SWP water supplies will subsequently reduce the greenhouse gas emissions created by transporting imported water to Basin water users.

New storm water recharge was estimated using a sophisticated numerical surface water modeling approach that estimates the discharge available for diversion at each potential recharge project; routes the discharge through the basin; operates the basins for flood control and water conservation; and estimates recharge, evaporation, and discharge from the facility. The recharge estimates are based on a daily precipitation time history for the 61-year period of 1950 through 2010 and on 2010 land use and drainage conditions. The model is calibrated using the

[26] The existing "Four Party" agreement between the IEUA, Watermaster, the CBWCD, and the SBCFCD is located here: http://www.ieua.org/referenced-documents/.

monitoring data developed by the IEUA and the USGS. The results of the modeling work are summarized in Section 8 of the 2013 RMPU report. [27, 28]

The projected increase in dry-weather runoff recharge is presently unknown and will be determined during the design of the facilities. The increase in dry-weather runoff will eliminate the discharge of all dry-weather runoff originating upstream of the recharge improvements and thus will reduce the pollutant loading to the downstream impaired water bodies (see Table 4 herein).

3.4.2 For Water Quality Project Analysis (Section VI.C.2.a): Plan Includes an Analysis of How Each Project and Program Complies with or Is Consistent with an applicable NPDES Permit. The Analysis Should Simulate the Proposed Watershed-Based Outcomes Using Modeling, Calculations, Pollutant Mass Balances, Water Volume Balances, and/or Other Methods of Analysis. Describes How Each Water Project or Program Will Contribute to the Preservation, Restoration, or Enhancement of Watershed Processes (as Described in Guidelines Section VI.C.2.a)

Yes. The 2013 RMPU projects are recharge projects whose primary function is to increase the sustainable yield of the Chino Basin. This new recharge provides quantifiable benefits to the groundwater basin and un-quantified benefits to surface water. The water quality benefits to groundwater are derived from the recharge of storm water with low TDS and low nitrate concentrations. This helps to reduce the TDS and nitrate concentration impacts from return flows from historical and on-going agricultural activities and dilutes the TDS and nitrate loading from the recharge of recycled water. The IEUA and Watermaster conduct monitoring for the recharge projects constructed in the 2001 RMP, and this monitoring will be expanded when the 2013 RMPU projects are implemented. Monitoring will include discharge, stage, groundwater level, and surface and ground water quality. The IEUA and Watermaster are currently updating/preparing an antidegradation analyses for the 2013 RMPU projects to project the TDS and nitrogen impacts to Chino Basin from current and proposed recharge projects and other basin management activities. This antidegradation analysis will be included in the CEQA document to be published in late 2016 for the 2013 RMPU. Historically, the IEUA has prepared antidegradation analyses and reported the results to the Watermaster and the Water Board. The IEUA prepares an antidegradation analysis about every five years coincident with permit renewal. The antidegradation analysis will use historical data and future projections to estimate the TDS and nitrogen impacts to groundwater from the recharge of storm water, dry-weather runoff, recycled water, and other sources of recharge, and provide impact attribution to each

[27] See Section 8 of 2013 Amendment to the 2010 Recharge Master Plan Update (2013 RMPU): http://www.ieua.org/referenced-documents/.

[28] See Appendix B, 2013 Chino Basin Model Update and Recalculation of Safe Yield Pursuant to the Peace Agreement, October 2015, WEI: http://www.cbwm.org/docs/engdocs/WEI%202013%20CBWM%20Recalculation%20Model%20Update/20151005_WEI_2013_CBWM_Recal_Model_Final_low.pdf

source of recharge. This information has and will be reported to the IEUA, Watermaster, the CBWCD, the SBCWD, and the Water Board.

The surface water quality impacts and benefits from recharge of dry-weather runoff from the 2013 RMPU project implementation will be developed and reported in the CEQA document to be published in late 2016 for the 2013 RMPU.

3.4.3 For Storm Water Capture and Use Project Analysis (Section VI.C.2.b): Plan Includes an Analysis of How Collectively the Projects and Programs in the Watershed Will Capture and Use the Proposed Amount of Storm Water and Dry Weather Runoff

Yes. New storm water recharge was estimated using a sophisticated numerical surface water modeling approach that estimates the discharge available for diversion at each potential recharge project; routes the discharge through the basin; operates the basins for flood control and water conservation; and estimates recharge, evaporation, and discharge from the facility. The recharge estimates are based on a daily precipitation time history for the 61-year period from 1950 through 2010 and on 2010 land use and drainage conditions. The results of the modeling work are summarized in Section 8 of the 2013 Recharge Master Plan Report. [29, 30]

Since the 2001 RMP projects were constructed, The IEUA has monitored their performance and prepares estimates of the amount of storm water recharged due to the 2001 RMP projects, and Watermaster subsequently allocates the storm water and dry-weather recharge attributable to the 2001 RMP projects to the municipal water agencies that are parties to the Chino Basin Judgment (the Community). The municipal water agencies then produce this water to meet their demands. Watermaster does this on an annual basis and includes this calculation in its annual assessment package. In this way, the new recharge is allocated out to the municipal water agencies that are parties to the Chino Basin Judgment (the Community) and subsequently produced. The basis for this allocation is the Chino Basin Judgment. Watermaster will allocate the new recharge from storm water and dry-weather runoff from the 2013 RMPU projects in an identical way. The projected increase in storm water recharge will average about 5,500 acre-ft/yr and the projected increase in recycled water recharge will average about 7,100 acre-ft/yr. The increase in dry-weather runoff capture and recharge is presently unknown and will be determined later this year when the bulk of the 2013 RMPU project final designs are completed. Demand for imported SWP water will decrease by, at a minimum, the combined amount of storm, dry-weather runoff, and recycled water recharge, and will equal 12,600 acre-ft/yr. When quantified through monitoring by the IEUA and Watermaster, the dry-weather runoff recharge will further reduce the demand for imported SWP water.

[29] See Section 5 and Appendix C of the 2010 RMPU, 2010, WEI, located here: http://52.32.17.3:7777/

[30] See Section 8 of 2013 RMPU, 2013, WEI, located here: http://www.ieua.org/referenced-documents/.

3.4.4 For Water Supply and Flood Management Project Analysis (Section VI.C.2.c): Plan Includes an Analysis of How Each Project and Program Will Maximize and/or Augment Water Supply

Yes. See discussion for 3.4.3.

3.4.5 For Environmental and Community Benefit Analysis (Section VI.C.2.d): Plan Includes a Narrative of How Each Project and Program Will Benefit the Environment and/or Community, with Some Type of Quantitative Measurement

Yes. See discussion for 3.4.2.

3.4.6 Data Management (Section VI.C.3): Plan Describes Data Collection and Management, Including: a) Mechanisms by Which Data Will Be Managed and Stored; b) How Data Will Be Assessed by Stakeholders and the Public; c) How Existing Water Quality and Water Quality Monitoring Will Be Assessed; d) Frequency at Which Data Will Be Updated; and e) How Data Gaps Will Be Identified

Yes. Data has been and will be managed as follows:

a. Mechanism by which data will be managed and stored:

   i. The IEUA and Watermaster conduct extensive surface water, groundwater, and ground level monitoring programs using conventional and satellite monitoring techniques, including:

      (1) groundwater level, production, and water monitoring throughout the Chino Basin, including specialized monitoring near all recharge facilities;

      (2) surface water discharge, diversion, and water quality monitoring throughout the Chino Basin with specialized monitoring at recharge facilities to accurately assess inflow, recharge, evaporation, and discharge from each facility, and to assess the impacts to downstream resources and the Santa Ana River

   ii. The IEUA stores the stage data collected at the recharge basins in its SCADA historian database. This stage data acquired at the recharge facilities and all other monitoring data is stored in a relational database managed by Watermaster, using the HydroDaVE^{sm} managed service platform (HDMS).

b. How data will be accessed by stakeholders and the public?

   i. The IEUA, Watermaster, the CBWCD, and the SBCFCD have complete access to all of the monitoring data maintained in the Watermaster's relational database through HDMS and, for some private wells, by request to the Watermaster. The IEUA, Watermaster and the SBCFCD have SCADA terminals in their offices that enable them real time monitoring of the recharge facilities.

c. How existing water quality and water quantity monitoring will be assessed?

i. The IEUA and Watermaster have joint reporting obligations to the Water Board pursuant to Water Board resolutions R8-2004-0001, R8-2007-0039, and R8-2009-0057. These resolutions require periodic reporting of ground and surface water data, ambient groundwater quality determinations, assimilative capacity determinations, antidegradation analyses, and direct comparisons of monitoring results to permit limits.

ii. Watermaster produces a comprehensive assessment of hydrologic conditions, including an extensive assessment of water quality, every two years in its State of the Basin reports.

iii. Watermaster conducts an annual assessment of the increase in groundwater recharge at each of the 2001 RMP projects and will do so for the recharge projects in the 2013 RMPU. Watermaster uses this information to adjust pumping rights for parties to the Chino Basin Judgment.

iv. Watermaster and the IEUA review the infiltration rates developed from monitoring data to program maintenance activities at each of the 2001 RMP projects and will do so for the recharge projects in the 2013 RMPU.

d. Frequency at which data will be updated

i. Groundwater level data is acquired at either a 15-minute or monthly interval. For wells near recharge basins, groundwater levels are measured at a 15-minute interval.

ii. Groundwater quality data is acquired at various time intervals ranging from monthly to every three years. For wells and lysimeters at and near recharge basins, the sampling rate ranges from every two weeks to every three months.

iii. Stage in recharge basins using sensors connected to the IEUA SCADA is measured continuously. Stage measurements from staff gage readings are acquired as necessary but no greater than weekly when water is present in the recharge basins.

iv. Surface discharge measurements are collected continuously for most stormwater diversions to recharge basins and all imported and recycled water conveyed to recharge basins with meters that are connected to the IEUA's SCADA system.

v. Surface water quality is collected when present in the recharge basins at various frequencies pursuant to permit and hydrologic conditions.

vi. Watermaster acquires ground and surface water data from: all the water agencies that utilize the Chino Basin, the Water Board and Department of Toxic Substances Control, the USGS and the ACOE, and NOAA. These data are updated quarterly.

e. How data gaps (for which additional monitoring is needed) will be identified?

i. The IEUA and Watermaster have developed their monitoring programs to meet the legal requirements of agreements, for regulatory compliance and to answer specific research question related to resource management. The data streams generated by

these programs are reviewed continuously to ensure that the data is accurate, complete, and responsive to the management goals

ii. Monitoring needs are periodically (not less than annually) evaluated, and monitoring programs are revised in response to evolving management programs, questions, and regulatory requirements.

3.5 Identification and Prioritization of Projects (Guidelines Section VI.D)

3.5.1 Plan Identifies Opportunities to Augment Local Water Supply through Groundwater Recharge or Storage for Beneficial Use of Storm Water and Dry Weather Runoff [Water Code Section 10562(d)(1)]

Yes. See discussion in 3.4.3.

3.5.2 Plan Identifies Opportunities for Source Control for Both Pollution and Dry Weather Runoff Volume, Onsite and Local Infiltration, and Use of Storm Water and Dry Weather Runoff [Water Code Section 10562(d)(2)]

Yes. The storm water and dry-weather runoff recharge projects will reduce the quantity of storm and dry-weather runoff that reaches the unlined parts of the four primary drainages that traverse the Chino Basin and the Santa Ana River, thereby reducing pollutant loads to those water bodies. The surface water quality benefits from the recharge of storm water and dry-weather runoff from the 2013 RMPU project implementation will be developed and reported in the CEQA documents for the 2013 RMPU to be published later in 2016.

The 2013 RMPU implementation includes a process to create a database of all known local storm water and dry-weather runoff management projects implemented through the MS4 permits in the Riverside and San Bernardino County parts of the Chino Basin. The project types, physical characteristics, and time histories of maintenance are being stored in the database for periodic review with the intent of incorporating them into surface water and groundwater models. The surface water model will be used to estimate the new storm water and dry-weather runoff recharge in the Chino Basin that is created by these projects. The groundwater model will be used to evaluate the groundwater basin response and net new recharge to the basin and to subsequently reset the basin safe yield. The water quality benefits to the Chino Basin and the Santa Ana River will be estimated every five years starting in 2020 when the Chino Basin Recharge Master Plan is updated and every five years thereafter.

3.5.3 Plan Identifies Projects That Reestablish Natural Water Drainage Treatment and Infiltrations Systems, or Mimic Natural System Functions to the Maximum Extent Feasible [Water Code Section 10562(d)(3)]

Yes. For new development and redevelopment, this will occur via the MS4 permits for Los Angeles, Riverside, and San Bernardino Counties for those parts of the Chino Basin Watershed.

The 2013 RMPU will establish a database of all the MS4 projects that have been constructed since 2011 and, as mentioned in 3.5.2 above, will assess their performance and benefits starting in 2020 when the Chino Basin Recharge Master Plan is updated and every five years thereafter.

The construction of new recharge basins and improvements at existing storm water management/recharge basins will increase storm water and dry-weather recharge and offset, in part, the increase in imperviousness in the watershed and the concrete channel lining that has occurred in the past.

The IEUA and Watermaster recharge permit issued by the Regional Board recognizes that soil aquifer treatment is occurring in storm, dry-weather runoff and recycled water recharge. The IEUA has done extensive monitoring of SAT performance at the recharge facilities constructed in the 2001 RMP. IEUA utilizes lysimeters and groundwater wells to assess the fate of total organic carbon and nitrogen and prepares quarterly and annual reports of its data and findings for submission to the Regional Board.

3.5.4 Plan Identifies Opportunities to Develop, Restore, or Enhance Habitat and Open Space through Storm Water and Dry Weather Runoff Management, Including Wetlands, riverside habitats, parkways, and parks [Water Code Section 10562(d)(4)]

Yes. The IEUA is working in a partnership with the other regional water agencies in the Santa Ana River Watershed, including the Eastern Municipal Water District, the Orange County Water District, the San Bernardino Valley Municipal Water District, and the Western Municipal Water District to develop the Upper Santa Ana River Habitat Conservation Plan (USARHCP). One of the goals of the USARHCP is identify key habitat areas and to create a mitigation bank to enable their protection and/or the creation of new habitat. This plan should be completed in July 2017.

3.5.5 Plan Identifies Opportunities to Use Existing Publicly Owned Lands and Easements, Including, but not Limited to, Parks, Public Open Space, Community Gardens, Farm and Agricultural Preserves, School Sites, and Governments Office Buildings and Complexes, to Capture, Clean, Store, and Used Storm Water and Dry Weather Runoff either Onsite or Offsite [Water Code Section 10562(d)(5), 10562(b)(8)]

Yes. With the exception of one project (CSI, Project ID 18a) all projects are located on CBWCD, IEUA, or SBCFCD properties. Please see Section 8 of the 2013 RMPU.[32]

[32] Please see Section 8 of the 2013 RMPU, located here: http://www.ieua.org/referenced-documents/.

3.6 Identification and Prioritization of Projects (Guidelines Section VI.D)

3.6.1 For New Developments and Redevelopments (if Applicable): Plan Identifies Design Criteria and Best Management Practices to Prevent Storm Water and Dry Weather Runoff Pollution and Increase Effective Storm Water and Dry Weather Runoff Management for New and Upgraded Infrastructure and Residential, Commercial, Industrial, and Public Development [Water Code Section 10562(d)(6)]

Yes. The land use control agencies in the Chino Basin Watershed area are subject to MS4 permits issued by the Los Angeles and Santa Ana Regional Water Quality Control Boards. The 2010 RMPU contains language that encourages the use of recharge as the means of compliance with these permits[33] through the allocation of the new recharge in the form of groundwater production rights in the basin. Section 5 of the 2013 RMPU[34] contains provisions that are being implemented by Watermaster to collect information on all local storm water and dry-weather runoff management and MS4 projects, store that information in a relational data base, and on a five year frequency, to use that information to calculate the new recharge created by these projects and allocate that recharge to the municipal water agencies with groundwater production rights in the basin.

3.6.2 Plan Uses Appropriate Quantitative Methods for Prioritization of Projects (This Should Be Accomplished by Using a Metrics-Based and Integrated Evaluation and Analysis of Multiple Benefits to Maximize Water Supply, Water Quality, Flood Management, Environmental, and Other Community Benefits within the Watershed) [Water Code Section 10562(b)(2)]

Yes. See Sections 6, 7, and 8 in the 2013 RMPU.[35] Section 6 of the 2013 RMPU includes a comprehensive list of all the storm water and dry-weather runoff recharge projects in the Chino Basin, as identified by the IEUA, Watermaster, the CBWCD, the SBCFCD, the cities, and the water districts. Section 7 of the 2013 RMPU describes the development and selection of the criteria used to screen the projects listed in Section 6. Section 8 describes the application of the criteria from Section 7 to the list of projects in Section 6 and the selection of the nine projects shown in Table 8-2c of Section 8, an updated version of which is included herein as Table 2.

[33] See Section 7 of the 2010 RMPU, located here: http://www.ieua.org/referenced-documents/.

[34] See Section 5 of the 2013 RMPU, located here: http://www.ieua.org/referenced-documents/.

[35] See Sections 6, 7, and 8 of the 2013 RMPU, located here: http://www.ieua.org/referenced-documents/.

3.6.3 *Overall:* Plan Prioritizes Projects and Programs Using a Metric-Driven Approach and a Geospatial Analysis of Multiple Benefits to Maximize Water Supply, Water Quality, Flood Management, Environmental, and Community Benefits Within the Watershed

Yes. See Section 3.4.1 and Section 3.6.2 immediately above.

3.6.4 *Multiple Benefits:* Each Project in Accordance with the Plan Contributes to at Least Two or More Main Benefits and the Maximum Number of Additional Benefits as Listed in Table 4 of the Guidelines (Benefits are not counted twice if they apply to more than one category)

Yes. Implementation of the 2013 RMPU provides three of the benefits listed in Table 4 of the 2015 Guidelines, as described below.

a. Water Quality. The RMPU projects will reduce storm water discharge to the Santa Ana River and the Prado Basin, thus reducing the pollutant loading from urban storm water. The 2013 RMPU projects will completely divert dry-weather runoff that is tributary to them, also reducing pollutant loading to the Santa Ana River and the Prado Basin. San Antonio/Chino Creek and Cucamonga/Mill Creek are listed on the 303 (d) list as impaired water bodies, as characterized in Table 4. The diversion improvements for the Montclair Basins and the basin expansion for the Ely and Turner Basins will reduce both the storm water and dry-weather runoff discharge to the Santa Ana River and Prado Basin.

b. Water Supply Reliability. Implementation of the 2013 RMPU will increase storm water recharge on average by 5,500 acre-ft/yr and increase recycled water recharge capacity by 7,100 acre-ft/yr. The increase in dry-weather runoff recharge is currently unknown and will be quantified in the design process for the 2013 RMPU that will be completed in late 2016. Thus implementation of the 2013 RMPU will increase local water supplies by at least 12,600 acre-ft/yr and reduce dependence on imported SWP water by a like amount. The increase in recharge capacity created by the implementation of the 2013 RMPU will increase the capacity of future conjunctive use programs, enabling the larger amount of imported water to be recharged in the basin when surplus imported supplies available. The decrease in demand for imported SWP water and greater capacity for conjunctive use provide benefits to the region and the State.

c. Environmental. Reducing the demand for imported SWP water will reduce greenhouse gas generation attributed to conveying SWP to the Chino Basin. This reduction in greenhouse gas generation is a benefit to the region, the state, and the world.

3.7 Implementation and Strategy and Schedule (Guidelines Section VI.E)

3.7.1 Plan Identifies Resources for Plan Implementation, Including: 1) Projection of Additional Funding Needs and Sources for Administration and Implementation Needs; and 2) Schedule for Arranging and Securing Plan Implementation Financing

1. Yes. Projection of additional funding needs and sources for administration and implementation needs, above and beyond the needs of the existing storm water management plans and/or integrated regional water management plans.

   IEUA is currently working with Watermaster to finalize the financing plan and agreement to construct the 2013 RMPU projects which is expected to be complete by the end of April 2016. The construction costs for projects that capture and recharge storm water and dry-weather runoff only will be paid for by Watermaster. The construction costs for projects that capture and recharge storm water, dry-weather runoff, and recycled water will be paid for as follows: fifty percent by Watermaster and fifty percent by the IEUA. The amount of construction costs to be financed for each project is equal to the construction cost less any grant funding received for the project. The IEUA will provide debt financing through the Chino Basin Regional Financing Authority for the project and will annually invoice Watermaster for its share of the construction cost. Watermaster, in turn, will assess the parties to the Judgment based on an agreed to formula among the Watermaster parties. This is the same method of cost allocation and construction financing that was successfully used by the IEUA and Watermaster in the implementation of the 2001 RMP.

2. Yes. Schedule for arranging and securing Plan implementation financing, including identification of phased Plan implementation.

   Table 3 lists the 2013 RMPU projects, implementation schedule, and cost projections in the absence of obtaining grants. Table 2 lists the cost of each 2013 RMPU project. Grant funding from Proposition 1 would reduce these costs. The schedule for arranging and securing Plan implementation financing is currently in preparation and will be available in late 2016.

3.7.2 Plan Projects and Programs Are Identified to Ensure the Effective Implementation of the Storm Water Resource Plan Pursuant to This Part and Achieve Multiple Benefits [Water Code Section 10562(d)(8)]

Yes. The projects selected for implementation (listed in Table 2) were exhaustively evaluated and vetted in a technically sound and transparent process. The boards of the IEUA and Watermaster have approved the 2013 RMPU and specifically these projects. Preliminary design reports, environmental investigations, and implementation agreements are being prepared for each of the projects listed in Table 2. The IEUA and the Watermaster monitor the recharge projects constructed from the 2001 RMP to estimate, among other things, storm water and dry-weather runoff recharge. Each of the new recharge projects in the 2013 RMPU will be

monitored to estimate storm water and dry-weather runoff recharge to ensure that the multiple benefits are quantified and realized.

3.7.3 The Plan Identifies the Development of Appropriate Decision Support Tools and the Data Necessary to Use the Decision Support Tools [Water Code Section 10562(d)(8)]

Yes. The decision support tools utilized by the IEUA and Watermaster include: an extensive relational database that stores climatic, surface water, and groundwater data, and sophisticated numerical models that are used to simulate daily storm water discharge, route the discharge through the Chino Basin Watershed area, and estimate the recharge performance of the recharge facilities. The monitoring data are used to evaluate the historical performance of the recharge facilities, assess the need for maintenance, assess groundwater response, and update and calibrate surface water and groundwater models. The surface and groundwater models are routinely updated, reviewed by the stakeholders, and used in periodic planning efforts, including recharge master plan updates.

3.7.4 Plan Describes Implementation Strategy, Including: a) Timeline for Submitting Plan into Existing Plans, as Applicable; b) Specific Actions by Which Plan Will Be Implemented; c) All Entities Responsible for Project Implementation; d) Description of Community Participation Strategy; e) Procedures to Track Status of Each Project; f) Timelines for All Active or Planned Projects; g) Procedures for Ongoing Review, Updates, and Adaptive Management of the Plan; and h) A Strategy and Timeline for Obtaining Necessary Federal, State, and Local Permits

Yes. See text below:

a. Timeline for submitting the SWRP into the existing Integrated Regional Water Management Plan (IRWMP).

   The IRWMP for the Santa Ana Watershed, OWOW 2.0, is administered by SAWPA. The IEUA is submitting the 2016 Chino Basin SWRP to the OWOW 2.0 steering committee for its review and subsequent recommendation to the SAWPA commission for their approval to include the 2013 RMPU into OWOW 2.0. The 2016 Chino Basin SWRP will be included into OWOW 2.0 in March 2016.

b. Implementation activities.

   Table 3 lists the status and schedule for the major milestones for implementation of the 2013 RMPU projects that are included in the 2016 Chino Basin SWRP. The IEUA is administering the contracts for all implementation activities. The RIPCom, IEUA Board and Watermaster Board meets monthly to review progress and budget and provide recommendations and direction regarding implementation.

c. Entities responsible for implementation.

   The entities responsible for implementation are listed below:

i. IEUA. The IEUA is responsible for coordinating and implementing the 2013 RMPU projects pursuant to an agreement with the CBWCD, Watermaster, and the SBCFCD. This agreement is currently being reviewed and may be revised in the near future. The IEUA also owns the RP3 basins. One of the 2013 RMPU projects involves increasing conservation storage at the RP3 facility for storm water and dry-weather runoff recharge. The IEUA will review and approve design plans for facilities constructed on their property and provide permits for construction and subsequent operations and maintenance of the project. The IEUA will conduct monitoring to enable estimating of the inflow and outflow hydrograph, storm water and dry-weather runoff recharge, and evaporation at each recharge facility. The IEUA will coordinate the operation and maintenance of all 2013 RMPU projects.

ii. The SBCFCD owns most of the property and facilities that will be used to construct storm water and dry-weather runoff recharge projects. The SBCFCD was involved in the development of the Plan and supports the 2013 RMPU projects. The SBCFCD will review and approve design plans for facilities constructed on their property and provide permits to the IEUA for construction and subsequent operations and maintenance of the projects.

iii. CBWCD. The CBWCD owns the Montclair Basins and one of the three Ely Basins. One of the 2013 RMPU projects involves the construction of a new inlet from San Antonio Creek to Montclair Basins 2 and 3. Another 2013 RMPU project involves the deepening of all three of the Ely basins to create more conservation storage. The CBWCD was involved in the development of and supports the 2013 RMPU projects. The CBWCD will review and approve design plans for facilities constructed on their property and provide permits to the IEUA for the construction and subsequent operations and maintenance of the projects.

iv. Watermaster. Watermaster was the co-lead in the development of the 2013 RMPU projects along with the IEUA, the CBWCD, and the SBCFCD.

Through the Judgment and the so-called Peace Agreements, Watermaster has the authority to manage all artificial recharge projects in the Chino Basin. Watermaster requires that all proposed recharge projects be subject to a material physical injury analysis and will only approve recharge projects that pose no potential material physical injury or where mitigation is proposed to prevent potential and/or actual material physical injury. Material physical injury will be evaluated in the CEQA process for each of the 2013 RMPU projects. Watermaster will conduct surface and ground water monitoring to evaluate the impacts of the new recharge created by the 2013 RMPU projects, to assess the increase in net recharge and safe yield, and to assess the water quality impacts.

d. Community participation strategy for Plan implementation.

RIPCom, Watermaster governance, CBWCD board, and IEUA board meetings are publically noticed and open to all. The community is invited to participate in all these meetings.

e. Procedure to track status of each element of the Plan.

The IEUA is responsible for coordinating the implementation of the 2013 RMPU. The IEUA prepares a monthly status report and reports on status at the monthly RIPCom meetings and at the Watermaster governance, CBWCD board, and IEUA board meetings.

f. Timeline for all active or planned project components and identification of the institutional structure that will ensure Plan implementation.

The timeline and status for the 2013 RMPU projects is listed in Table 3. The Four-Party Agreement was successfully used to implement the 2000 RMP. This agreement is being updated to incorporate the 2013 RMPU projects. The revised Four-Party Agreement should be completed and approved by late 2016.

g. Procedure for ongoing review, updates, and adaptive management of the Plan.

By agreement and Court Order, the IEUA and Watermaster will review and update the Chino Basin recharge master plan every five years starting in 2020. This periodic update also ensures the recharge master plan is adaptive. That said, the established GRCC and RIPCom meeting process ensures that the new recharge is accounted for and that recharge operations will be revised as necessary to ensure the maximum amount of recharge within the constraints of flood control.

h. General strategy and potential timeline for obtaining necessary federal, state, and local permits.

IEUA is working with SBVMWD and other partners (see Section 3.5.1) to develop the Upper Santa Ana River Habitat Conservation Plan (USARHCP). Upon completion of the USARHCP in late 2017, IEUA will be permitting with US Fish and Wildlife to operate and maintain its existing recharge facilities and planned recharge facilities in the 2013 RMPU. Construction permits from US Fish and Wildlife will be granted upon evaluation and completion of mitigation needs of the USARHCP. The mitigation bank will be completed in late 2018. IEUA's current US Army Corps of Engineers 404 permit expires in March 2017. IEUA is currently preparing an individual operation and maintenance 404 permit application that includes all existing and planned recharge facilities and should receive that permits by March 2017. Concurrent with the 404 permit application, IEUA is applying to update its 401 permit to include new recharge facilities.

3.7.5 Applicable IRWM Plan: The Plan Will Be Submitted, upon Development, to the Applicable Integrated Regional Water Management (IRWM) Group for Incorporation into the IRWM Plan [Water Code Section 10562(b)(7)]

Yes. The IRWMP for the Santa Ana Watersheds, OWOW 2.0, is administered by SAWPA. The IEUA is submitting the Chino Basin SWRP to the OWOW 2.0 steering committee for its review and subsequent recommendation to the SAWPA commission to include the 2013 RMPU into OWOW 2.0. The 2016 Chino Basin SWRP will be included in OWOW 2.0 in March 2016.

3.7.6 Plan Describes How Implementation Performance Measures Will be Tracked

Yes. The implementation Chino Basin SWRP will be tracked as follows:

a. Evaluation of the expected and actual outcomes of the Plan (i.e. water quality, water supply augmentation, other benefits).

   The IEUA will monitor each of the 2013 RMPU projects and the prior constructed 2001 RMP projects and, based on that monitoring, estimate the recharge performance for each storm and for dry-weather runoff and will subsequently aggregate these estimates for each month and year. This information will be subsequently reported to the Watermaster, CBWCD and the SBCFCE. These estimates will be continuously and critically reviewed to improve recharge performance and to achieve the recharge goals of the 2013 RMPU. This review will include the periodic update of the numerical surface water models used to plan and design the 2013 RMPU projects and to subsequently revise the long-term average recharge projections.

b. Quantification of the storm water management objectives, multiple benefits, and environmental outcomes.

   i. The IEUA and Watermaster will report the storm water and dry-weather runoff recharge and associated water quality as required by Water Board Resolutions R8-2004-0001, R8-2007-0039, and R8-2009-0057.

   ii. Watermaster will document the storm water and dry-weather runoff recharge, pollutants intercepted and quantified and provide this information to the public through RIPCom, the biennial State of the Basin report, and in its annual report to the SWRCB.

   iii. The IEUA and Watermaster will provide an annual accounting of the reduction in greenhouse gas generation due to the increase in availability of local supplies created by the implementation of the 2013 RMPU and the associated reduction in the use of imported SWP water.

c. The monitoring and information-management systems that will be used to gather performance data.

   See Section 3.4.6 above.

d. Mechanisms to adapt project operations and Plan implementation based on performance data collected.

   GRCC meetings are held at least quarterly and more often if needed. The members of the GRCC include the IEUA, Watermaster, the CBWCD, and the SBCFCD. The GRCC produced an Operating Procedure Manual to precisely define the operational parameters of each basin, contact lists, etc. The GRCC critically reviews the recharge performance of each recharge basin and ancillary facilities and updates operations and maintenance to improve recharge performance and reduce cost.

e. Mechanisms to share performance data with stakeholders.

The storm water and dry-weather runoff recharge is reported to RIPCom, the Watermaster governance committees and board, and the IEUA, CBWCD, and SBCFCD boards on a monthly basis, and is available on the IEUA and Watermaster websites.

3.8 Education, Outreach, Public Participation (Guidelines Section VI.F)

3.8.1 Outreach and Scoping: Community Participation Is Provided for in Plan Implementation [Water Code Section 10562(b)(4)]

Yes. Extensive public outreach was provided for in the development and scoping of the Chino Basin SWRP. The Watermaster's ftp[36] site contains agendas, presentation materials, and sign-in sheets for the 67 recharge master plan steering committee meetings that were held during 2013 RMPU development. In addition to the steering committee meetings, regular progress reports were included at IEUA, Watermaster, CBWCD, and SBCFCD board meetings. Public outreach and scoping involvement continues through the monthly Recharge Investigation and Projects Committee (RIPCom) meetings[37] and monthly updates at IEUA, Watermaster, CBWCD, and SBCFCD board meetings. All meetings are noticed. Monitoring data and performance of the projects after construction are presented to the public at IEUA, Watermaster, CBWCD, and SBCFCD board meetings.

Inclusion of the 2016 Chino Basin SWRP in the OWOW 2.0 has extended community participation to the entire Santa Ana River Watershed.

3.8.2 Plan Describes Public Education and Public Participation Opportunities to Engage the Public when Considering Major Technical and Policy Issues Related to the Development and Implementation

Yes. See 3.8.1 immediately above.

3.8.3 Plan Describes Mechanisms, Processes, and Milestones That Have Been or Will Be Used to Facilitate Public Participation and Communication during Development and Implementation of the Plan

Yes. See 3.8.1 above.

[36] Please see the Watermaster ftp site related to the 2013 RMPU, located here: http://www.cbwm.org/FTP/CB%20RMPU%20Steering%20Committee/Meetings%20By%20Date/

[37] Ibid

3.8.4 Plan Describes Mechanisms to Engage Communities in Project Design and Implementation.

Yes. See 3.8.1 above.

3.8.5 Plan Identifies Specific Audiences Including Local Ratepayers, Developers, Locally Regulated Commercial and Industrial Stakeholders, Nonprofit Organizations, and the General Public

Yes. See 3.8.1 above.

3.8.6 Plan Describes Strategies to Engage Disadvantaged and Climate Vulnerable Communities within the Plan Boundaries and Ongoing Tracking of their Involvement in the Planning Process

Yes. Strategies to engage disadvantaged and climate communities are contained and are being implemented in the OWOW 2.0 of which the IEUA, Watermaster, the CBWCD and SBCFCD are participants.

3.8.7 Plan Describes Efforts to Identify and Address Environmental Injustice Needs and Issues within the Watershed

Yes. Efforts to identify and address environmental injustice needs and issues within the watershed are being implemented in the OWOW 2.0 of which the IEUA, Watermaster, the CBWCD and SBCFCD are participants.

3.8.8 Plan Includes a Schedule for Initial Public Engagement and Education

Yes. See 3.8.1 above.

3.9 Compliance with Standard Provisions (Section V of Guidelines

The standard provisions as specified in the SWRP 2015 SWRCB Guidelines are described below in the order listed in Section V of the Guidelines commencing on pages 16 and 18.

3.9.1 A. California Environmental Quality Act Compliance

The storm water and dry-weather runoff capture and recharge plans as proposed in the 2013 RMPU are in compliance or will be in compliance with CEQA prior to final design and construction. CEQA processes have been completed and adopted on all past construction and past and current operations of the facilities constructed pursuant to the 2001 RMP. The history of CEQA documentation is as follows:

a. Programmatic Environmental Impact Report for the Chino Basin Optimum Basin Management Program and Peace Agreement, certified by the IEUA in July 2000. SCH No. 2000041047[38].

b. Initial Study for the Implementation of Storm Water and Imported Water Recharge at 20 Recharge Basins in Chino Basin (implementing the 2001 RMP), This Initial Study tiers off of the OBMP PEIR and covers the construction and operation of all of the 2001 RMP projects that were selected for implementation.[39]

a. Supplemental Environmental Impact Report for IEUA Wastewater Projects and Peace II Projects, certified by IEUA in September 2010. SCH No. 2000041047[40]. This SEIR, in addition to covering IEUA wastewater projects, includes the nexus of the constructed 2001 RMP projects and future storm water and dry-weather runoff recharge projects to the salt and nutrient management plan for the Chino Basin, as included in the Basin Plan for the Santa Ana River Watershed (see Section 3.9.2 below).

b. The CEQA process for the 2013 RMPU is being conducted as described below for the proposed recharge projects listed in Table 2:

   i. CEQA process for the San Sevaine Basins project was completed and certified in January 2016.[41]

   ii. CEQA process for the Lower Day Creek Basin project is projected to be completed and certified in March 2016.

   iii. CEQA process for the remaining projects listed in Table 3 are projected to be completed and certified in November 2016.

3.9.2 B. Consistency with Water Quality Control Plans, Applicable Water Quality Control Policies, and Water Rights

The 2001 RMP projects were incorporated into the Santa Ana River Watershed Water Quality Control (Basin) Plan in Regional Board Resolution R8-2004-0001[42] as part of the salt and nutrient management plan for the Chino Basin. The Water Board subsequently included "completion" and "operation" of the storm water recharge projects into the recycling permits issued to the IEUA and Watermaster, which were issued in Water Board Resolutions R8-2005-0033, R8-2007-0039, and R8-2009-0057.[43] The TDS and nitrogen concentration limits in the

[38] This document is located here http://www.ieua.org/referenced-documents/.

[39] Ibid

[40] Ibid

[41] Ibid

[42] See Basin Plan, Chapter 5 – Maximum Benefit Implementation for Salt Management, Chino North and Cucamonga Management Zones, located here:
http://www.waterboards.ca.gov/santaana/water_issues/programs/basin_plan/index.shtml

[43] These permits require compliance with the maximum benefit demonstrations, including the construction and operation of the 2001 RMP facilities. These permits are located here:
http://www.waterboards.ca.gov/santaana/board_decisions/adopted_orders/orders/2005/05_033_wdr_ieua_cb

recycling permit are dependent on increasing storm water recharge pursuant to the OBMP and the 2001 RMP. The IEUA and Watermaster are fully compliant with the permit requirements.

Watermaster has acquired water rights to divert storm water for recharge in the Chino Basin. These permits, their priority dates, annual diversion limits, instantaneous diversion rates, and diversion periods are listed below and in Section 3.2.3. The IEUA has constructed and operated monitoring equipment that enables them to compute the amount of storm water and dry-weather runoff recharge and reports this information to Watermaster. Watermaster prepares an annual report and submits it each year to the SWRCB, describing the amount of storm water and dry-weather runoff that is diverted and recharged and the change in discharge and relative change in discharge for each tributary to the Santa Ana River due to these diversions. Watermaster is fully compliant with all of its water rights permit requirements.

Permit Number	Priority Date	Annual Diversion Limit (afy)	Instantaneous Diversion Rate (cfs)	Diversion Period
19895	6/10/1985	15,000	179	11/1 to 4/30
20753	4/9/1987	27,000	440	10/1 to 5/1
21225	11/4/2002	68,500	115,570	1/1 to 12/31
Total	--	110,500	116,189	--

3.9.3 C. Submission to Entities Overseeing Integrated Regional Water Management Plans and Other Local Plans

The IEUA is submitting this document and its appendix to the Santa Ana Watershed OWOW steering committee for their review and subsequent recommendation to the SAWPA commission that the Chino Basin SWRP be included in the OWOW 2.0 plan. The IEUA anticipates that the SAWPA Commission will approve the inclusion of the Chino Basin SWRP into the OWOW 2.0 in March 2016.

3.9.4 D. Consistency with Applicable Permits

The proposed 2013 RMPU is consistent with all existing diversion permits with exception that the diversion points for some of the proposed 2013 RMPU projects are not entirely consistent with the diversion points in the existing Watermaster permits for the diversion of storm water. Watermaster is currently preparing a change petition pursuant to Water Code Water Code § 1701 et. seq. for submittal to the SWRCB for their review and subsequent approval. The requested change is for point of diversion only.

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w_04152005.pdf, http://www.waterboards.ca.gov/santaana/board_decisions/adopted_orders/orders/2007/07_039_wdr_ieuacbw_cbrwgrp_06292007.pdf, and http://www.waterboards.ca.gov/santaana/board_decisions/adopted_orders/orders/2009/09_057_amending_07-0039_ieua_cbw_phase1_2.pdf, respectively

All other permits required for implementation of the 2013 RMPU will be identified in the CEQA and design processes.

3.9.5 E. Consistency with California Health and Safety Code – Pest and Mosquito Abatement

Watermaster and the IEUA work with the Cities and the San Bernardino County Department of Health, Mosquito and Vector control staff to monitor and control midge flies and mosquitos. The IEUA has a vector control program for each recharge basin that it operates. In addition, the IEUA is continuously conducting research to develop cost-efficient and environmentally sound measures for the control of pests and vectors at recharge facilities.

3.9.6 F. Modification of a River or Stream Channel

The modifications proposed in the 2013 RMPU include some in in-channel diversion structures that will be constructed in existing concrete-lined channels. Improvements within existing storm water retention basins will include excavation, hauling to waste, compaction of embankments, and the construction of various hydraulic structures, including gates of various types and pump stations. All of these improvements will be constructed pursuant to existing law and regulations. Environmental impacts, if any, will be identified in the CEQA process and fully mitigated.

3.9.7 G. Monitoring

The following monitoring activities are included in the existing storm water and dry-weather runoff recharge projects constructed for the 2001 RMP and are proposed for the 2013 RMPU. The monitoring described below is a subset of the comprehensive monitoring program included in OBMP Program Element 1 – Develop and Implement Comprehensive Monitoring Program, which has been in place since 1998.

3.9.7.1 Surface water monitoring.

Stage within each basin is measured through a water pressure sensor connected to the IEUA's SCADA system and/or is measured manually at staff gauges at a frequency that enables the IEUA to determine the amount of water captured in a spreading basin during a storm and subsequently to estimate infiltration rates and the amount of water recharged. Watermaster reviews this information to complete its annual reporting to the Watermaster Board and to the SWRCB. Watermaster staff also reviews the raw data collected by the IEUA to compute the inflow and outflow hydrographs and verifies the recharge estimates developed by the IEUA. Watermaster and IEUA are initiating a process to comply with the new monitoring and reporting requirements adopted by the SWRCB in January 2016

The water quality of storm water and dry-weather runoff is measured at key points in the drainage system and in some of the basins as required in Water Recycling Requirements, Order

No. R8-2007-0039 for the *Chino Basin Recycled Water Groundwater Recharge Program, Phase I and Phase II Projects – Inland Empire Utilities Agency and Chino Basin Watermaster.*[44]

3.9.7.2 Groundwater Monitoring.

Watermaster monitors groundwater throughout the Chino Basin to assess changes in the basin that result from the implementation of the OBMP and to comply with the Water Board requirements in R8-2004-0001 and in coordination with the IEUA for compliance with the monitoring requirements specified in R8-2007-0039 for the Chino Basin Recycled Water Groundwater Recharge Program, Phase I and Phase II Projects - Inland Empire Utilities Agency and Chino Basin Watermaster Order R8-2007-0039.

This information is used to assess the ambient TDS and nitrate concentrations in the Chino Basin (pursuant to R8-2004-0001) that result in part from the recharge of storm water, dry-weather runoff, and recycled water. Ambient TDS and nitrate concentrations are computed by the Water Board for their triennial Basin Plan updates.

3.9.7.3 Data Management.

All of the surface and ground water data collected in the Chino Basin Watershed is subject to a rigorous QA/QC process and uploaded to a relational database that is owned and managed by Watermaster. See Section 3.7.6.

[44] See monitoring provisions for the permit, located here: http://www.waterboards.ca.gov/santaana/board_decisions/adopted_orders/orders/2007/07_039_wdr_ieuacbw_cbrwgrp_06292007.pdf

Section 4 – References

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Wildermuth Environmental, 2015. Chino Basin Maximum Benefit Annual Report, prepared for the Chino Inland Empire Utilities Agency and Chino Basin Watermaster. http://www.cbwm.org/rep_engineering.htm

Wildermuth Environmental, 2015. 2014 State of the Basin Report, prepared for the Chino Basin Watermaster. http://www.cbwm.org/rep_engineering.htm

Wildermuth Environmental, 2015. 2013 Chino Basin Groundwater Model Update and Recalculation of Safe Yield Pursuant to the Peace Agreement, prepared for the Chino Basin Watermaster. http://www.ieua.org/referenced-documents/

Wildermuth Environmental, 2016. Annual Streamflow Monitoring Report for Water Rights Permit 21225, Fiscal 2014/15, prepared for the Chino Basin Watermaster. http://www.cbwm.org/rep_engineering.htm

Appendix A

Chino Basin SWRP Checklist and Self Certification Form

Appendix A: Checklist and Self-Certification

Checklist Instructions:

For <u>each element</u> listed below, review the applicable section in the Storm Water Resource Plan Guidelines and enter ALL of the following information.

A. **Mark the box if the Storm Water Resource Plan, or a functional equivalent Plan, meets the provision**
B. **In the provided space labeled <u>References</u>, enter:**

1. **Title of document(s) that contain the information;**
2. **The chapter/section, <u>and page number(s)</u> where the information is located within the document(s);**
3. **The entity(ies) that prepared the document(s);**
4. **The date the document(s) was prepared, and subsequent updates; and**
5. **Where each document can be accessed[1] (website address or attached).**

STORM WATER RESOURCE PLAN CHECKLIST AND SELF-CERTIFICATION		
Mandatory Required Elements per California Water Code are Shaded		
Y/N	**Plan Element**	**Water Code Section**

WATERSHED IDENTIFICATION (GUIDELINES SECTION VI.A)		
☑	Plan identifies watershed and subwatershed(s) for storm water resource planning.	10565(c) 10562(b)(1) 10565(c)
<u>References:</u> See Section 3.1.1		
☑	Plan is developed on a watershed basis, using boundaries as delineated by USGS, CalWater, USGS Hydrologic Unit designations, or an applicable integrated regional water management group, and includes a description and boundary map of each watershed and sub-watershed applicable to the Plan.	
<u>References:</u> See Section 3.1.2		

[1] All documents referenced must include a website address. If a document is not accessible to the public electronically, the document must be attached in the form of an electronic file (e.g. pdf or Word 2013) on a compact disk or other electronic transmittal tool.

WATERSHED IDENTIFICATION
(GUIDELINES SECTION VI.A)

☑	Plan includes an explanation of why the watershed(s) and sub-watershed(s) are appropriate for storm water management with a multiple-benefit watershed approach;

References:

See Section 3.1.1

☑	Plan describes the internal boundaries within the watershed (boundaries of municipalities; service areas of individual water, wastewater, and land use agencies, including those not involved in the Plan; groundwater basin boundaries, etc.; preferably provided in a geographic information system shape file);

References:

See Section 3.1.4

☑	Plan describes the water quality priorities within the watershed based on, at a minimum, applicable TMDLs and consideration of water body-pollutant combinations listed on the State's Clean Water Act Section 303(d) list of water quality limited segments (a.k.a impaired waters list);

References:

See Section 3.1.5

☑	Plan describes the general quality and identification of surface and ground water resources within the watershed (preferably provided in a geographic information system shape file);

References:

See Section 3.1.6

☑	Plan describes the local entity or entities that provide potable water supplies and the estimated volume of potable water provided by the water suppliers;

References:

See Section 3.1.7

☑	Plan includes map(s) showing location of native habitats, creeks, lakes, rivers, parks, and other natural or open space within the sub-watershed boundaries; and

References:

See Section 3.1.8

☑	Plan identifies (quantitative, if possible) the natural watershed processes that occur within the sub-watershed and a description of how those natural watershed processes have been disrupted within the sub-watershed (e.g., high levels of imperviousness convert the watershed processes of infiltration and interflow to surface runoff increasing runoff volumes; development commonly covers natural surfaces and often introduces non-native vegetation, preventing the natural supply of sediment from reaching receiving waters).

References:

See Section 3.1.9

WATER QUALITY COMPLIANCE
(GUIDELINES SECTION V)

☑	Plan identifies activities that generate or contribute to the pollution of storm water or dry weather runoff, or that impair the effective beneficial use of storm water or dry weather runoff.	10562(d)(7)

References:

See Section 3.2.1

☑	Plan describes how it is consistent with and assists in, compliance with total maximum daily load implementation plans and applicable national pollutant discharge elimination system permits.	10562(b)(5)

References:

See Section 3.2.2

☑	Plan identifies applicable permits and describes how it meets all applicable waste discharge permit requirements.	10562(b)(6)

References:

Section 3.2.3

ORGANIZATION, COORDINATION, COLLABORATION
(GUIDELINES SECTION VI.B)

☑	Local agencies and nongovernmental organizations were consulted in Plan development.	10565(a)

References:

See Section 3.3.1

☑	Community participation was provided for in Plan development.	10562(b)(4)

References:

See Section 3.3.1

☑	Plan includes description of the existing integrated regional water management group(s) implementing an integrated regional water management plan.

References:

See Section 3.3.3

ORGANIZATION, COORDINATION, COLLABORATION
(GUIDELINES SECTION VI.B)

☑	Plan includes identification of and coordination with agencies and organizations (including, but not limited to public agencies, nonprofit organizations, and privately owned water utilities) that need to participate and implement their own authorities and mandates in order to address the storm water and dry weather runoff management objectives of the Plan for the targeted watershed.

References:

See Section 3.3.1

☐	Plan includes identification of nonprofit organizations working on storm water and dry weather resource planning or management in the watershed.

References:

See Section 3.3.5

☑	Plan includes identification and discussion of public engagement efforts and community participation in Plan development.

References:

See Section 3.3.1

☑	Plan includes identification of required decisions that must be made by local, state or federal regulatory agencies for Plan implementation and coordinated watershed-based or regional monitoring and visualization

References:

See Section 3.3.7

☑	Plan describes planning and coordination of existing local governmental agencies, including where necessary new or altered governance structures to support collaboration among two or more lead local agencies responsible for plan implementation.

References:

See Section 3.3.8

☑	Plan describes the relationship of the Plan to other existing planning documents, ordinances, and programs established by local agencies.

References:

See Section 3.3.9

☐	(If applicable)Plan explans why individual agency participation in various isolated efforts is appropriate.

References:

See Section 3.3.10

QUANTITATIVE METHODS
(GUIDELINES SECTION VI.C)

☑	**For all analyses:** Plan includes an integrated metrics-based analysis to demonstrate that the Plan's proposed storm water and dry weather capture projects and programs will satisfy the Plan's identified water management objectives and multiple benefits.

References:

See Section 3.4.1

☑	**For water quality project analysis (section VI.C.2.a)** Plan includes an analysis of how each project and program complies with or is consistent with an applicable NPDES permit. The analysis should simulate the proposed watershed-based outcomes using modeling, calculations, pollutant mass balances, water volume balances, and/or other methods of analysis. Describes how each project or program will contribute to the preservation, restoration, or enhancement of watershed processes (as described in Guidelines section VI.C.2.a)

References:

See Section 3.4.2

☑	**For storm water capture and use project analysis (section VI.C.2.b):** Plan includes an analysis of how collectively the projects and programs in the watershed will capture and use the proposed amount of storm water and dry weather runoff.

References:

See Section 3.4.3

☑	**For water supply and flood management project analysis (section VI.C.2.c):** Plan includes an analysis of how each project and program will maximize and/or augment water supply.

References:

See Section 3.4.3

☑	**For environmental and community benefit analysis (section VI.C.2.d):** Plan includes a narrative of how each project and program will benefit the environment and/or community, with some type of quantitative measurement.

References:

See Section 3.4.2

☑	**Data management (section VI.C.3):** Plan describes data collection and management, including: a) mechanisms by which data will be managed and stored; b) how data will be accessed by stakeholders and the public; c) how existing water quality and water quality monitoring will be assessed; d) frequency at which data will be updated; and e) how data gaps will be identified.

References:

See Section 3.4.6

IDENTIFICATION AND PRIORITIZATION OF PROJECTS
(GUIDELINES SECTION VI.D)

☑	Plan identifies opportunities to augment local water supply through groundwater recharge or storage for beneficial use of storm water and dry weather runoff.	10562(d)(1)

References:

Section 3.4.3

☑	Plan identifies opportunities for source control for both pollution and dry weather runoff volume, onsite and local infiltration, and use of storm water and dry weather runoff.	10562(d)(2)

References:

Section 3.5.2

☑	Plan identifies projects that reestablish natural water drainage treatment and infiltration systems, or mimic natural system functions to the maximum extent feasible.	10562(d)(3)

References:

See Section 3.5.3

☑	Plan identifies opportunities to develop, restore, or enhance habitat and open space through storm water and dry weather runoff management, including wetlands, riverside habitats, parkways, and parks.	10562(d)(4)

References:

See Section 3.5.4

☑	Plan identifies opportunities to use existing publicly owned lands and easements, including, but not limited to, parks, public open space, community gardens, farm and agricultural preserves, school sites, and government office buildings and complexes, to capture, clean, store, and use storm water and dry weather runoff either onsite or offsite.	10562(d)(5), 10562(b)(8)

References:

See Section 3.5.5

IDENTIFICATION AND PRIORITIZATION OF PROJECTS
(GUIDELINES SECTION VI.D)

☑	For new development and redevelopments (if applicable): Plan identifies design criteria and best management practices to prevent storm water and dry weather runoff pollution and increase effective storm water and dry weather runoff management for new and upgraded infrastructure and residential, commercial, industrial, and public development.	10562(d)(6)

References:

See Section 3.6.1

☑	Plan uses appropriate quantitative methods for prioritization of projects. (This should be accomplished by using a metrics-based and integrated evaluation and analysis of multiple benefits to maximize water supply, water quality, flood management, environmental, and other community benefits within the watershed.)	10562(b)(2)

References:

See Section 3.6.2

☑	*Overall:* Plan prioritizes projects and programs using a metric-driven approach and a geospatial analysis of multiple benefits to maximize water supply, water quality, flood management, environmental, and community benefits within the watershed.

References:

See Section 3.4.1 and Section 3.6.2

☑	*Multiple benefits:* Each project in accordance with the Plan contributes to at least two or more **Main Benefits** and the maximum number of **Additional Benefits** as listed in Table 4 of the Guidelines. (Benefits are not counted twice if they apply to more than one category.)

References:

See Section 3.6.4

IMPLEMENTATION STRATEGY AND SCHEDULE
(GUIDELINES SECTION VI.E)

☑	Plan identifies resources for Plan implementation, including: 1) projection of additional funding needs and sources for administration and implementation needs; and 2) schedule for arranging and securing Plan implementation financing.	

References:

See Section 3.7.1

☑	Plan projects and programs are identified to ensure the effective implementation of the storm water resource plan pursuant to this part and achieve multiple benefits.	10562(d)(8)

References:

See Section 3.7.2

☑	The Plan identifies the development of appropriate decision support tools and the data necessary to use the decision support tools.	10562(d)(8)

References:

See Section 3.7.3

☑	Plan describes implementation strategy, including: a) Timeline for submitting Plan into existing plans, as applicable; b) Specific actions by which Plan will be implemented; c) All entities responsible for project implementation; d) Description of community participation strategy; e) Procedures to track status of each project; f) Timelines for all active or planned projects; g) Procedures for ongoing review, updates, and adaptive management of the Plan; and h) A strategy and timeline for obtaining necessary federal, state, and local permits.	

References:

See Section 3.7.4

☑	Applicable IRWM plan: The Plan will be submitted, upon development, to the applicable integrated regional water management (IRWM) group for incorporation into the IRWM plan.	10562(b)(7)

References:

See Section 3.7.5

IMPLEMENTATION STRATEGY AND SCHEDULE
(GUIDELINES SECTION VI.E)

☑	Plan describes how implementation performance measures will be tracked.

References:

See Section 3.7.6

EDUCATION, OUTREACH, PUBLIC PARTICIPATION
(GUIDELINES SECTION VI.F)

☑	Outreach and Scoping: 10562(b)(4) Community participation is provided for in Plan implementation.

References:

See Section 3.8.1

☑	Plan describes public education and public participation opportunities to engage the public when considering major technical and policy issues related to the development and implementation.

References:

See Section 3.8.1

☑	Plan describes mechanisms, processes, and milestones that have been or will be used to facilitate public participation and communication during development and implementation of the Plan.

References:

See Section 3.8.1

☑	Plan describes mechanisms to engage communities in project design and implementation.

References:

See Section 3.8.1

☑	Plan identifies specific audiences including local ratepayers, developers, locally regulated commercial and industrial stakeholders, nonprofit organizations, and the general public.

References:

See Section 3.8.1

EDUCATION, OUTREACH, PUBLIC PARTICIPATION
(GUIDELINES SECTION VI.F)

☑	Plan describes strategies to engage disadvantaged and climate vulnerable communities within the Plan boundaries and ongoing tracking of their involvement in the planning process.

References:

See Section 3.8.6

☐	Plan describes efforts to identify and address environmental injustice needs and issues within the watershed.

References:

See Section 3.8.7

☑	Plan includes a schedule for initial public engagement and education.

References:

See Section 3.8.1

DECLARATION AND SIGNATURE

I declare under penalty of perjury that all information provided is true and correct to the best of my knowledge and belief.

Signature	Title	Date
Signature	Title	Date

Table 1
OBMP Goals, Impediments, Action Items, Implications, and Implementation Elements

Impediments to the Goal	Action Items to Implement Goal	Implications	Program Elements to be Implemented in the OBMP
Goal 1 -- Enhance Basin Water Supplies			
1 Unless certain actions are taken the safe yield of the basin will be reduced.			
1a Basin yield is lost due to groundwater outflow from the southern part of basin.	Maintain or increase groundwater production in southern part of the basin; treat and serve contaminated groundwater from southern third of the basin.	This action will maintain and possibly increase safe yield; reducing production to levels below 1965-74 will result in a loss of safe yield. This action will result in improved water quality in the Santa Ana River.	3 Develop and implement a comprehensive water supply plan for existing and future impaired areas
	Locate new recharge facilities in the upper half of the basin.	Recharge in the upper half of the basin ensures that the water recharged can be recovered and put to beneficial use; recharge in the lower half of the basin may be lost to the Santa Ana River.	2 Develop and implement a comprehensive recharge program.
	Locate new recharge facilities in the lower half of the basin when recovery of recharged water can be ensured.	This action will result in localized water quality and supply improvements in the lower half of the basin.	2 Develop and implement a comprehensive recharge program.
	Develop and implement a comprehensive basin-wide ground level, groundwater level, quality, and production monitoring program.	This action will provide Watermaster with the information necessary to determine outflow to the river, actual production, and to design groundwater treatment facilities. This action is necessary to maintain yield.	1 Develop and implement a comprehensive basin-wide ground level, groundwater level, quality, and production monitoring program.
1b The basin is not using as much high quality stormwater as it could for recharge.	Develop and implement a comprehensive plan of stormwater recharge.	This action will result in a list of feasible recharge projects that when implemented will maintain/increase basin yield, improve surface water and groundwater quality, and reduce the cost of flood control projects.	2 Develop and implement a comprehensive recharge program.
	Develop a comprehensive stormwater flow and quality monitoring program in partnership with other agencies charged with flow and quality monitoring.	This action will provide data that can be used to quantify the increase in yield through stormwater recharge and will provide water quality benefits. This action will quantify offset credits for recycled water recharge.	2 Develop and implement a comprehensive recharge program.
	Develop new stormwater recharge projects at existing and future flood control facilities.	This action will maintain/increase yield and improve groundwater quality.	2 Develop and implement a comprehensive recharge program.

Source: 1997 OBMP Phase I Report
20160301 Table 1 aka OBMP Table 3-8_v2.xlsx -- Table 1 SWRP
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Table 1

OBMP Goals, Impediments, Action Items, Implications, and Implementation Elements

Impediments to the Goal	Action Items to Implement Goal	Implications	Program Elements to be Implemented in the OBMP
	Maximize recharge capacity at existing recharge facilities through improved maintenance.	This action will maintain/increase yield and improve groundwater quality.	2 Develop and implement a comprehensive recharge program.
1c The current manner Watermaster manages cyclic and local storage accounts will cause overdraft.	Develop methods to account for losses from cyclic and local storage accounts; and set limits on storage.	This action will help maintain the safe yield and ensure that basin water is put to maximum beneficial use.	8 Develop and implement a storage management program.
2 Unless certain actions are taken, groundwater levels in Management Zone (MZ) 1 will continue to decline adding to the potential for additional subsidence and fissures, lost production capability, and water quality problems.	Develop comprehensive ground level, groundwater level and quality monitoring program in MZ 1.	This action will provide engineering and scientific information that can be used to accurately assess groundwater conditions and manage MZ 1.	4 Develop comprehensive ground level, groundwater level and quality monitoring program in MZ 1.
	Develop groundwater management program for MZ 1consisting of:	This action will result in a plan that will reduce potential future subsidence and occurrence of ground fissures, maintain minimum levels of production, and improve water quality.	4 Develop and implement a groundwater management program for MZ 1.
	Increase recharge of stormwater and supplemental water in MZ 1.	This action will help maintain or increase groundwater levels and reduce the potential for subsidence and ground fissures.	
	Manage groundwater production in MZ 1 to a sustainable level to minimize subsidence.	This action will help maintain or increase groundwater levels and reduce the potential for subsidence and ground fissures.	
	Increase direct use of supplemental water in MZ 1(including in lieu deliveries).	This action will help maintain or increase groundwater levels and reduce the potential for subsidence and ground fissures.	
3 Because there is limited assimilative capacity for total dissolved solids (TDS) and nitrogen in the basin, there are economic limitations on the recharge of recycled water.	Create new assimilative capacity through the development of offset programs and through other mitigation programs.	This action will result in increased use of reclaimed water and will decrease the dependence on expensive and less reliable imported sources.	5 Develop and Implement Regional Supplemental Water Master Plan
4 Because future demands are increasing and there are limitations on basin and traditional supplemental supplies, new sources of supplemental water need to be developed.	Maximize the direct use of recycled water.	This action will reduce the dependence on expensive and less reliable imported sources.	5 Develop and Implement Regional Supplemental Water Master Plan
	Develop new sources of supplemental water from the Bunker Hill Basin, the Santa Ana River and other outside basin sources.	This action will ensure that there will be adequate supplies of high quality water to meet future demands.	5 Develop and Implement Regional Supplemental Water Master Plan

Table 1
OBMP Goals, Impediments, Action Items, Implications, and Implementation Elements

Impediments to the Goal	Action Items to Implement Goal	Implications	Program Elements to be Implemented in the OBMP
Goal 2 -- Protect and Enhance Water Quality			
1 Watermaster lacks comprehensive, long term information on groundwater quality.	Develop and implement a comprehensive groundwater quality monitoring program.	This action will provide a comprehensive assessment of current and future water quality problems and solutions in the basin. This action will contribute to the the least-cost and most expedient plans to protect, enhance and use groundwater to the maximum extent possible.	1 Develop and implement a comprehensive basin-wide ground level, groundwater level, quality, and production monitoring program.
2 Watermaster does not have sufficient information to determine whether point and non-point sources are being adequately addressed in the basin.			
2a RWQCB may not have adequate resources to address all the water quality problems within its jurisdiction in the Chino Basin.	Coordinate with regulatory agencies to share monitoring and other information to detect and define water quality problems.	This action will result in more efficient use of Watermaster, producer and regulatory agency resources.	6 Develop a cooperative program with the regulatory agencies where Watermaster and producer resources can be used to improve regulatory agency effectiveness.
	Take coordinated action regarding Watermaster priorities of mutual interest.	This action will improve timeliness and success in preventing water quality degradation and in cleaning up existing degradation; may include Watermaster entering litigation to assist in clean up.	6 Develop cooperative programs where Watermaster and producer resources can be used to improve basin management.
	Participate in projects of mutual interest including the RWQCB Watershed management efforts in the Chino Basin	This action will result in more efficient use of resources of Watermaster, producers, and dischargers.	6 Develop and implement programs to address problems as identified and determined . beneficial
2b A comprehensive approach to addressing point and non-point source problems does not exist.	Develop and implement programs to address problems posed by specific contaminants such as TDS, nitrate, methyl ter -butyl ether, perchlorate and others.	This action will improve timeliness and success in preventing water quality degradation and in cleaning up existing degradation.	6 Develop and implement programs to address problems posed by specific contaminants.
2c There is ongoing salt and nitrogen loading from dairies. Source water quality available to the dairies is often too degraded to be discharged.	Export manure.	This action will reduce TDS and nitrogen degradation of surface water and groundwater at less cost than treatment of receiving waters.	7 Develop and implement programs that result in maximum animal waste export
	Treat dairy sewage and eliminate discharge to groundwater, or export dairy sewage.	This action will reduce TDS and nitrogen degradation of surface water and groundwater at less cost than treatment of receiving waters.	7 Develop and implement programs that result in maximum animal waste export

Table 1

OBMP Goals, Impediments, Action Items, Implications, and Implementation Elements

Impediments to the Goal	Action Items to Implement Goal	Implications	Program Elements to be Implemented in the OBMP
3 There is ongoing and legacy contamination in vadose zone with TDS and nitrogen from historic dairy and other irrigated agricultural practices.	Develop regional and local groundwater treatment systems to treat groundwater for direct beneficial use.	This action will improve groundwater quality, maintain/increase safe yield, and maximize beneficial use of basin water.	3 Develop and implement a comprehensive water supply plan for existing and future impaired areas
4 Poor ambient groundwater quality limits direct use of groundwater and can lead to loss of basin yield.	Develop programs (regional treatment, incentives, etc.) to pump and treat degraded groundwater and to put the treated water to direct use.	This action will speed up the cleanup of degraded water, stop the spreading of degradation and maintain/increase safe yield.	3 Develop and implement a comprehensive water supply plan for existing and future impaired areas
5 The basin is not using as much high quality stormwater as it could for recharge.	Develop and implement a comprehensive plan of recharge for stormwater.	This action will result in a list of feasible recharge projects that when implemented will maintain/increase basin yield, improve surface water and groundwater quality, and reduce the cost of flood control projects.	2 Develop and implement a comprehensive recharge program.
	Develop a comprehensive stormwater flow and quality monitoring program in partnership with other agencies charged with flow and quality monitoring.	This action will provide data that can be used to quantify the increase in yield through stormwater recharge and will provide water quality benefits. This action will quantify offset credits for recycled water recharge.	1 Develop a comprehensive stormwater flow and quality monitoring program in partnership with other agencies charged with flow and quality monitoring.
	Develop new stormwater recharge projects at existing and future flood control facilities.	This action will maintain/increase yield and improve groundwater quality.	2 Develop and implement a comprehensive recharge program.
	Maximize recharge capacity at existing recharge facilities through improved maintenance.	This action will maintain/increase yield and improve groundwater quality.	2 Develop and implement a comprehensive recharge program.
6 The basin is hydrologically closed.			
6a The southern part of the basin will accumulate TDS and nitrogen if yield is maintained or increased.	Periodically assess the salt balance of the basin.	This action will provide one of a group of metrics from which the success of the water quality component of the OBMP will be assessed. A declining salt balance will indicate an improvement in water quality.	1 Develop and implement a comprehensive basin-wide ground level, groundwater level, quality, and production monitoring program. 6 Develop new tools to compute salt balance
6b There is a lack of cost-effective groundwater salt export facilities.	Develop new TDS export facilities and/or find means of using Non Reclaimable Waste Line and the Santa Ana Regional Interceptor with less cost.	This action will result in TDS and and nitrogen removal, improvement in groundwater quality, will maintain/increase basin yield, and improve Santa Ana River quality.	3 Develop and implement a comprehensive water supply plan for existing and future impaired areas

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Table 1

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Impediments to the Goal	Action Items to Implement Goal	Implications	Program Elements to be Implemented in the OBMP
	Establish financial incentives to ensure that existing groundwater is pumped and that high quality water is used to replenish the basin.	This action will result in more TDS and and nitrogen removal, improvement in groundwater quality, will maintain/increase basin yield, and improve Santa Ana River quality.	3 Develop and implement a comprehensive water supply plan for existing and future impaired areas
6c Existing production patterns in the basin cause salt and nitrate to accumulate in the southern end of the basin.	Increase recharge without an increase in production to cause an increase in rising water	This action will result in a gradual improvement in groundwater quality in the southern part of the basin and an increase in TDS and nitrogen degradation in the Santa Ana River.	3 Develop and implement a comprehensive water supply plan for existing and future impaired areas
7 Pesticide and chemical use, and petroleum product disposal habits	Public education.	Members of the public will be encouraged to become individually involved in protecting both surface and groundwater quality	6 Develop and implement programs to address problems posed by specific contaminants.
Goal 3 -- Enhance Management of the Basin			
1 The way Watermaster manages cyclic and local storage accounts will cause overdraft.	Develop methods to account for losses from cyclic and local storage accounts; set limits on storage.	This action will help maintain the safe yield and ensure that basin water is put to maximum beneficial use.	8 Develop and implement a storage management program.
2 Existing production patterns are not balanced, cause losses, can cause local subsidence, and water quality problems.	Develop and implement a comprehensive basin-wide ground level, groundwater level, quality, and production monitoring program.	This action will provide information that can be used to understand the groundwater flow system and quality conditions.	1 Develop and implement a comprehensive basin-wide ground level, groundwater level, quality, and production monitoring program.
	Develop new production patterns that maximize yield and beneficial use; and develop incentive programs and policies that encourage (or rules that enforce) new production patterns.	This action will maximize yield and beneficial use of basin water; improve basin water quality, and improve Santa Ana River quality.	3 Develop and implement a comprehensive water supply plan for existing and future impaired areas
	Develop programs (regional treatment, incentives, etc.) to pump and treat degraded groundwater and to put the treated water to direct use.	This action will maximize yield and beneficial use of basin water; improve basin water quality, and improve Santa Ana River quality.	3 Develop and implement a comprehensive water supply plan for existing and future impaired areas
3 About 500,000 to 1,000,000 acre-ft of storage in the Chino Basin cannot be used due to water quality and institutional issues.	Develop conjunctive use programs that take into account water quantity and quality	This action will result in lower water supply costs to basin producers.	9 Develop conjunctive use programs that take into account water quantity and quality
4 Poor ambient groundwater quality limits direct use of groundwater and can lead to loss of basin yield.	Develop programs (regional treatment, incentives, etc.) to pump and treat degraded groundwater and to put the treated water to direct use.	This action will speed up the cleanup of degraded water, stop the spreading of degradation and maintain/increase safe yield.	3 Develop and implement a comprehensive water supply plan for existing and future impaired areas

Table 1

OBMP Goals, Impediments, Action Items, Implications, and Implementation Elements

Impediments to the Goal	Action Items to Implement Goal	Implications	Program Elements to be Implemented in the OBMP
Goal 4 -- Equitably Finance the OBMP			
1 The equitable distribution of cost associated with the OBMP is not defined.	Identify an equitable approach to spread the cost of OBMP implementation either on a per acre-ft basis or some other equitable means.	This action will improve the likelihood that the OBMP will be implemented.	Develop and implement a financial plan to implement the OBMP
	Identify ways to recover value from utilizing basin assets including storage and rising water leaving the basin.	This action will lower the cost of the OBMP to producers and improve the likelihood that OBMP will be implemented.	Develop and implement a financial plan to implement the OBMP
2 Limited resources restrict potential water resources improvements of the OBMP.	Evaluate project and management components and rank components with equal consideration given to water quantity, water quality and cost.	This action will result in the optimum set of project and management components of the OBMP being implemented.	

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Table 2
2013 Recharge Master Plan Update
Yield Enhancement Projects

Project ID	Project	New Storm Water Recharge (acre-ft/yr)	New Recycled Water Recharge Capacity (acre-ft/yr)	Direct Construction Cost	Engineering and Admin Costs	Total Capital Cost
Recommended MZ3 Projects[1]						
18a	CSI Storm Water Basin	81	0	$ 291,000	$ 150,000	$ 440,000
	2013 Proposed RP3 Improvements[2]			$ 3,232,000	$ 481,000	$ 3,710,000
23a	2013 RMPU Proposed Wineville PS to Jurupa, Expanded Jurupa PS to RP3 Basin[2]	3,166	2,905	$ 15,957,000	$ 1,640,000	$ 17,600,000
27	Declez Basin	241	0	$ 3,696,000	$ 370,000	$ 4,070,000
Total MZ3		**3,489**	**2,905**	**$ 23,176,000**	**$ 2,641,000**	**$ 25,820,000**
Recommended MZ2 Projects[3]						
11	Victoria Basin[4]	43	120	$ 130,000	$ 19,500	$ 150,000
7	San Sevaine Basins[5]	642	4,100	$ 5,913,000	$ 550,000	$ 6,460,000
12	Lower Day Basin (2010 RMPU)	789	0	$ 2,158,000	$ 324,000	$ 2,480,000
14	Turner Basin	66	0	$ 739,200	$ 148,000	$ 890,000
15a	Ely Basin	221	0	$ 2,370,000	$ 829,000	$ 3,200,000
Total MZ2		**1,760**	**4,220**	**$ 11,310,200**	**$ 1,870,500**	**$ 13,180,000**
Recommended MZ1 Projects						
2	Montclair Basins	248	0	$ 1,251,900	$ 188,000	$ 1,440,000
Total MZ1		**248**	**0**	**$ 1,251,900**	**$ 188,000**	**$ 1,440,000**
Total Recommended Projects		**5,497**	**7,125**	**$ 35,738,100**	**$ 4,699,500**	**$ 40,440,000**

1. PID 25a (Sierra Basin) was deleted from the recommended project list.
2. PID23a (2013 RMPU Proposed Wineville PS to Jurupa, Expanded Jurupa PS to RP3 Basin, and 2013 Proposed RP3 Improvements) was updated to specify the parts of the project shared between IEUA and CBWM. Total Capital Cost of PID 23a is about $21,300,000.
3. PID 12 (Lower San Sevaine Basin) was deleted from recommended project list.
4. PID 11's total capital cost is about $150,000.
5. PID 7 (San Sevaine Basins) project cost was updated based on the recently completed preliminary design report. Total capital cost for this project is about $6,460,000.

Table 3
Recommended 2013 Recharge Master Plan Update Facilities and Implementation Status

Project ID	Recharge Projects	Property Owner	Key Project Improvements	Review Draft Preliminary Design	Finalize Preliminary Design	Review CEQA Documents	Adopt CEQA Document	Finalize Design	Contract Bidding	Contract Award	Finalize Contract
7	San Sevaine	SBCFCD	Construct pump station, pump from SS5 to SS1, SS2 and SS3	Completed	Completed	Completed	1/20/2016	3/18/2016	3/21/2016	5/18/2016	7/5/2017
12	Lower Day	SBCFCD	Construct new inlet, harden embankments and install gate on mid-level outlet.	Completed	Completed	Completed	3/16/2016	10/5/2016	10/6/2016	12/21/2016	1/5/2018
18a	CSI Storm Water Basin	California Steel Industries	New storage and recharge facility by deepening/removing 36,000 CY from existing retention basin	6/16/2016	8/17/2016	8/17/2016	11/16/2016	12/29/2017	Pending	Pending	12/31/2019
23a	Wineville, Jurupa, and RP3	SBCFCD	Create conservation storage in Wineville Basin and constructing pump stations to pump storm water and dry-weather runoff to adjacent conservation basins	6/16/2016	8/17/2016	8/17/2016	11/16/2016	12/29/2017	Pending	Pending	12/31/2019
27	Declez Basin	SBCFCD	Increasing conservation storage by raising berms and hardening embankments	6/16/2016	8/17/2016	8/17/2016	11/16/2016	12/29/2017	Pending	Pending	12/31/2019
11	Victoria Basin	SBCFCD	Improve the infiltration rate and by removing impermeable materials and abandoning mid-level outlet	6/16/2016	8/17/2016	8/17/2016	11/16/2016	12/29/2017	Pending	Pending	12/31/2019
14	Turner Basin	SBCFCD	Increase conservation storage and recharge by raising the spillway height	6/16/2016	8/17/2016	8/17/2016	11/16/2016	12/29/2017	Pending	Pending	12/31/2019
15a	Ely Basin	SBCFCD and CBWCD	Improve storage and recharge by expanding conservation storage (removing 470,000 CY)	6/16/2016	8/17/2016	8/17/2016	11/16/2016	12/29/2017	Pending	Pending	12/31/2019
2	Montclair Basins	CBWCD	Construction of new inlets expanding diversion capacity	6/16/2016	8/17/2016	8/17/2016	11/16/2016	12/29/2017	Pending	Pending	12/31/2019

Table 4
303 (d) List of Impaired Water Bodies and 2013 Recharge Master Plan Benefits

Water Body	Reach	Pollutant	Potential Sources	2013 RMPU Project Benefit on Impaired Water Bodies	
				Project	Benefit
San Antonio Creek	Confluence with Chino Creek to San Gabriel Mountains ridgeline	pH	Unknown	Montclair Basin Improvements	Reduced storm water discharge and eliminates dry-weather runoff from areas upstream of improvements
Chino Creek Reach 2	Start of channel lining to confluence with San Antonio Creek	Coliform bacteria pH	Unknown Unknown	Montclair Basin Improvements	Reduced storm water discharge and eliminates dry-weather runoff from areas upstream of improvements
Chino Creek Reach 1B	Mill Creek confluence to start of concrete channel	COD Nutrients Pathogens	Unknown Agriculture Agriculture, dairies, urban runoff and storm water		
Chino Creek 1A	Confluence with Santa Ana to confluence with Mill Creek	Nutrients Pathogens	Agriculture, dairies Agriculture, dairies, urban runoff and storm water		
Cucamonga Creek Reach 2	Debris Basin to San Gabriel Mountains ridgeline	pH	Unknown		
Cucamonga Creek Reach 1	Confluence with Mill Creek to debris dam	Cadmium Coliform-bacteria Copper Lead Zinc	Unknown Unknown Unknown Unknown Unknown	Ely and Turner Basin Improvements	Reduced storm water discharge and eliminates dry-weather runoff from areas upstream of improvements
Mill Creek	Confluence with Chino Creek to confluence with Cucamonga Creek	Nutrients Pathogens TSS	Agriculture, dairies Dairies Dairies		

Chino Basin DWR Bulletin 118 Boundary

Major SAWPA Member Agencies

Santa Ana River Watershed

San Bernardino Valley MWD

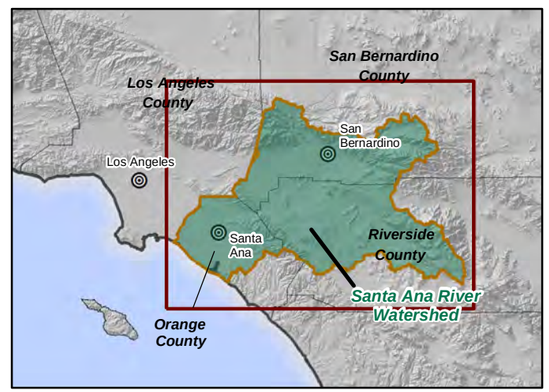
Inland Empire Utilities Agency

Santa Ana River

Western MWD

Eastern MWD

Orange County Water District



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Date: 3/2/2016

Name: Figure1_SAR_Watershed

0 10 20 Miles

0 10 20 30 Kilometers

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Location of the Chino Basin and the Santa Ana River Watershed

Figure 1

117°40'0"W

117°20'0"W

34°0'0"N

San Antonio Creek

Day Creek

San Sevaine Creek

Declez Channel

Cucamonga Creek

Chino Creek

Santa Ana River

210

15

10

60

71

Chino Basin DWR Bulletin 118 Boundary

Hydrologic Subareas (HSAs) used in Watershed Modeling

Inland Empire Utilities Agency Service Area Boundary

Flood Control/Conservation Basins

Time Periods in Which Channel Segments Were Lined

1950 - 1959

1960 - 1969

1970 - 1979

1980 - 1989

1990 - 1999

Geology

Water-Bearing Sediments

Quaternary Alluvium

Consolidated Bedrock

Undifferentiated Pre-Tertiary to Early Pleistocene Igneous, Metamorphic, and Sedimentary Rocks

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Date: 3/2/2016

Name: Figure2_Channel_Lining

0 1 2 3 4 5 Miles

0 2 4 6 8 Kilometers

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Time History of Channel Lining in the Chino Basin

Figure 2

Figure 3 Streambed Infiltration for the Santa Ana River Tributaries that Traverse the Chino Basin

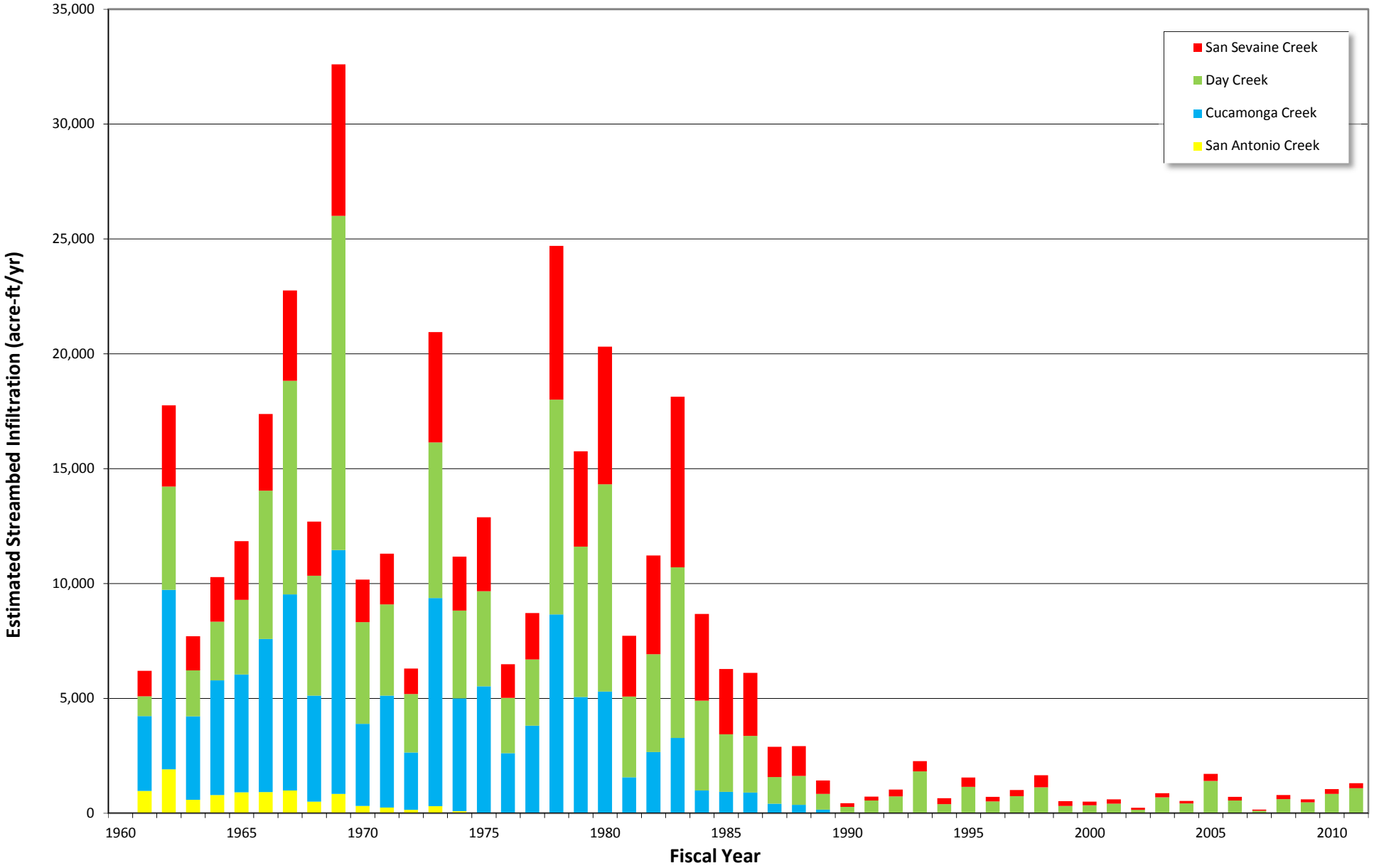

Figure3_SW_Recharge.xlsx
Revised 3/2/2016

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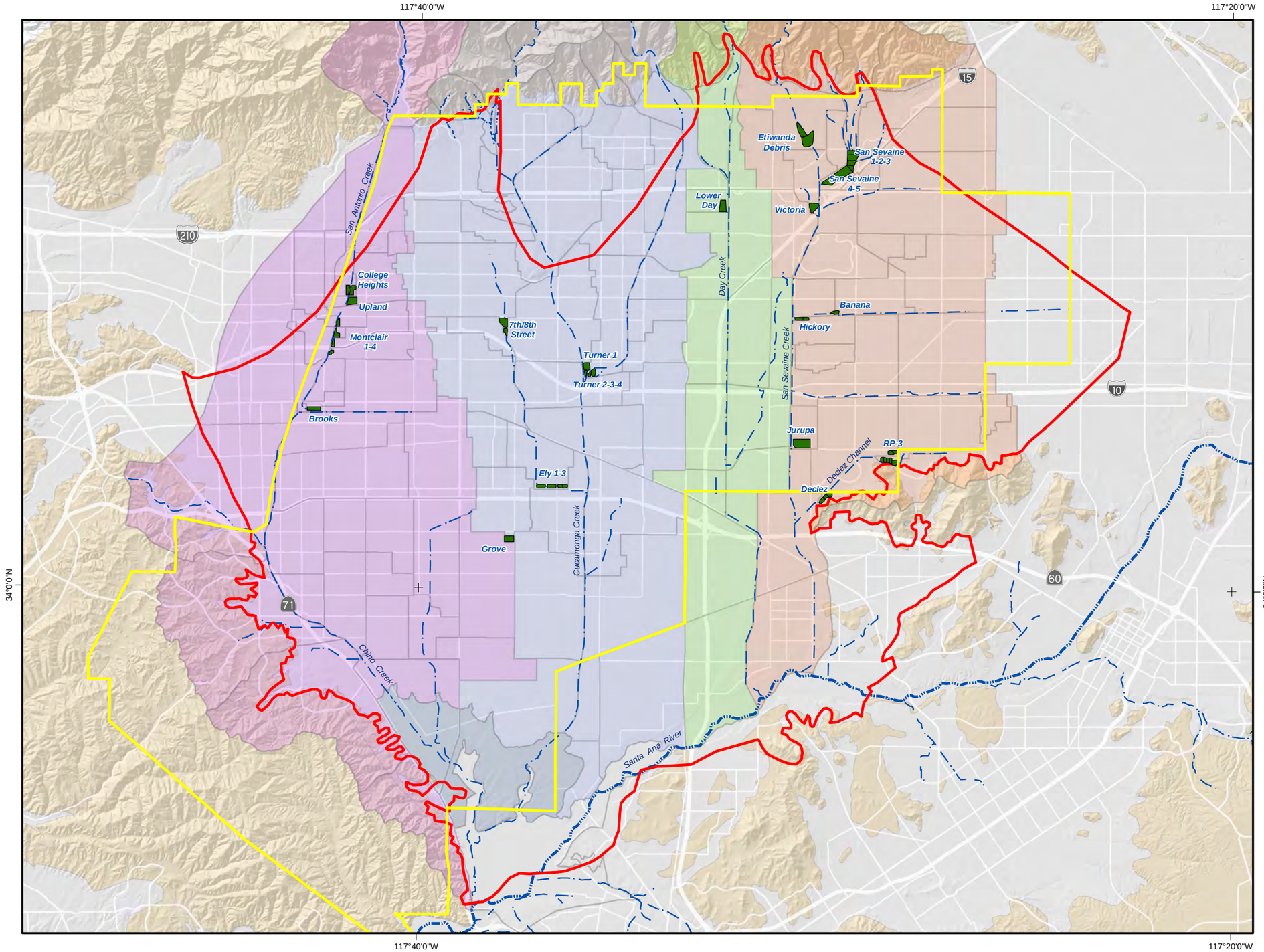

Chino Basin DWR Bulletin 118 Boundary

Hydrologic Subareas (HSAs) used in Watershed Modeling

Inland Empire Utilities Agency Service Area Boundary

Watersheds in Creek Systems in Chino Basin Tributary to Santa Ana River

- Chino/San Antonio Creek
- Cucamonga/Deer Creek
- Day Creek
- Etiwanda/San Sevaine Creek
- Prado Basin Headlands

Recharge Facilities in the Chino Basin

Projects Implemented as Part of OBMP and 2001 Recharge Master Plan

Geology

Water-Bearing Sediments

Quaternary Alluvium

Consolidated Bedrock

Undifferentiated Pre-Tertiary to Early Pleistocene Igneous, Metamorphic, and Sedimentary Rocks

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Date: 3/2/2016

Name: Figure4_CBFIP_recharge

0 1 2 3 4 5 Miles

0 2 4 6 8 Kilometers

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Recharge Improvements in the Chino Basin Since Implementation of the OBMP and the 2001 Recharge Master Plan

Figure 4

Figure 5
Increase in Storm Water and Dry-Weather Runoff Recharge Due to Recharge Improvements in the Chino Basin Since Implementation of the OBMP and the 2001 Recharge Master Plan

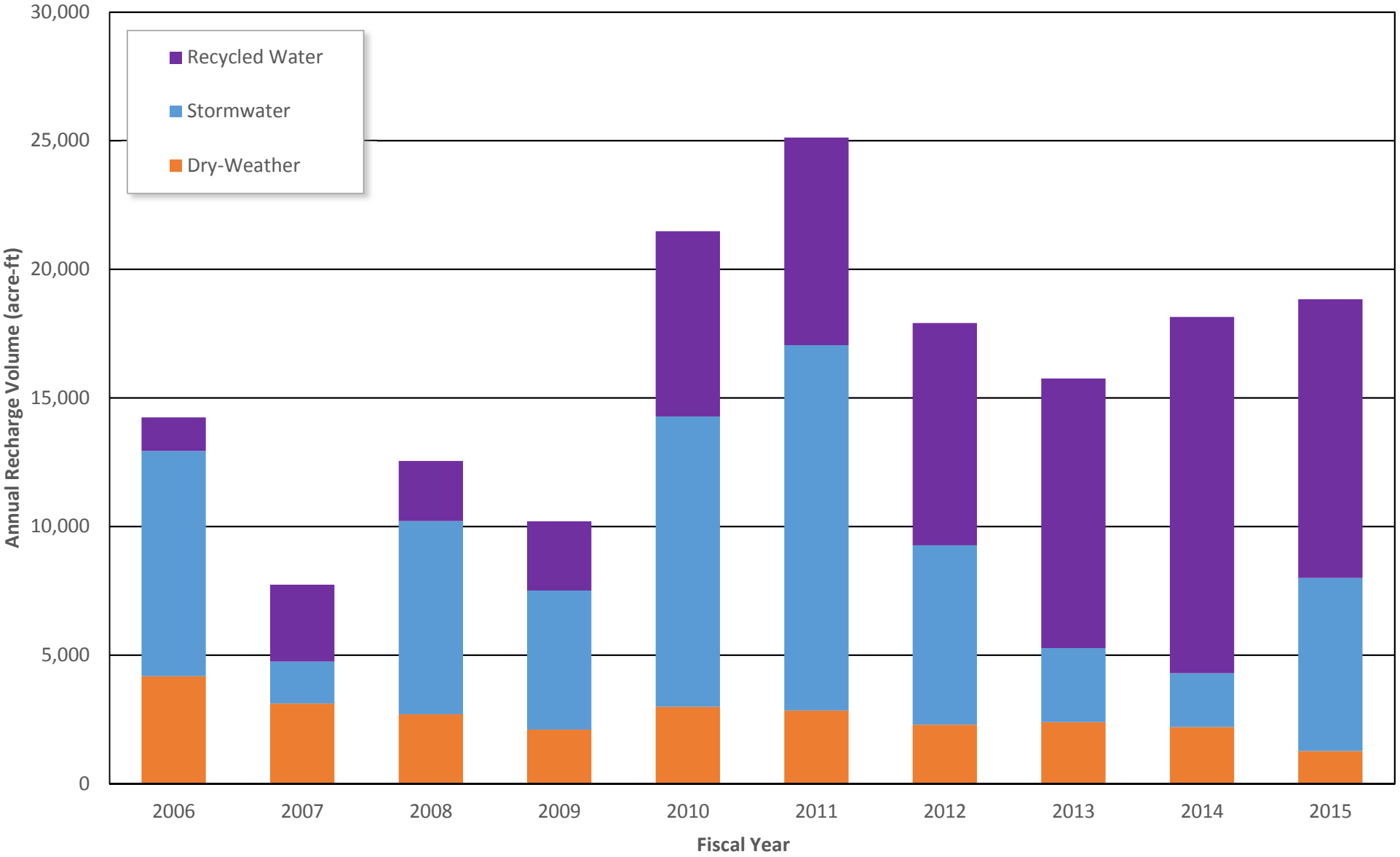

Figure5_Recharge.xlsx
Printed on: 3/2/2016

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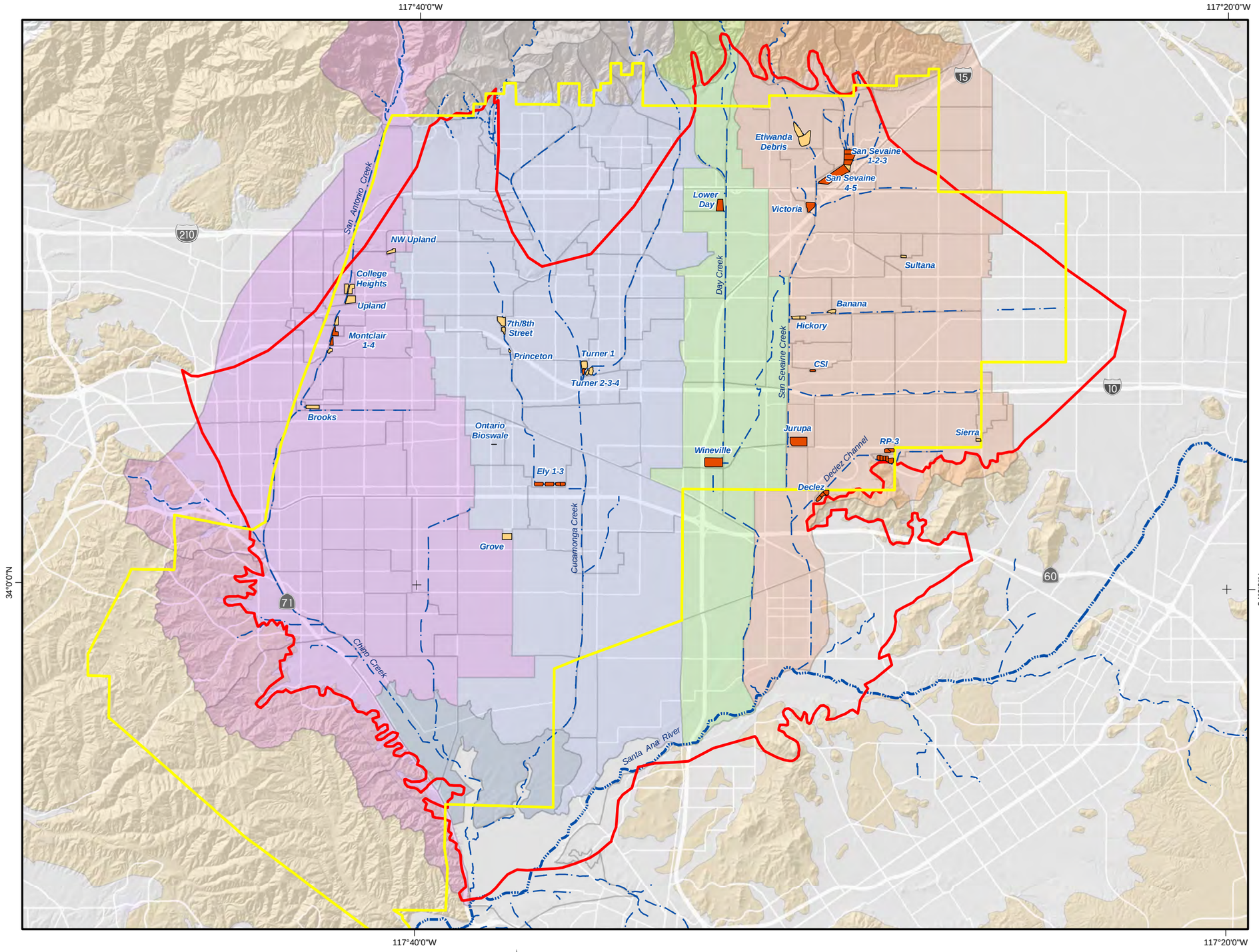

Chino Basin DWR Bulletin 118 Boundary

Hydrologic Subareas (HSAs) used in Watershed Modeling

Inland Empire Utilities Agency Service Area Boundary

Watersheds in Creek Systems in Chino Basin Tributary to Santa Ana River

Chino/San Antonio Creek

Cucamonga/Deer Creek

Day Creek

Etiwanda/San Sevaine Creek

Prado Basin Headlands

Recharge Facilities in the Chino Basin

Projects in 2013 Amendment to the 2010 Recharge Master Plan Update (2013 RMPU)

Projects considered in 2013 RMPU and deferred to future RMPU

Geology

Water-Bearing Sediments

Quaternary Alluvium

Consolidated Bedrock

Undifferentiated Pre-Tertiary to Early Pleistocene Igneous, Metamorphic, and Sedimentary Rocks

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Date: 3/2/2016

Name: Figure6_RMPU_recharge

0 1 2 3 4 5 Miles

0 2 4 6 8 Kilometers

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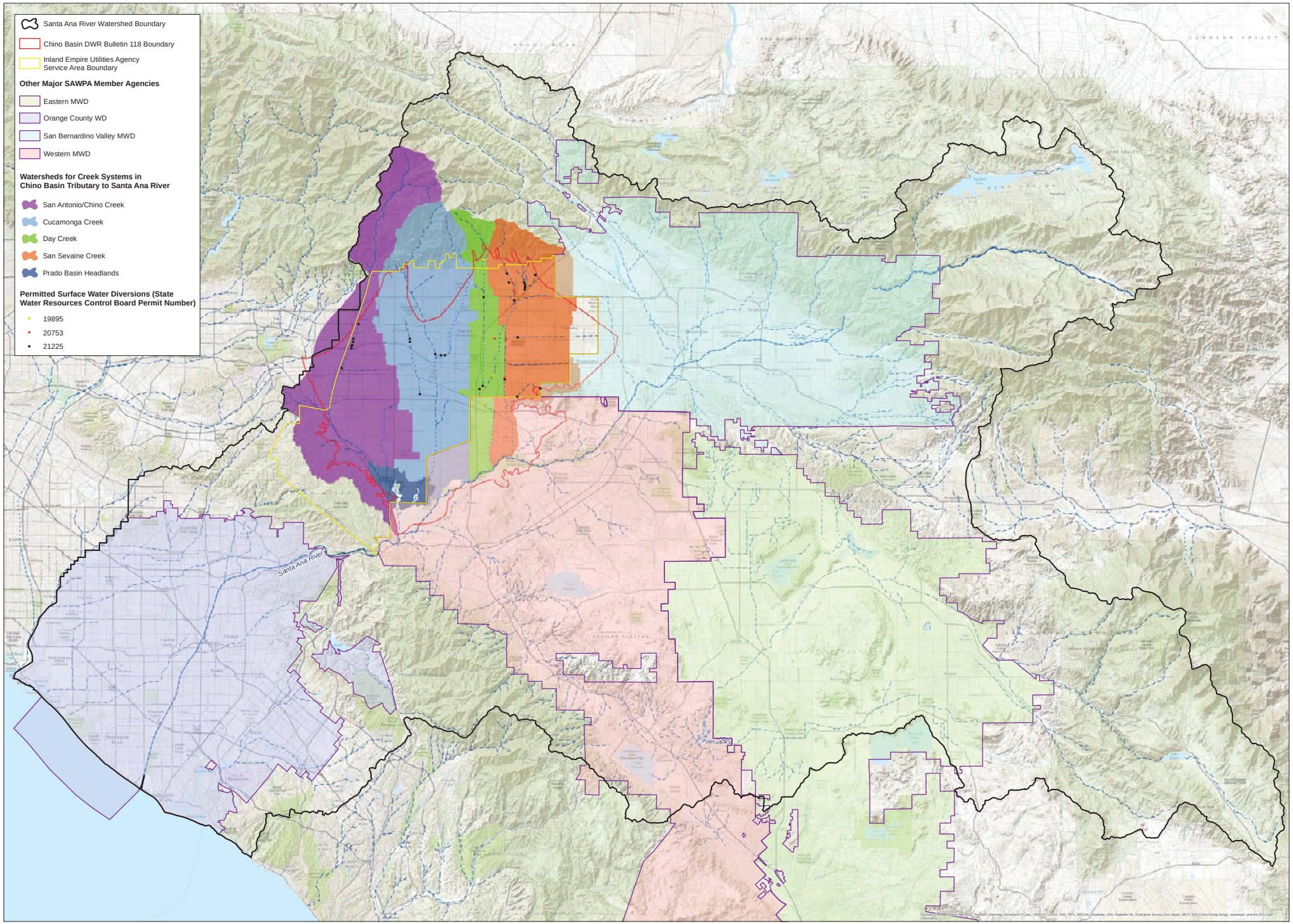
2013 RMPU Storm Water and Dry-Weather Runoff Recharge Projects

Figure 6



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SAR_Watershed_fig1.mxd

N

0 10 20 Miles
0 10 20 30 Kilometers

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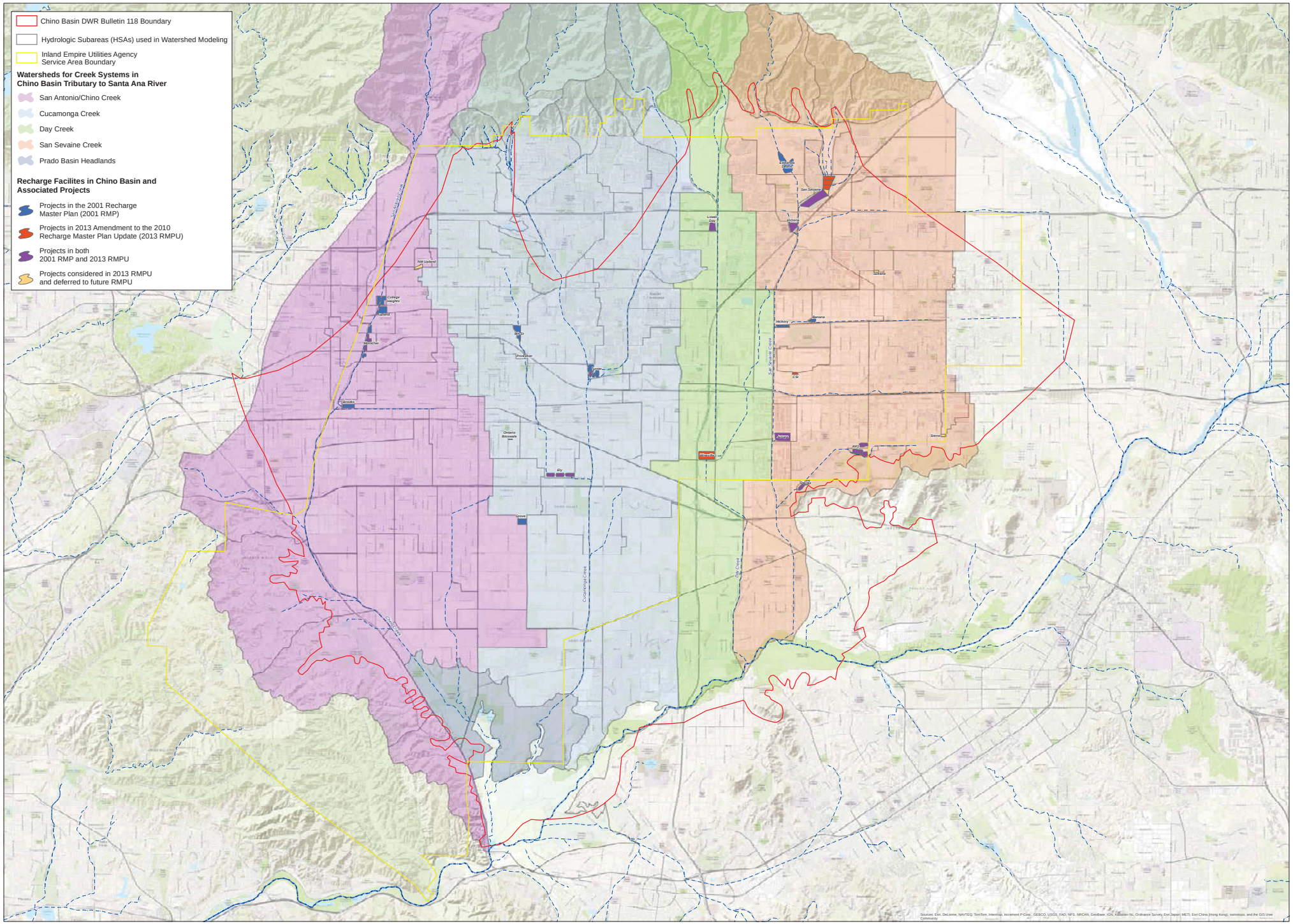
Chino Basin Subwatersheds and Surface Water Diversions within the Santa Ana Watershed

Plate 1



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Chino_Recharge_Facilities.mxd

N

0 5 Miles
0 5 10 Kilometers

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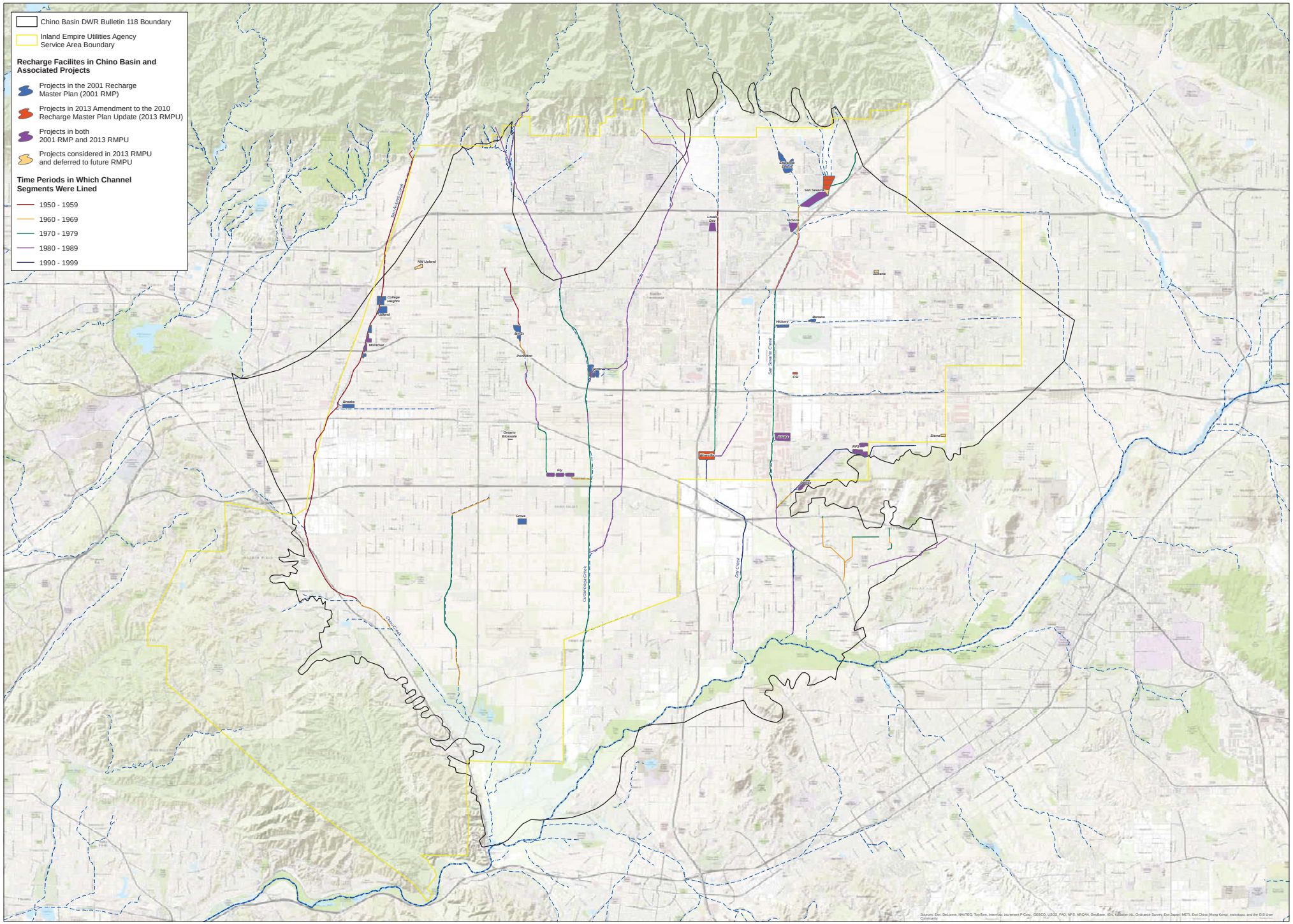
Recharge Improvements in the Chino Basin Since Implementation of the OBMP and the 2001 Recharge Master Plan

Plate 2



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Date: 20160112
Chino_Channels.mxd

N

0 5 Miles
0 5 10 Kilometers

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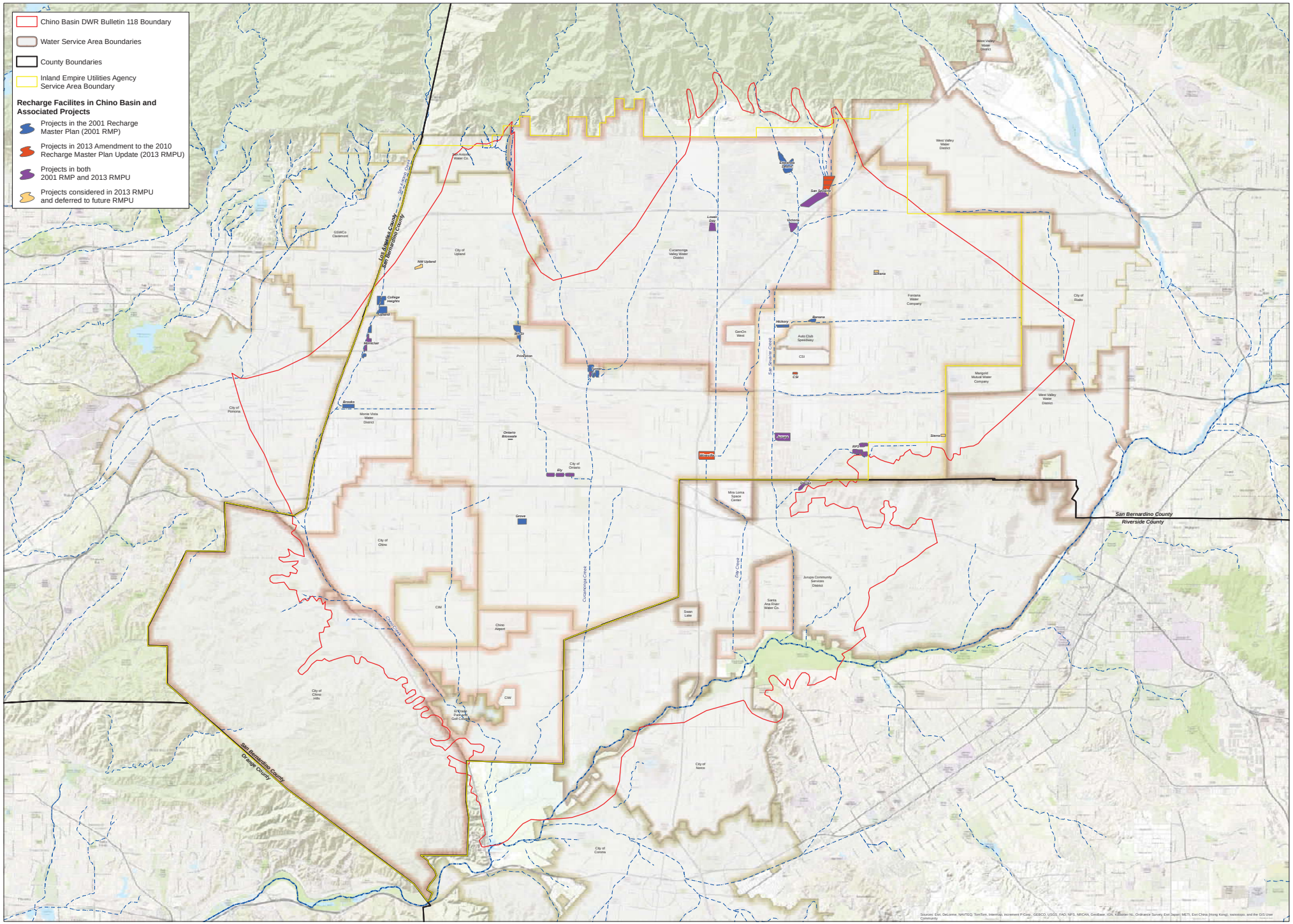
Recharge Facilities and Channel Lining History in the Chino Basin

Plate 3



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Date: 20160112
Chino_Water_Service_Areas.mxd

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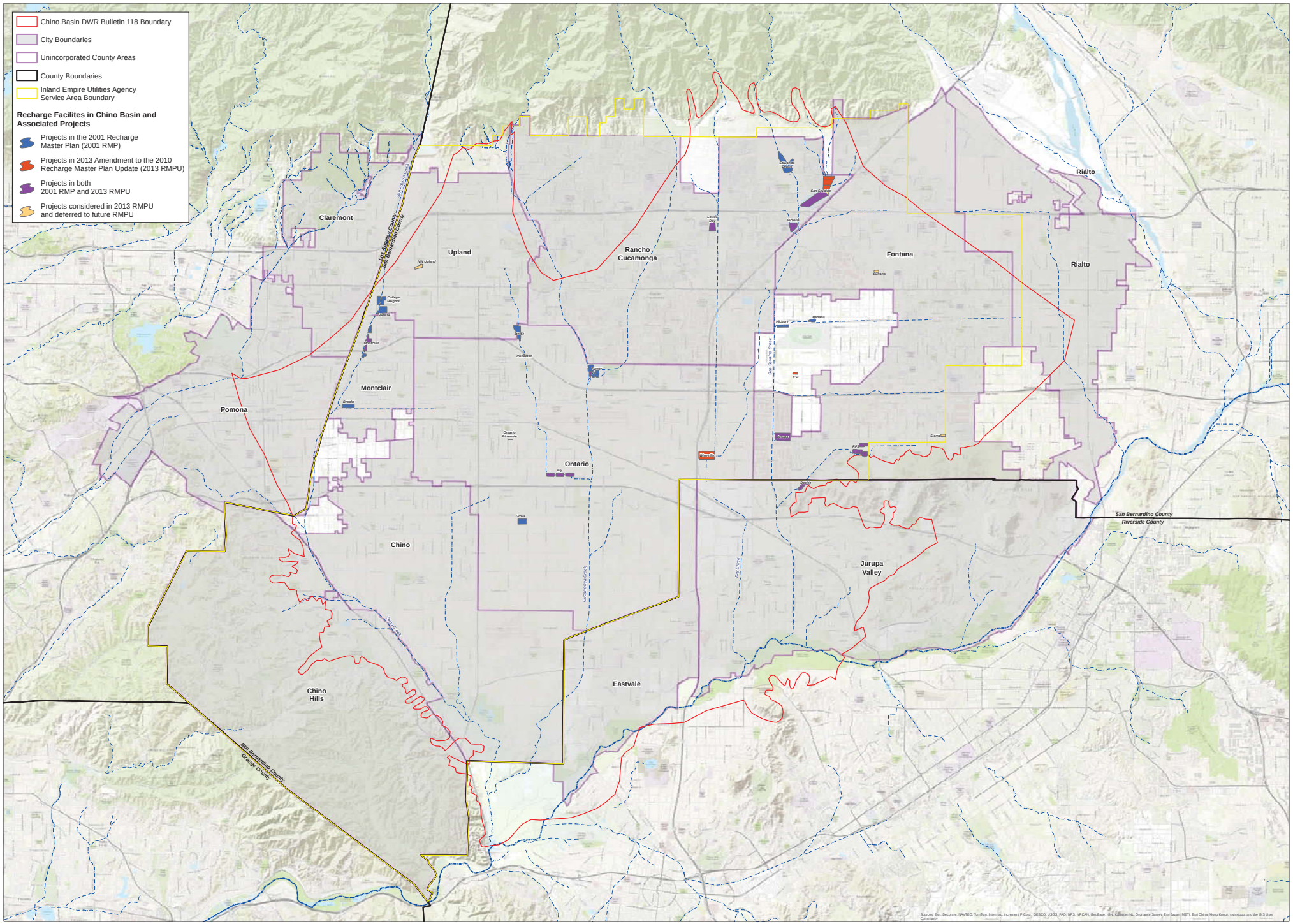
Water Service Areas and Recharge Facilities in the Chino Basin

Plate 4



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Date: 20160112
Chino_LUA.mxd

N

0 5 Miles
0 5 10 Kilometers

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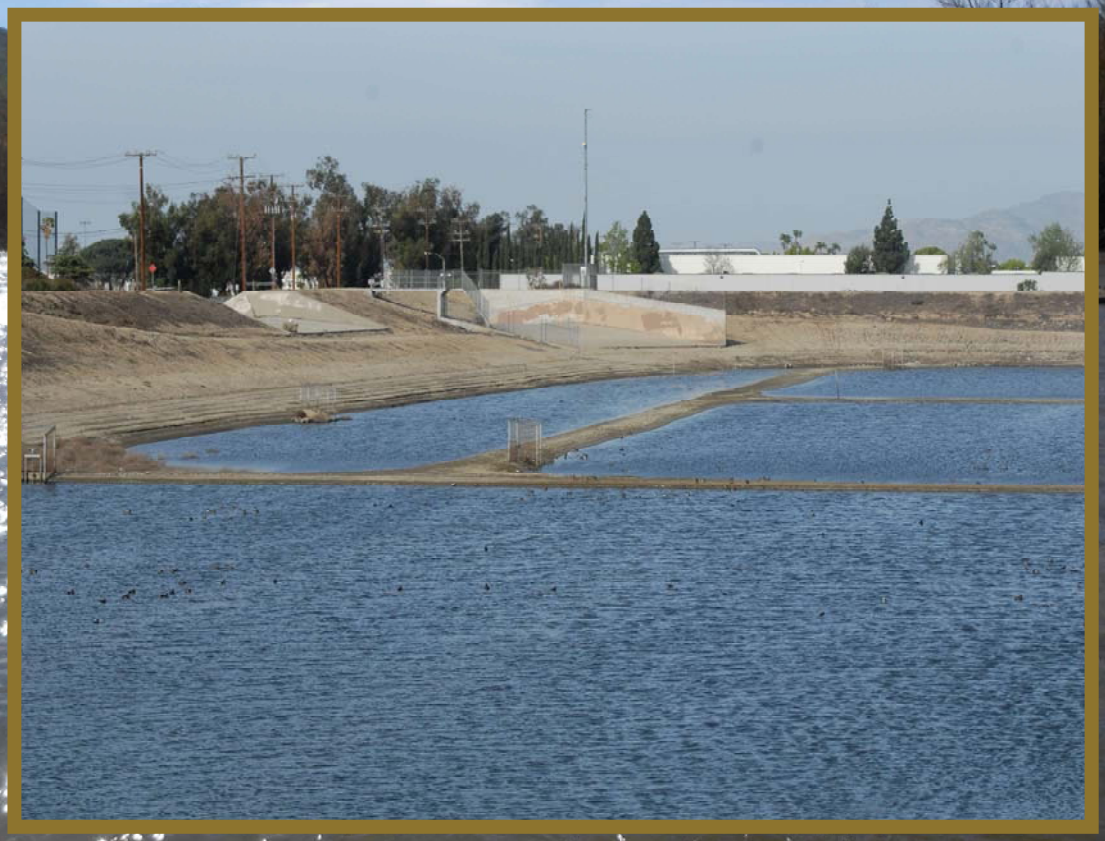
Land Use Control Agencies and Recharge Facilities in the Chino Basin

Plate 5



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