



Memorandum

Date:	June 6, 2014
To:	Greg Gage, San Bernardino Municipal Water Department
Cc:	Bob Tincher, San Bernardino Valley Municipal Water District
From:	Scott Fleury, Mike Romich, Erika Eidson; ICF International
Subject:	Upper SAR HCP Covered Activities Additional Data Request

During Phase 2 of the HCP preparation, ICF staff are working with each water resource agency to finalize the covered activities. All water resource agencies have provided detailed information about their covered activities, but additional information is still needed. This memo will guide you and your agency to identify and provide additional information and data required for the HCP preparation.

The analysis of the potential impacts of covered activities on the covered species requires descriptive information and data for each covered activity at a level of detail that accomplishes the following:

- Describes in text the type of activity (project or action) so that a reader of the HCP can understand generally what will occur when the covered activity is implemented.
- GIS data showing the footprint of the area affected by the covered activity (project construction footprint or area where operations and maintenance (O&M) will occur). GIS data should be as accurate as possible given what is currently known about the future covered activity.
- What is the timing (season and duration) and frequency of the activity. For new project construction, when is the project construction expected to start, and what portion of the project footprint is a temporary construction impact. For O&M activity, how often does the activity occur, in what time(s) of year, and what is the duration of the activity.
- For covered activities that may affect hydrology, will need to describe how the covered activities will alter the magnitude, frequency, and duration of flow volume (cfs) throughout the year. All available hydrology data describing measured or modeled seasonal daily flows (and peak flows if available), and all information about the operation of the covered activities that can be used to assess how the activities would change daily flows would be

helpful. For example, for recharge and flood control basins, any analyses that have been performed to determine their capacity, infiltration losses, and other factors will assist in determining how much water can be diverted. If data are available about the baseline hydrology at the location of the covered activity, please provide that or the source as well.

- For proposed recycling of water at wastewater treatment plants that would alter effluent releases back to the system, would need a schedule of current daily flow releases and how proposed water recycling will change it.

The section below includes a data needs table indicating which types of data are still missing for each covered activity, a figure depicting the GIS data for the covered activity, and the current text description we have for each of your covered activities. Please review the information below. We will be contacting you soon to review this memo, answer any questions, and schedule a time to meet with you (conference call with online desktop sharing) to assist you in filling the missing data and information.

Covered Activities for San Bernardino Municipal Water Department

Clean Water Factory (ID: 7.01)

Clean Water Factory (ID: 7.01)	
Information Required	Complete
Complete detailed project description	
Detailed GIS information	
Construction/O&M timing (frequency, duration, and seasonal timing)	
Hydrology changes (frequency, duration, and seasonal timing)	









New Facilities

The San Bernardino Recycled Water Project, or Clean Water Factory (CWF), proposes improvements to the existing San Bernardino Water Reclamation Plant (SBWRP) and the installation of distribution pipelines extending to the Waterman Basin and East Twin Creek Spreading Ground on-channel basins. The CWF improvements would result in an increase in available recycled waters, thus reducing the Water Department's dependence on imported water (from the SWP) and maximizing the availability of recycled water to local users.

The CWF will treat effluent from the SBWRP to a quality approved for recharge—as set by the California Department of Public Health (CDPH) and the Santa Ana Regional Water Quality Control Board (RWQCB)—and convey the recycled water to the Waterman Basins, the East Twin Creek Spreading Grounds, and the Devil Canyon and Sweetwater Basins for surface spreading. Recycled water spread at these facilities will artificially recharge the Bunker Hill Groundwater Basin (Bunker Hill Basin) and, more specifically, the Bunker Hill A Management Zone, as described in the Water Quality Control Plan for the Santa Ana River Watershed (Basin Plan). The CWF will also treat a side stream of SBWRP effluent to a quality approved for direct use and convey the tertiary treated recycled water to customers that can benefit from a non-potable water supply. Phase VI of the CWF project involves the design and construction of a 4,700 acre-feet per year (AFY) advanced purification treatment system, distribution system, and groundwater recharge facilities for indirect reuse.

Direct use sites that currently operate independently of recycled water would be improved to comply with reuse regulations. These improvements would include:

- Installation of dual-plumbing systems in which there is no physical connection between potable and non-potable conveyance systems.
- Containment of recycled water on site.
- A 50-foot irrigation buffer from domestic water supply wells.
- A 100-foot buffer between impounded recycled water and domestic water supply wells.

The total impact footprint will be dependent on the different options and flow scenarios that will be chosen for facility sizing for transmission pipelines, pump stations, and storage reservoirs under each conveyance scenario. Two optional configurations have been developed for a site that combines a storage reservoir and pump station. It is assumed that the CWF site would accommodate one circular reservoir or one rectangular concrete masonry unit block pump building. The difference between the options is the orientation of the pump building. In order to determine typical site requirements, the Water Department has defined the following two options.

Option A

- A minimum 25-foot clear area with drivable access around entire reservoir and building footprints.

- A minimum 40-foot clear area with drivable access between the reservoir and pump building.
- A 50-foot clear area immediately in front of the access driveway to ensure space for yard piping, valve vaults, flow meter, surge tank, electrical equipment, and space provisions for connecting a portable backup generator.
- Landscaping buffer 10 feet wide on all sides.
- A 30-foot-wide driveway access and 20-foot-wide gate.
- Fencing on property lines and right-of-way line.

The minimum amount of land required will be dependent on the sizes of the reservoir and building. For example, a 100-foot-diameter reservoir and a 20-foot by 40-foot building will require a parcel with minimum dimensions of 170 feet by 250 feet, or approximately 0.98 acre.

Option B

- A minimum 25-foot clear area with drivable access around entire reservoir and building footprints.
- A minimum 40-foot clear area with drivable access between the reservoir and pump building.
- A 50-foot clear area immediately in front of the access driveway to ensure space for yard piping, valve vaults, flow meter, surge tank, electrical equipment, and space provisions for connecting a portable backup generator.
- Landscaping buffer 10 feet wide on all sides.
- A 20-foot-wide driveway access centered between the reservoir and pump building.
- Fencing on property lines and right-of-way line.

The minimum amount of land required will be dependent on the sizes of the reservoir and building. For example, a 100-foot-diameter reservoir and a 20-foot by 40-foot building will require a parcel with minimum dimensions of 170 feet by 240 feet, or approximately 0.94 acre.

Impact Assumptions

New pipeline: 10.9 acres permanent and 10.9 acres temporary.

New Pipeline maintenance: 0.3 acre permanent and 2.6 acres temporary.

CWF upgrades: 1.0 acre permanent

Facility O&M: 1.0 acre temporary.

Maintenance

Maintenance activities for the proposed CWF would include maintenance of both the conveyance pipelines and the spreading grounds and basins. For the conveyance pipeline, pumps, storage tanks, piping, valves, and appurtenant structures would be checked and maintained regularly and replaced as needed. Fine sediment will be removed annually from the bottom of the basins. This may include the use of heavy equipment to remove silt and debris from the spreading basins. Weed abatement activities and erosion control will also be conducted at the facilities.

Operations

SBWRP currently treats 22 million gallons per day (mgd) to secondary treatment standards. The secondary treated water is conveyed via a pipeline to the RIX facility for tertiary treatment and discharge to the Santa Ana River. The RIX facility currently treats approximately 5 mgd of secondary-treated effluent from the City of Colton and 22 mgd from the SBWRP to the tertiary level, and discharges approximately 36 mgd to the Santa Ana River. As part of the CWF project, secondary effluent from the SBWRP to the RIX facility would be reduced from 22 mgd to approximately 4 to 7 mgd. Under the CWF project, it is proposed that the Santa Ana River discharge from the RIX facility would be reduced from 36 mgd to 11.9 mgd.

Other Pipelines (ID: 8.01)

Other Pipelines (ID: 8.01)	
Information Required	Complete
Complete detailed project description	
Detailed GIS information	
Construction/O&M timing (frequency, duration, and seasonal timing)	
Hydrology changes (frequency, duration, and seasonal timing)	

[Need GIS layer]

The Water Department maintains six pipeline stream crossings.

- Pipeline Crossing at Tippecanoe Avenue
- Pipeline Crossing at Mountain View Avenue
- Pipeline Crossing at E Street
- Pipeline Crossing at Waterman Avenue
- Pipeline Crossing at Orange Show Road
- Geothermal Pipeline

Impact Assumption

0.05 acre permanent and 0.75 acre temporary.

Maintenance

Routine maintenance of pipelines is described in Routine Operations and Maintenance Activities, below.

Operations

Routine operations of pipelines is described in Routine Operations and Maintenance Activities, below.

Kenwood Well Field and Pipeline (ID: 9.01)

Kenwood Well Field and Pipeline (ID: 9.01)	
Information Required	Complete
Complete detailed project description	
Detailed GIS information	
Construction/O&M timing (frequency, duration, and seasonal timing)	
Hydrology changes (frequency, duration, and seasonal timing)	





The Kenwood well field is located in Cajon Creek Wash near the Interstate (I-) 215/I-15 junction. The well field is connected to other Water Department infrastructure by an existing pipeline.

New Facilities

The Water Department is proposing to add one new well to the existing facility, as well as a new main pipeline, generally following the path of the existing main pipeline.

Impact Assumption

New well: 0.6 acre permanent

Well field O&M: 0.4 acre temporary.

New pipeline: 4.4 acres permanent

Pipeline maintenance: 0.05 acre permanent and 0.15 acre temporary.

Maintenance

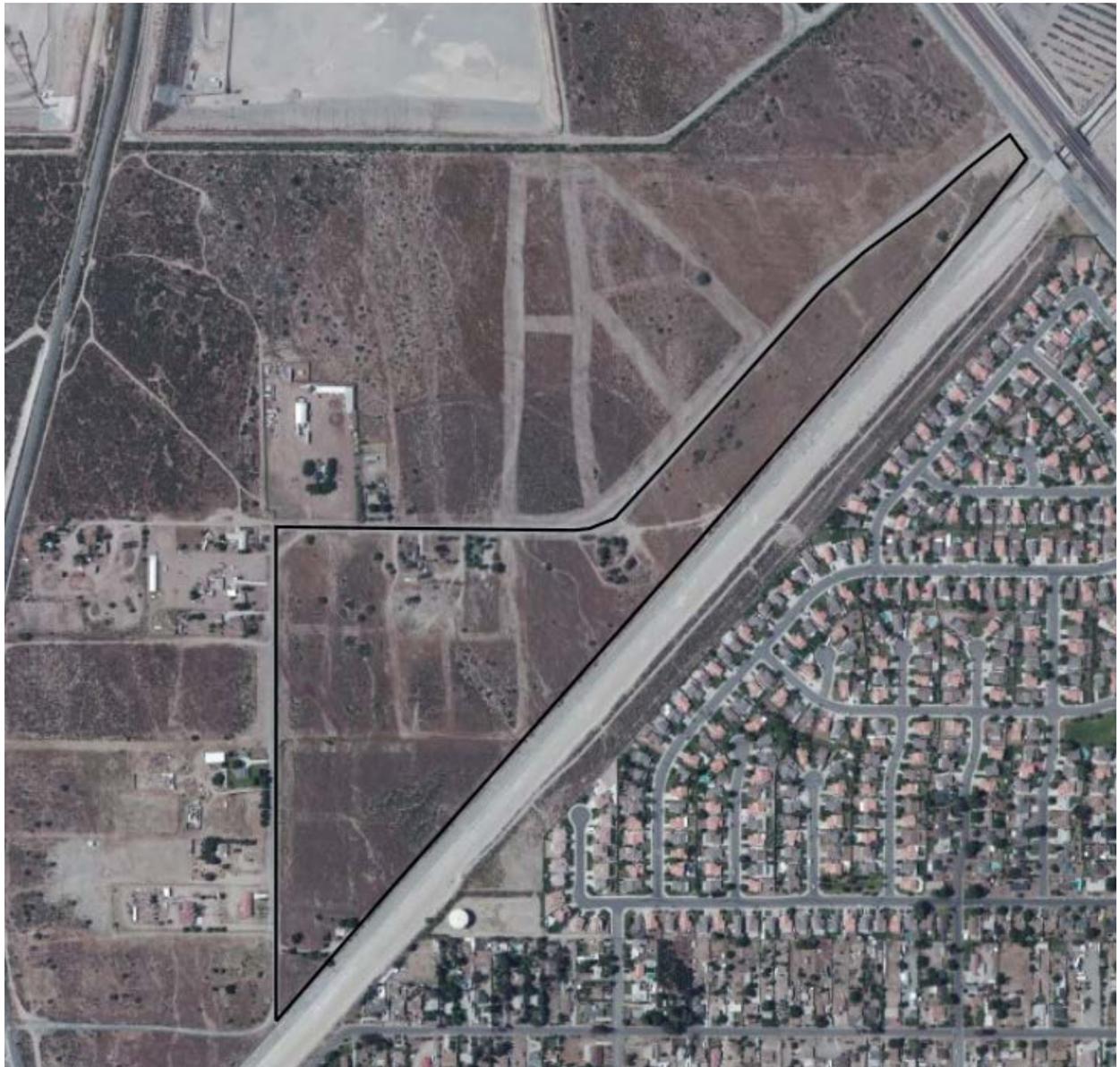
Maintenance activities would cover three existing wells at the Kenwood well field site, and the one new well, for a total of four wells.

Operations

[Text description needed]

Devil Creek Diversion Groundwater Recharge Basin (ID: 10.01)

Devil Creek Diversion Groundwater Recharge Basin (ID: 10.01)	
Information Required	Complete
Complete detailed project description	
Detailed GIS information	
Construction/O&M timing (frequency, duration, and seasonal timing)	
Hydrology changes (frequency, duration, and seasonal timing)	



New Facilities

The Water Department plans to develop a new recharge basin north of the Muscoy area within the City of San Bernardino. The proposed recharge basin is located within an existing parcel of land currently owned by Vulcan Materials, immediately north of the existing Devil Creek Diversion and flood control channel, approximately 3,700 feet southwest of Cajon Boulevard, encompassing an area of approximately 10.5 acres.

The project purpose is to utilize SWP water from an existing Metropolitan Water District of Southern California (MWD) feeder line turnout into the Devil Canyon Basins area and then route the flows into the existing Devil Creek Diversion and flood control channel, and then to a diversion structure located at the upstream point of the proposed recharge basin. Currently there is an existing MWD turnout providing SWP water into the Devil Canyon Basins and no additional facilities would be required to convey groundwater recharge water supply to the project area. A diversion structure would be required within the flood control channel to divert discharges into the proposed recharge basin. Construction of the project is tentatively anticipated in 2018.

Impact Assumption

10.5 acres permanent [Need to confirm GIS layer ICF has is accurate (source is Valley District). In GIS it is called Vulcan Basin and is approximately 48 acres.]

Maintenance

[Text description needed]

Operations

Based on discussions with staff, it is estimated that the existing turnout has a total discharge capacity of 37 cfs ($\pm 16,600$ gallons per minute [gpm]) and would be able to provide approximately 10 cfs ($\pm 4,500$ gpm) to the proposed recharge basin.