



Beverly Hills City Council Liaison / Public Works Commission Committee will conduct a Special Meeting, at the following time and place, and will address the agenda listed below:

**CITY HALL
455 North Rexford Drive
4th Floor Conference Room A
Beverly Hills, CA 90210**

**Wednesday, September 20, 2017
11:00 AM**

AGENDA

- 1) Public Comment**
 - a. Members of the public will be given the opportunity to directly address the Committee on any item listed on the agenda.
- 2) La Brea Subarea Basin Preliminary Design Report Summary and Next Steps**
- 3) Adjournment**

A handwritten signature in black ink, appearing to read "Byron Pope", written over a horizontal line.

Byron Pope, City Clerk

Posted: September 19, 2017

A DETAILED LIAISON AGENDA PACKET IS AVAILABLE FOR REVIEW IN THE LIBRARY AND CITY CLERK'S OFFICE.



In accordance with the Americans with Disabilities Act, Conference Room A is wheelchair accessible. If you need special assistance to attend this meeting, please call the City Manager's Office at (310) 285-1014 or TTY (310) 285-6881. Please notify the City Manager's Office at least twenty-four (24) hours prior to the meeting if you require captioning service so that reasonable arrangements can be made.



STAFF REPORT

Meeting Date: September 20, 2017

To: Public Works Liaison

From: Trish Rhay, Assistant Director of Public Works Services,
Infrastructure & Field Operations
Vince Damasse, Water Resources Manager
Vincent Chee, Project Manager

Subject: LA BREA SUBAREA BASIN PRELIMINARY DESIGN REPORT
SUMMARY AND NEXT STEPS

Attachments: May 2017 Preliminary Design Report Executive Summary

This report summarizes the Preliminary Design Report (PDR) of the La Brea Subarea of the Central Basin prepared by Michael Baker International (MBI) and the next steps to develop the 1700 Acre-Foot Year (AFY) of groundwater supply to the City's water supply portfolio.

DISCUSSION

The City's 2015 Water Enterprise Plan (WEP) identified the need to establish the well field in the La Brea Subarea of the Central Basin to increase the local groundwater supply. On April 5, 2016, the City contracted MBI to prepare a PDR for the development of groundwater resources in the unadjudicated portion of the Central Basin. The objectives of the PDR are to gather hydrogeological data to better estimate the potential of groundwater production, collect water quality data, determine optimal production well locations, and evaluate the required water treatment and the strategy to implement this project in a timely and cost-effective manner.

The major project components of the PDR include:

- Production Wells
- Water Treatment
- Water Conveyance
- California Environmental Quality Act (CEQA)
- Cost Evaluation
- Implementation Schedule

MBI developed and analyzed six (6) project alternatives consisting of the combination of two (2) treatment site options for either expanding the existing WTP or constructing a new treatment plant at the Coffee Bean site. Additionally, several pipeline alignments were evaluated along with the two treatment plant site options.

Based on technical feasibility, operational flexibility and cost-effectiveness, the following project components are recommended:

- Three (3) groundwater production wells in the La Brea Subarea
- Upgrade of the existing Foothill Water Treatment Plant to treat the new water supply
- Raw water transmission main from the production wells to the Foothill Water Treatment Plant (approximately 4 miles). The conveyance system can be the combination of rehabilitation of the existing pipeline and construction of a new pipeline from the intersection of La Cienega Blvd. and Olympic Blvd. to the Foothill Water Treatment Plant

The estimated capital and O&M cost for the La Brea Subarea Project is \$54 million (2017 Costs) based on a Class 4 budget estimates with associated accuracy of -15% to +30%. The construction cost for the project will be determined after the completion of the final design. The unit cost of water is approximately \$2,737 per AF. It will take approximately 7 years for design and construction of the recommended project.

Next Steps

Upon City Council acceptance to continue with this project and appropriate financing, the following next steps per the PDR are recommended:

- RFP to obtain an Architectural & Engineering (A&E) firm for the design of the project
- Start CEQA documentation (Environmental Impact Report)
- Conduct Closed Circuit Television (CCTV) investigation on the remaining 65% of the La Cienega Transmission Main
- Identify and purchase production well site(s) – 1 or 2 additional sites depending on the viability of the City-owned Sand Pit site
- Division of Drinking Water coordination and approvals

Shana Epstein
Approved By

ATTACHMENT 1



SECTION 1. Executive Summary

In accordance with the City's 2015 Water Enterprise Plan (WEP), this Preliminary Design Report (PDR) evaluates the feasibility of developing an additional net 1700 acre-ft./year (AFY) of additional groundwater supplies in the La Brea Subarea which is an unadjudicated portion of the Central Groundwater Basin.

In order for the City of Beverly Hills (City) to expand local water supply by developing groundwater in the La Brea Subarea of the Central Groundwater Basin, the following project components are recommended:

- Three (3) groundwater production wells in the La Brea Subarea
- Upgrade of the existing reverse osmosis (RO) Foothill Water Treatment Plant to treat the new water supply
- Raw water transmission main from the production wells to the Foothill Water Treatment Plant (approximately 4 miles)

The ultimate goal of the recommended project is to develop an additional 1700 AFY of groundwater production in the La Brea Subarea of the Central Groundwater Basin. The final recommended project is shown graphically on Exhibit 1-1. For the purposes of the PDR, the recommended project and associated costs focuses on the La Brea Subarea Central Groundwater Basin wells associated with developing, designing, and constructing an additional 1700 AFY of groundwater supply at the existing Foothill plant. The additional incremental costs to mitigate current water quality issues at the Hollywood Wells and to integrate the existing Hollywood Wells and future Maple Yard Wells groundwater supply into the Foothill plant are not included in the costs for the recommended project in the La Brea Subarea. However, at the request of the City, a high-level planning level estimate for that portion of work is included for informational purposes. The required improvements and associated costs needed to address the Hollywood and Maple Yard wells should be evaluated in more detail in parallel with preparation of the CEQA document.

A summary of the major project components of the recommended project is described in subsequent sections.

1.1 PRODUCTION WELLS

The project includes three (3) new production wells.

Production Well Site #1 is the Coffee Bean site (1945 La Cienega Boulevard), which is recommended based on favorable projected production rates and water quality results gathered during drilling and testing of an exploratory test hole at the site. Division of Drinking Water approval of Well Site #1 as a production well site is currently in



progress. The test borehole was converted into a groundwater monitoring well which can be utilized to collect groundwater water quality data for the future production well.

Production Well Site #2 is the Sand Pit site (2325 La Cienega Boulevard), which is recommended due to its optimal location within the La Brea Subarea. It is also outside the zone of influence from the Coffee Bean site (Well Site #1) and located on property that is owned by the City. For the purposes of the PDR, the cost estimate for the recommended project includes land acquisition costs for another property to replace the Sand Pit site as Production Well Site #2. At the time of the completion of the PDR, the approval for utilizing the Sand Pit as a potential production well site is in progress with the Division of Drinking Water.

Production Well Site #3 is a site still to be identified that must be acquired by the City. Well Site #3 ideally would be located in a residential area in close proximity to the other well sites (#1 and #2) but outside the zone of influence.

Based on the exploratory test hole drilled at the Coffee Bean site and the isolated zone aquifer testing conducted, it is projected that a full-scale production well at the Coffee Bean site and the Sand Pit site can be expected to produce between 500 gpm and 700 gpm with an operational utilization rate of 75%. The predicted pumping rate for Well #3 will depend on the final location but is anticipated to be similar to Well Sites #1 and #2.

Design criteria for each well includes a 150-hp submersible pump to be located within a new building. A summary of the production wells associated with the project are shown on Table 1-1.

**TABLE 1-1
 PRODUCTION WELLS SUMMARY**

Well #	Location	Predicted Flow Rate	Pump Type
Well Site #1	Coffee Bean Site	500 to 700 gpm	150 hp Submersible
Well Site #2	Sand Pit Site	500 to 700 gpm	150 hp Submersible
Well Site #3	TBD	500 to 700 gpm	150 hp Submersible

1.1. WATER TREATMENT

Overall, based on the anticipated water quality, location, cost-effectiveness, and other operational factors, it is recommended to expand the existing RO plant on Foothill Road to treat the new well water from the La Brea Subarea. Treating this future supply at the existing plant will benefit the City as a whole as the new well water could be distributed from the City’s Sunset Reservoir to the City’s entire distribution network.

Noting that the current RO treatment plant can expand to accommodate additional flow from the new wells, a comparison was performed to compare the options of a new plant



at the Coffee Bean site (Well Site #1) versus utilizing the existing Foothill Road plant. The cost analysis is provided in Chapter 7. Additionally, it is beneficial to limit the number of treatment facilities that the City owns and operates. Ever-changing regulations and permitting requirements are examples of issues that would apply to each plant independently and require additional resources to manage.

The existing RO plant expansion includes addition of a new 5 mgd iron and manganese pre-treatment system. In order to accommodate the proposed iron and manganese pre-treatment system, the existing RO facility should be modified to utilize the only sufficient space available in the courtyard/fountain area along Foothill Road. The modifications require demolition of the conference/observation room and extension of the building in the courtyard/fountain area.

In addition to an iron and manganese pre-treatment system, the existing RO plant expansion required to treat the new La Brea groundwater supply includes installation of a new RO rack similar in size to the existing RO rack, RO feed pump, air stripper tower, and all necessary electrical, controls, connections, and piping.

1.2. CONVEYANCE

The inactive 18-inch reinforced concrete pipe (RCP) transmission main in La Cienega Boulevard was located through potholing and excavation. Based on a CCTV investigation of approximately 35% of the total pipe length (2,761 LF of a total 8,000 LF), the existing inactive transmission main was found to be suitable for pipeline rehabilitation for the 35% of the pipeline inspected. As part of final design, it is recommended to CCTV the remaining portion of the transmission main, and if found to be in similar condition, to proceed with rehabilitation of the pipeline.

The recommended pipeline rehabilitation method is sliplining using High Density Polyethylene (HDPE) with the rolldown method, or traditional sliplining with fusible PVC. The sliplining method maximizes the internal diameter of the pipe, which maximizes the benefit of utilizing the existing inactive 18-inch transmission main.

In addition, a new 16-inch raw water pipeline is required from the terminus of the existing transmission main at Olympic Boulevard to the existing WTP on Foothill Road. This portion of the pipeline alignment is predominantly in Le Doux Road and Burton Way as shown on Exhibit 1-1, and summarized in Table 1-2.

**TABLE 1-2
 SUMMARY OF WATER CONVEYANCE**

Segment	Length	Location	Construction Method	Pipe Material
Segment #1	8,200 LF	La Cienega Blvd	Sliplining	HDPE or Fusible PVC
Segment #2	11,900 LF	Le Doux Rd, Burton Way	Open Trench	16-inch DIP CL 52



1.3. CEQA

It is recommended that the City prepare an EIR for implementing the recommended project. This recommendation is made for the following reasons: 1) to maximize defensibility of the CEQA document; 2) to minimize potential risk related to concerns expressed by project stakeholders, community groups, or affected agencies; and 3) due to the potential for significant environmental effects during construction to adjacent uses.

1.4. COST EVALUATION

The total design and construction cost estimate to implement the recommended project is \$50.0 M in 2017 costs. The 2017 costs do not include adjustments for inflation. The inflation adjusted cost along with a detailed cost breakdown indicating minimum and maximum cost ranges consistent with a Class 4 Estimate (-15%, +30%) is provided in Section 7 of the PDR.

Based on O&M costs once the project is in full operation (producing 1700 AFY), the total unit cost of La Brea Subarea water is estimated at \$2,737/AF in 2017 costs.

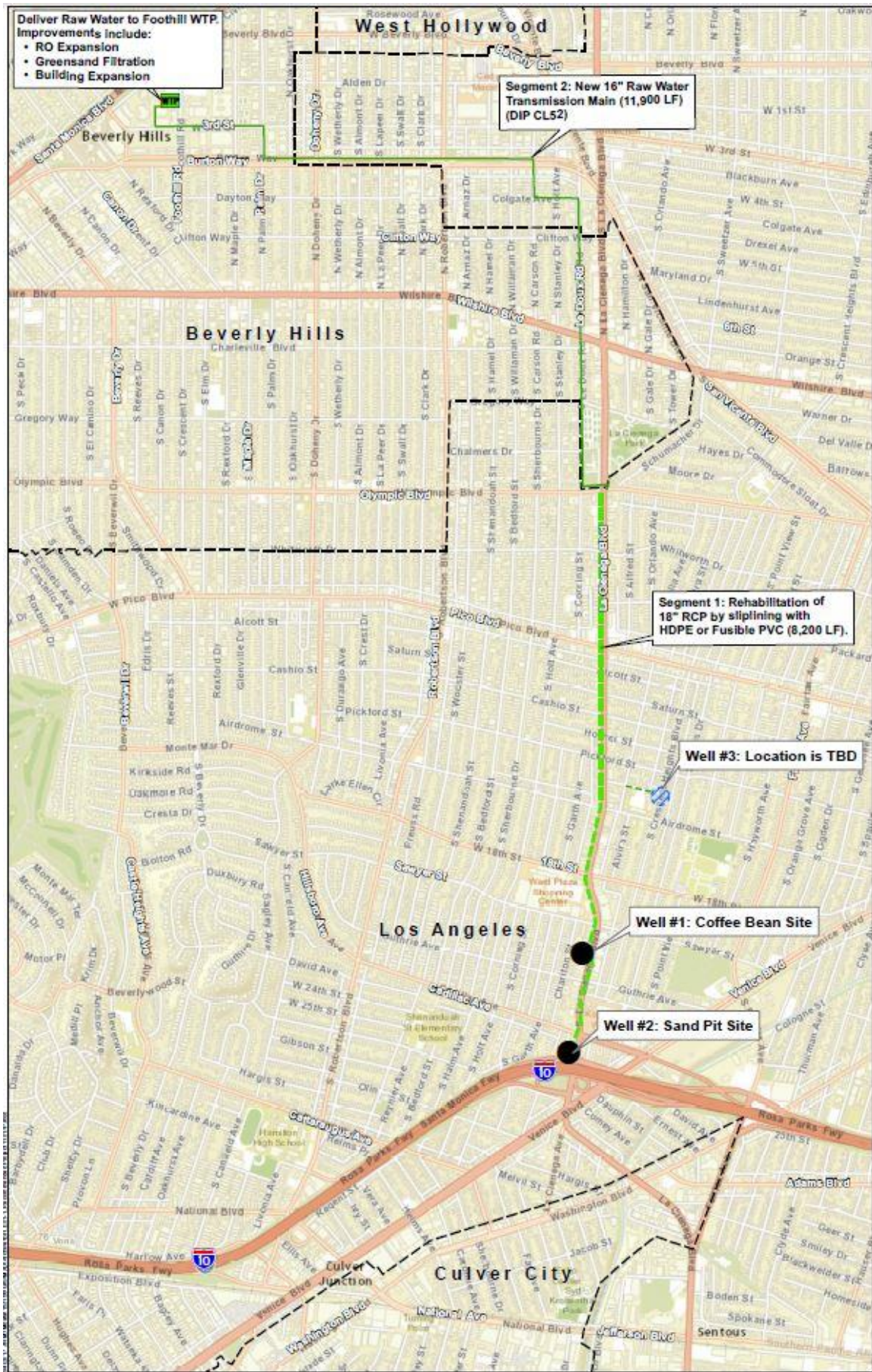
1.5. IMPLEMENTATION SCHEDULE

Table 1-3 shows a summary of the project completion dates for both an accelerated CEQA phasing and typical CEQA phasing option. Two options are being provided to the City to consider. The recommended option would be to pursue the typical CEQA implementation schedule. This schedule would enable the City to ensure stakeholder input and the defensibility of the CEQA document and provide flexibility to the City when considering water rates.

**TABLE 1-3
 IMPLEMENTATION SCHEDULE SUMMARY**

Schedule Options	Start	End	Duration
Schedule with Accelerated CEQA	April-2016	March-2023	7.0 years
Schedule with Typical CEQA	April-2016	November-2023	7.7 years

[1] Assumed Final Design Notice to Proceed in August 2017.



La Brea Subarea Project

Preliminary Design Report
Public Works Liaison

September 20, 2017

Michael Baker
CORPORATION

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Ultimate Project Goal

- Develop 1700 acre-feet per year (AFY) of new potable water supply in the La Brea Subarea of the Central Groundwater Basin (located 1-2 miles south of the City Boundary near I-10/La Cienega Blvd)

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Project Update – What’s Been Done?

- Lower La Cienega Sedimentation Basin Site (Sand Pit)
 - Phase I ESA
 - Phase II ESA
 - Drinking Water Source Assessment Report (DWSAP)
- Conclusions
 - Potential location for a production well
 - Pending Division of Drinking Water (DDW) approval

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CORPORATION

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Project Update – What’s Been Done?

- Coffee Bean Site
 - Phase I ESA
 - Phase II ESA
 - Drilling of exploratory test hole to 800 ft. below surface, with testing for production potential and water quality
 - Conversion to monitoring well for periodic groundwater monitoring



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Project Update – What’s Been Done?

Conclusions

- Production potential is 500 to 700 gpm
- No “deal breakers” in water quality results
- Probable location for production well pending DDW approval



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Project Update – What’s Been Done?

La Cienega Transmission Main – What is it?

- Inactive 18-inch reinforced concrete pipe (RCP)
- Located in La Cienega Blvd from I-10 to Olympic Blvd (8000 LF)
- Located in westerly sidewalk of La Cienega Blvd
- Previously conveyed low pressure raw water from Sand Pit site to water treatment plant at La Cienega Park (La Cienega/Olympic)



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Project Update – What’s Been Done?

La Cienega Transmission Main

- Located via exploratory potholing
- Internal CCTV camera inspection of 35% of the total length (2761 LF of the total 8000 LF)



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Recommended La Brea Project

- Construct 3 new groundwater wells
- Treat the raw groundwater by expanding the existing Foothill WTP
- Convey groundwater to the WTP through rehabilitation of the 18-inch RCP transmission main in La Cienega Blvd., and construct a new raw water transmission main to the City of Beverly Hills

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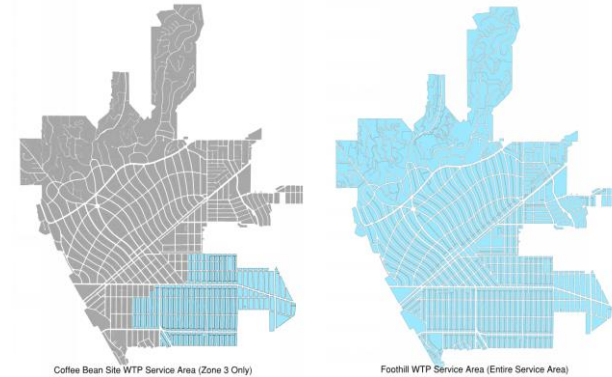
Key Decision Point – Water Availability and Water Quality

- Results from the exploratory test hole at Coffee Bean show sufficient production potential for production wells in the La Brea Subarea, and no “deal breakers” in water quality results
- Coffee Bean test hole findings were used to project production potential and water quality for other production wells

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Key Decision Point – Water Treatment Plant



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Total La Brea Costs (Recommended Project)

- Total Design and Construction Cost: \$50 M (2017 Costs)
 - Land acquisition: \$14 M
 - Production Wells: \$13 M
 - Water Treatment: \$9 M
 - Conveyance: \$14 M
- Operation and Maintenance Costs:
 - \$300,000 per year starting in year FY 19/20
 - \$1.125 M per year starting in FY 23/24

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Total La Brea Costs (Recommended Project)

- Maximum Unit Cost of Water: \$2,737/AF
 - Assumptions:
 - 30-year loan at 4% per year
 - Cost escalation rate at 3% per year

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Schedule

- Typical EIR Phasing:
 - Full Operation by FY 24/25 (7-year schedule)

Next Steps

Upon approval, the next steps are as follows:

- RFP to retain an A&E for the design of the project
- Start CEQA document (EIR)
- Conduct CCTV Investigation on remaining 65% of La Cienega Transmission Main
- Identify and purchase production well site(s)
- DDW coordination and approvals