

WEST COAST BASIN SEAWATER BARRIER TELEMETRY PROJECT

Project Summary

The County of Los Angeles Department of Public Works (LACDPW) proposes to install a telemetry system along the existing West Coast Basin Barrier Project (WCBBP). Once installed, the telemetry system will collect more accurate injection rate and groundwater level information, and transmit the data directly to our headquarters building. The telemetry system will allow barrier engineers to see in real time how changes in injection rates impact groundwater levels and will result in a more efficient operation of the WCBBP.

Within the City of Manhattan Beach, the plans call for a majority of the telemetry system to be installed along the existing WCBBP water supply line, which is located within the greenway between Elm Avenue and Boundary Place. In addition, a small portion of the system will be installed along Valley Boulevard and Oak Street.

Background

Since 1951, the Los Angeles County Flood Control District, now part of LACDPW, has operated the WCBBP by injecting fresh water into the underlying aquifers to prevent seawater from contaminating this valuable drinking water source. Data needed for the operation of the WCBBP has traditionally been collected manually by visiting each injection and observation well location. However, technological advances in instrumentation used to measure flow and pressure have provided improved methods to operate the WCBBP. By installing these electronic devices in existing injection and observation wells, the overall operation of the WCBBP will become more efficient and effective.

Project Design

The telemetry system will stretch 9 miles, from Pacific Coast Highway in the City of Torrance, to El Segundo Boulevard in the City of El Segundo (see Attachment A). It will collect information from 98 injection wells and 65 observation wells located in the Cities of Torrance, Redondo Beach, Hermosa Beach, Manhattan Beach, and El Segundo. The telemetry system will be continuous from one end of the project to the other and will provide A/C power to each injection well location for future remote control capability of seawater barrier operations.

Within the City of Manhattan Beach, the system will stretch 2.2 miles and collect information from 10 injection wells and 7 observation wells (see Attachment B). LACDPW design engineers met multiple times with representatives from the City of Manhattan Beach to come up with a design to minimize impacts to the greenway and still allow the installation of the infrastructure necessary for the telemetry system. For example, the original design called for 9 above ground monitoring control units (MCUs)

to be installed at various injection wells located in the greenway. However, at the request of Manhattan Beach representatives, this number was reduced to a minimum number of 3 MCUs. In addition, the project specifications were modified to include a requirement to maintain pedestrian access to the greenway walking path at all times during construction, and require the MCUs to blend in with the existing environment.

Estimated Project Duration

It is estimated that construction activities will last approximately two months. Construction will start after a project update is presented to the Manhattan Beach City Council and once the construction contract is awarded (anticipated start in April 2009).

Construction Activities

Construction activities will include the following:

1. Excavate a trench 6 inches wide by 36 inches deep to install two 2-inch PVC conduits along the alignment. One conduit will be used for installing electrical equipment to transmit the telemetry signal, while the other conduit will be used to install wiring to provide A/C power to the injection wells.

Installation of conduits within the greenway will be accomplished by temporarily removing the existing wood chips over the trench area, trenching, and installing the conduits. The wood chips will then be placed over the trench area to restore the site to its original condition.

For street crossings, PVC conduits will be directionally drilled below the existing pavement rather than trenching across the street. This will minimize the impact of construction activities on local traffic.

2. Install pull boxes along the alignment at approximately 300-foot intervals. The pull boxes will allow the electrical wiring and equipment to be installed and connected from one well to the next within the PVC conduits.
3. Retrofit observation wells with new vaults to accommodate the electronic wiring and equipment. When the observation wells were originally installed in the 1960s and 1970s, they were done so without the benefit of knowing the future advances in electronic monitoring equipment.
4. Install small MCU cabinets at three injection well locations. Originally, 9 MCU cabinets were proposed for the telemetry system. However, as noted above, after meeting with representatives from Manhattan Beach, the number of MCU cabinets was reduced to three.

INFO SHEET

The locations of the three MCU cabinets were carefully selected to minimize any visual impact on the greenway and will be installed in the following locations: on the sidewalk along Oak Street located 600 feet away from the greenway near injection well 5R; inside the existing chain-link fenced area that is used for well maintenance near the intersection of 12th Street and Ardmore Avenue near injection well 6B; and on the existing paved area used for well maintenance along the Valley Drive between 1st and Francisco Streets near injection well 6I2 (see Attachment C).

Please note, this is the absolute minimum number of MCU cabinets that can be used and still maintain a functional telemetry system.

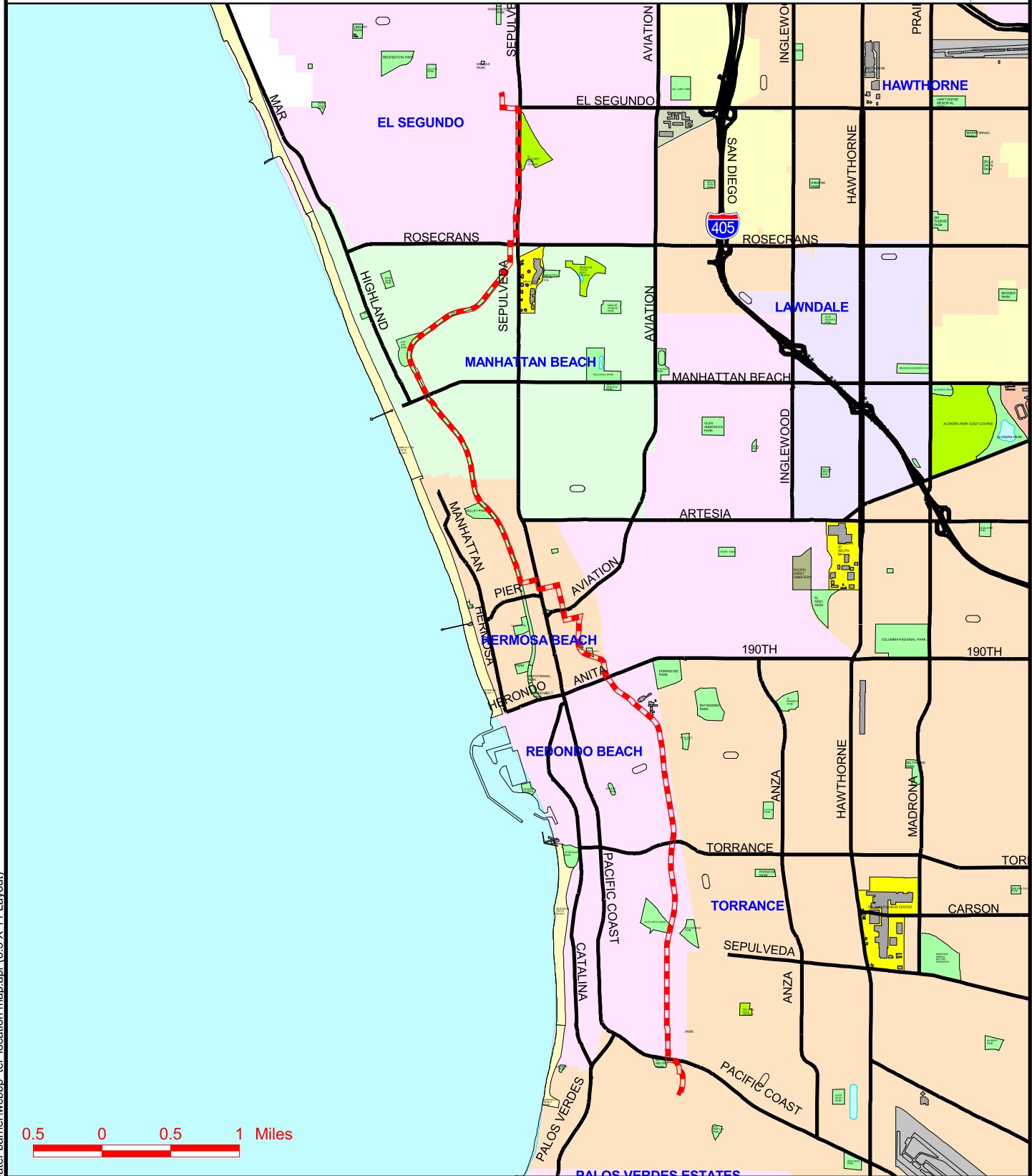
Benefits to City of Manhattan Beach

The City of Manhattan Beach and its residents will receive the following benefits as a result of the installation of the telemetry system:

1. Increased protection of the City's groundwater resources. The telemetry system will allow barrier engineers to monitor seawater intrusion more closely.
2. Reduced traffic and automobile emissions from LACDPW vehicles. The need to collect manual measurements will be significantly reduced as sensors will relay information directly to the LACDPW headquarters building.
3. Reduced visual impact to greenway by LACDPW activities. The telemetry system will result in a significant reduction in the number of trips LACDPW personnel will need to make to the injection and observation wells.
4. Possible reduction in amount of water injected. The telemetry system will allow barrier engineers to operate in a more efficient manner.
5. Installation of a conduit for a fiber optic cable. During its regular meeting on November 19, 2002, the Manhattan Beach City Council approved the installation of the WCBBP telemetry system with the condition that LACDPW would reimburse the City for the cost of materials associated with installing a four-inch conduit for the City's future use. The conduit has already been installed and LACDPW has reimbursed Manhattan Beach as agreed.




West Coast Basin Barrier Project Telemetry System Conduit Alignment



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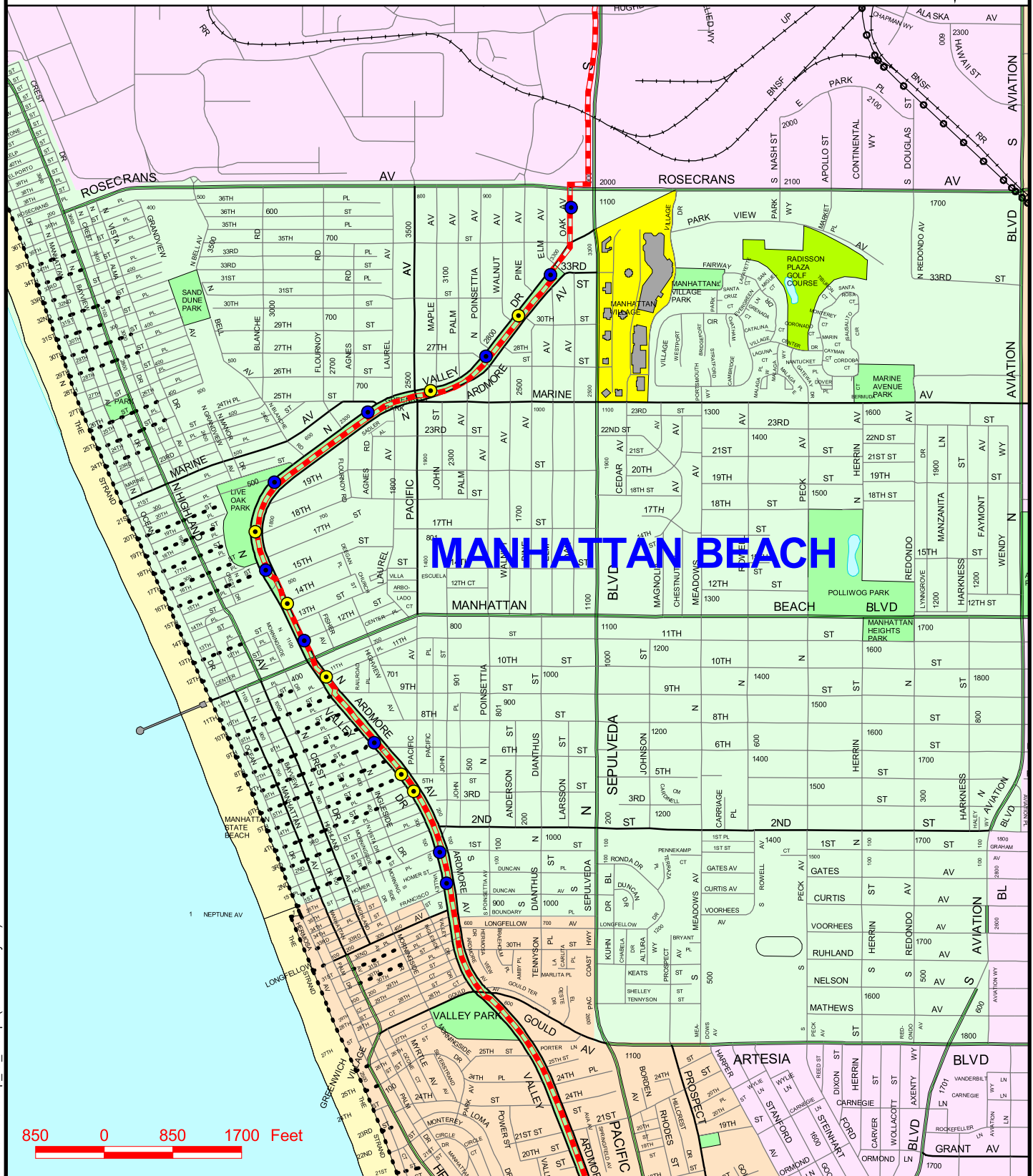
LEGEND

 Proposed WCBBP Telemetry Conduit Alignment

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West Coast Basin Barrier Project Telemetry System Conduit Alignment



MANHATTAN BEACH

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- LEGEND**
-  Proposed WCBBP Telemetry Conduit Alignment
 -  WCBBP Injection Well Location
 -  WCBBP Observation Well Location

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MCU CABINET LOCATION

INJECTION WELL 5R

(Along Oak Street 600 ft from Greenway)



BEFORE



AFTER

MCU CABINET LOCATION

INJECTION WELL 6B

(Inside existing chain-link fence near intersection of 12th Street and Ardmore Avenue)



BEFORE



AFTER

MCU CABINET LOCATION

INJECTION WELL 6I2

(On existing paved area adjacent to Valley Boulevard between 1st Street and Francisco Street)



BEFORE



AFTER