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**Appendix D    EIP Water/Wastewater  
Technical Report**

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**Draft**

# Water and Wastewater Technical Report Newland Street Residential Project EIR



***Prepared for:***

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February 10, 2006



# NEWLAND STREET RESIDENTIAL PROJECT

## Water & Wastewater Technical Report

Prepared for  
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# WATER SUPPLY & WASTEWATER TECHNICAL REPORT

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## INTRODUCTION

This technical report evaluates the anticipated potable water supply and demand of the proposed project, the anticipated wastewater (sewer) generation of the proposed project, and capacity of the existing water supply and wastewater infrastructure to serve the proposed project based upon current and future demands. Water demand and wastewater generation rates are calculated based upon the proposed project densities. In addition, overall water supply and wastewater service improvements or possible capacity limitations are identified. Data cited in this report are derived from the City of Huntington Beach 2005 Water Master Plan Update (WMP), the 2000 Urban Water Management Plan Update (UWMP), and the City of Huntington Beach 2003 Citywide Sewer Master Plan.

## Project Description

The Newland Street Residential Project (proposed project) site is located at 21471 Newland Street in the City of Huntington Beach (refer to *Figure 1*). The project site is approximately 23.1 gross acres, located south of Lomond Drive, west of Newland Street, and north of the terminus of Hamilton Avenue. The proposed project would involve the conversion of a former industrial site to a residential development with 204 multi-family residential units, as well as a 2-acre public park. The project site was formerly used as an oil pipeline and storage tank terminal, for which decommissioning and remediation has been completed. A portion of the site is currently operating as a recreational vehicle and boat storage facility, which would be removed and replaced with the proposed new uses. Implementation of the 204 multi-family residential units would create an additional demand upon the City of Huntington Beach (City) domestic water distribution system as well as existing wastewater conveyance and regional treatment systems.

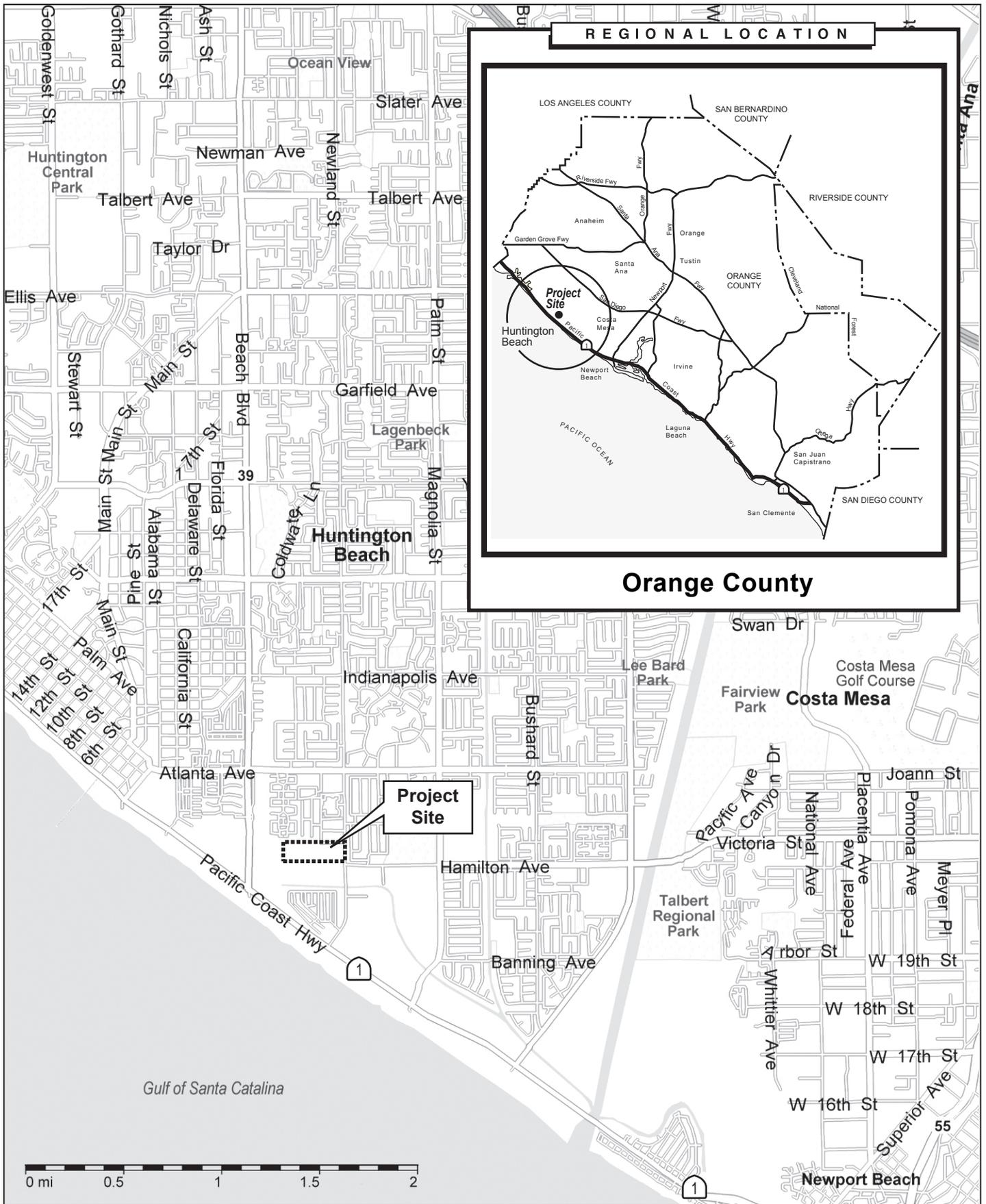
Refer to *Figure 2* for a display of the project site and location of surrounding land uses.

## EXECUTIVE SUMMARY

- Implementation of the proposed project is anticipated to have a water demand of approximately 0.078 million gallons per day (mgd), which would represent approximately 3.6 percent of the City's anticipated increase over 2005 conditions,<sup>1</sup> and only 0.22 percent of the City's estimated total water demands for year 2025. Although the increase in demand for residential uses was not previously assumed to occur on the former industrial site, the City's water supply surplus during average day demands would be sufficient to serve the proposed project's demands. Thus, the projected water demand would be within the existing water supply projections for the City.

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<sup>1</sup> The City's average annual demand is estimated to increase by approximately 2.16 mgd between 2005 and 2025; thus  $0.078 \text{ mgd} / 2.16 \text{ mgd} = 0.036 \times 100 = 3.6 \text{ percent}$



**FIGURE 1**  
**Project Vicinity & Regional Location Map**

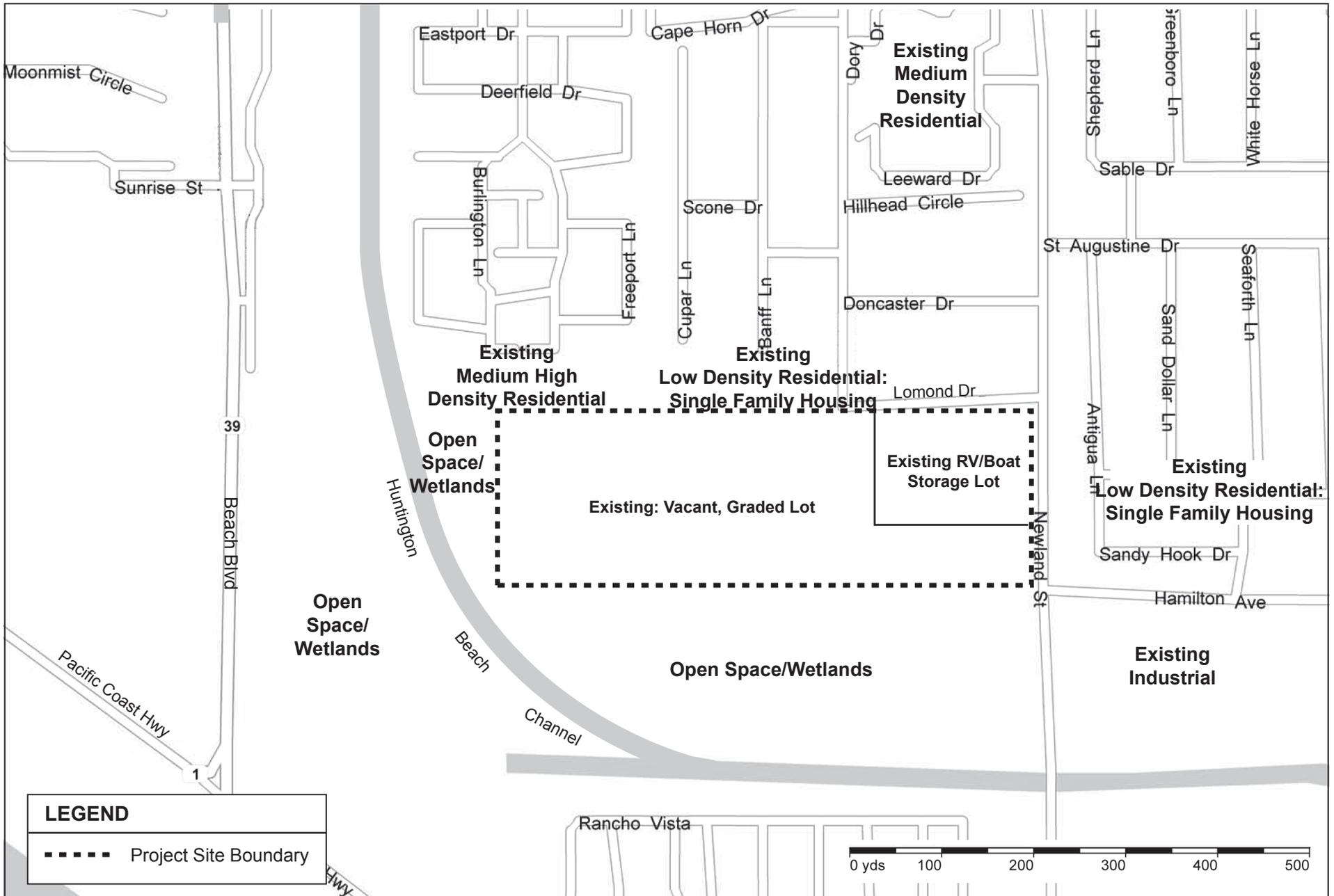
Source: Microsoft Trips and Streets, 2004

City of Huntington Beach



11034-00





**LEGEND**

----- Project Site Boundary



**FIGURE 2**  
**Site and Surrounding Land Uses**

11034-00 **Source:** Microsoft Trips & Streets, 2004

Not to Scale



City of Huntington Beach

- The EIR should detail the coordination with the City of Huntington Beach required to ensure long-term provision of water supply for the proposed project. In order to construct the project, the project applicant shall receive a “will serve” letter from the City, confirming that the City commits to providing water service for the project.
- Wastewater generated by the proposed project would be adequately served by existing facilities, and no new offsite wastewater facilities or expansion of existing offsite facilities would be required to serve the project.
- The EIR shall detail the coordination with the Orange County Sanitation District required to ensure long-term provision of wastewater treatment service for the proposed project. In order to construct the project, the project applicant shall receive a “will serve” letter from the Sanitation District, confirming that the Sanitation District commits to providing wastewater treatment service for the project and that the Sanitation District has adequate treatment capacity available over the long-term to serve the project.

## **BACKGROUND**

### **Potable Water**

The Utility Division of the City of Huntington Beach’s (City) Department of Public Works provides potable water to the City, and would serve the proposed project site.

### **Water Sources**

The City’s existing sources of water supply consist of nine groundwater wells that pump directly into the system, three imported water connections, and three emergency connections with neighboring cities.<sup>2,3</sup> Groundwater production from the nine wells varies from approximately 500 gallons per minute (gpm) to approximately 3,400 gpm, with total production capacity rated at approximately 25,050 gpm (36 mgd).<sup>4</sup> Typically, the City operates the wells at approximately 85 percent of the total well capacity. However, future (2025) well capacities are estimated to be approximately 15 percent less than existing capacities due to age, and thus, would have a capacity of approximately 20,880 gpm (30 mgd).<sup>5</sup>

The three imported connections are with Metropolitan Water District of Southern California (MWD).<sup>6</sup> One connection (OC 9) enters Huntington Beach at Newland Street and Edinger Avenue, and has the capacity to deliver 6,300 gpm into the water system. The second connection (OC 35) is located at Springdale Street

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<sup>2</sup> City of Huntington Beach, Public Works Utilities Division, Consumer Confidence Report, 2005.

<sup>3</sup> City of Huntington Beach, Water Master Plan Update, 2005.

<sup>4</sup> City of Huntington Beach, Water Master Plan Update, 2005.

<sup>5</sup> City of Huntington Beach, Water Master Plan Update, 2005.

<sup>6</sup> City of Huntington Beach website, [http://www.ci.huntington-beach.ca.us/CityDepartments/public\\_works/Wateroperations/Supply/](http://www.ci.huntington-beach.ca.us/CityDepartments/public_works/Wateroperations/Supply/), accessed August 17, 2005.

and Glenwood Drive with a capacity of 9,000 gpm. The third connection (OC 44) enters Huntington Beach at the Santa Ana River and Adams Avenue with a capacity of 6,700 gpm.<sup>78</sup>

Similar to other water supply agencies, the City estimates a range of different future water demands, including average-day and maximum-day, in order to adequately plan for anticipated growth. Average-day demands account for variations in water use over a period of time due to a variety of potential factors such as weather patterns and conservation measures, whereas maximum-day demands project the greatest anticipated amount of water that would be used per day.

As a member agency of Orange County Water District (OCWD), the City is entitled to groundwater from the Orange County Groundwater Basin. The City and other basin producers pay a Replenishment Assessment (RA) to OCWD for all groundwater produced up to a percentage of the producer's total water supplies to meet demands. This is called the Basin Production Percentage (BPP), which is set uniformly for all producers.

As discussed in the 2005 Water Master Plan Update, the City would generally have sufficient groundwater capacity to supply approximately 72 percent of the projected ultimate (2025) average-day demand and approximately 40 percent of the projected 2025 maximum-day demand, depending on the BPP pumping allocation. Through the City's three existing imported water connections, imported water could independently supply approximately 89 percent of the projected average-day demand in 2025, and approximately 49 percent of the projected 2025 maximum-day demand. Based on these projections, approximately 161 percent of the projected 2025 average-day demand could be met through a combination of groundwater and imported supplies; however, the combined well and imported water would provide for approximately 89 percent of the maximum-day demands projected for 2025. It is desirable to have supply equivalent to maximum-day demand although supply from reservoirs can make up for small maximum-day deficiencies.

The City maintains four potable water storage reservoirs with a total capacity of approximately 55 million gallons (mg). Overmyer Reservoir is located at Huntington Street and Garfield Avenue, and has a capacity of approximately 20 mg. Peck Reservoir is located at Springdale Street and Glenwood Drive and has a capacity of approximately 17 mg. Edwards Hills Reservoir has a capacity of approximately 9 mg. In addition, Springdale Reservoir is the newest facility and has a capacity of approximately 9 mg.<sup>9</sup> As an emergency backup supply, the City also maintains emergency water connections with the cities of Fountain Valley, Seal Beach, and Westminster.<sup>10</sup>

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<sup>7</sup> City of Huntington Beach, Water Master Plan Update, 2005.

<sup>8</sup> City of Huntington Beach Public Works Department, 2005. Written communication, 16 September.

<sup>9</sup> City of Huntington Beach, written communication, September 16, 2005.

<sup>10</sup> City of Huntington Beach website, [http://www.ci.huntington-beach.ca.us/CityDepartments/public\\_works/Wateroperations/Supply/](http://www.ci.huntington-beach.ca.us/CityDepartments/public_works/Wateroperations/Supply/), accessed August 17, 2005.

## Supply

Derived from a combination of local groundwater and imported water, water at the proposed project site would be served by the City. Historically, the City has utilized groundwater more than imported water to satisfy water system demands. Currently, the City receives approximately 64 percent of its water supply from groundwater wells accessing the Santa Ana River groundwater basin and 36 percent imported water from the MWD through the Municipal Water District of Orange County (MWDOC).<sup>11</sup> These percentages reflect adjustments for in-lieu storage programs whereby the City, in cooperation with the OCWD and other regional groundwater producers, receive import water in an effort to allow the groundwater basin to recharge. Actual percentages of groundwater and imported water vary somewhat on an annual basis depending on to what extent these programs are implemented.

## Demand

The City's 2005 Water Master Plan Update provides water use factors and demands for 2004/05 and 2024/25. In order to provide the most conservative analysis, this report uses the water use factors for 2024/25. The medium density residential water demand is approximately 3,496 gallons per acre per day (gpad), and the open space (parks) water demand is approximately 2,285 gpad. With approximately 21.1 acres associated with the residential development and the two-acre public park, the estimated water demand for the proposed project would be approximately 78,336 gpd (0.078 mgd).

In addition, for purposes of meaningful comparison, the estimated future water demand use factor for industrial uses is approximately 1,480 gpad. Thus, if the project site were to remain zoned for industrial uses, it is anticipated that the 23.1-acre site could have a water demand of approximately 34,188 gpd (0.03 mgd).

As discussed in the Water Master Plan, the City has reached near full development and water usage for the City's service area has been relatively stable over the past five years. *Table 1*, below, shows historic potable water production rates in the City.

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<sup>11</sup> City of Huntington Beach, Water Master Plan Update, 2005

<b>Table 1 City of Huntington Beach Historic Potable Water Production</b>	
<i>Year</i>	<i>Volume (AF)</i>
91/92	32,023
92/93	33,595
93/94	33,515
94/95	34,064
95/96	35,099
96/97	36,286
97/98	34,057
98/99	36,143
99/00	35,397
00/01	35,002
01/02	35,045
02/03	33,502
03/04	34,521
<b>Average</b>	<b>34,481</b>

SOURCE: City of Huntington Beach, 2005 Water Master Plan Update., Table 2-3

Although water production has been fairly consistent in the past, the City's future average water demands are projected to increase approximately 6.4 percent as a result of planned development and re-development and the projected increase in the population density.<sup>12</sup> Specifically, year 2025 average day water demand for the City is projected to be approximately 24,760 gpm (35.65 mgd), which is approximately 6.4 percent greater than the City's existing (2005) average day water demand of approximately 23,260 gpm (33.49 mgd).<sup>13</sup> Thus, the City's water demand in 2025 is anticipated to increase by approximately 2.16 mgd over existing conditions.

The City anticipates an average annual potable water supply in 2025 of approximately 40,570 gpm, or 58 mgd. Consequently, groundwater production plus the City's imported water capacity is sufficient to provide for average annual demands in 2025 of approximately 35.65 mgd. In addition, the combined water supplies would also be more than sufficient to provide for the projected average day demands in 2025.

## **Infrastructure**

There are approximately 577 miles of transmission and distribution piping in the water system with sizes ranging from four to 42 inches in diameter. The majority of the piping in the system is made of asbestos cement (AC) and should have a long remaining service life.

<sup>12</sup> City of Huntington Beach, 2005 Water Master Plan Update.

<sup>13</sup> City of Huntington Beach, 2005 Water Master Plan Update, p. 2-17

Specific to the project area, existing infrastructure surrounding the project site includes a 12-inch water main line in Newland Street, a 12-inch water main in Hamilton Avenue, and a 12-inch water main in Atlanta Avenue. In addition, there is also an existing six-inch water line in Lomond Drive, directly north of the project site. Implementation of the proposed development would require the construction of an on-site public water system, which would then connect to the existing 12-inch line in Newland Street. Fire, domestic, and irrigation water demands required by the development would be supplied primarily from the existing 12-inch water lines along Newland Street, Hamilton Avenue, and Atlanta Avenue.

As discussed in the WMP, there are two recommended improvements to the City's water system that would provide additional flexibility to the City's water system. The first improvement (#1 on Figure ES-2 of the WMP) consists of the construction of a 10 million gallon (mg) reservoir and 11,000 gallon per minute (gpm) booster pump station (BMP) to be located southeast of the project site (between Newland and Magnolia, south of Hamilton) to provide emergency storage and supply for the area south of the Newport-Inglewood Fault and east of Bolsa Chica. The second recommended improvement is to construct approximately 10,400 linear feet (lf) of a 16- to 24-inch transmission main to convey water from the proposed booster pump station located southeast of the project site to the Downtown transmission main loop and the southeast area of the City. These transmission mains run the length of Newland Street from south of the project site to Atlanta Avenue. Presently, these projects are on hold due to planning issues the City is currently working through; however, the City's existing system could successfully meet the proposed water demands for the project without these future facilities. When these improvements are implemented in the future, the additional flexibility to the water system would benefit the surrounding area, including proposed project.

## **Fire Flow**

Fire flow is the flow rate of a water supply that is available for fire fighting at a residual pressure of 20 pounds per square inch (psi). City fire flow requirements are set by the City Fire Department and are based on the current Uniform Fire Code (UFC).

The City of Huntington Beach Fire Department (HBFD) requires specific fire-flow rates at each project site and specifies the residual pressure necessary at on-site fire hydrants. Due to the possibility of a fire occurring on any given day, the City's existing water system satisfies maximum-day demands occurring elsewhere throughout the water system and would also satisfy the required flow at the project site.

## **Recycled Water**

The City currently does not have recycled water infrastructure available to serve this project.

## **Wastewater**

The City owns, operates, and maintains a wastewater collection system that includes gravity pipelines, manholes, lift stations and force mains. This system serves over 95 percent of the areas within the City, and

several small areas within the Cities of Westminster, Seal Beach, Newport Beach, and Fountain Valley. The City's wastewater system would provide service to the proposed project.

## **System Infrastructure**

The City's wastewater collection system is comprised of approximately 360 miles of wastewater pipelines ranging in size from six to 30 inches in diameter. Approximately 85 percent of the City's wastewater pipelines are eight inches in diameter. Due to the City's generally flat conditions, the City also operates and maintains twenty-seven lift stations, varying in capacity from approximately 80 gpm to 1,350 gpm. These facilities lift sewage from low points in the collection system to manholes at higher locations.<sup>14</sup>

Orange County Sanitation District (OCSD) is responsible for receiving, treating, and disposing of the wastewater generated in central and northwest Orange County, including the City's wastewater. In this regional management capacity, OCSD owns, operates and maintains the majority of the "backbone" wastewater collection trunk pipelines. OCSD's regional wastewater pipelines generally range in size from 21 to 108 inches in diameter and collect the City's wastewater at multiple connections. In addition to these collection facilities, OCSD has two lift stations and Wastewater Treatment Plant No. 2, which is located within the City and described in detail below. As such, the City's local system generally discharges to larger OCSD facilities to convey wastewater to the local treatment plant. Given the growth within OCSD's service area, OCSD is currently upsizing a number of collection system pipelines to provide additional capacity. One of these key facilities is the 108-inch Bushard Trunk Sewer, which runs through the City to OCSD's Plant No. 2.<sup>15</sup>

Although no sewer lines are presently located on the project site, OCSD sewer lines are located adjacent to the project site in Newland Street.

## **Treatment Plants**

OCSD's Treatment Plant No. 2 is adjacent to the Santa Ana River and about 1,500 feet from the coast. Treated effluent is discharged through a 120-inch diameter ocean outfall that extends approximately four miles into the Ocean. The existing headworks facility located at Treatment Plant No. 2 receives wastewater from five major trunk sewers: Bushard, Miller-Holder, Coast, Newport, and the Interplant pipeline that conveys influent flows from Plant No. 1 to Plant No. 2.<sup>16</sup> Plant capacity is approximately 174 million gallons per day (mgd) of wastewater, with a historical flow of 90 mgd. According to the most recent available data, average daily flow from Huntington Beach is estimated at approximately 29 mgd. Approximately 33 percent of the influent receives secondary treatment through an activated sludge system. All of the effluent from this plant is discharged to the ocean disposal system.<sup>17</sup>

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<sup>14</sup> City of Huntington Beach, Citywide Sewer Master Plan, 2003.

<sup>15</sup> City of Huntington Beach, Citywide Sewer Master Plan, 2003.

<sup>16</sup> Orange County Sanitation District, Headworks Replacement Project Draft Subsequent EIR, January 2004.

<sup>17</sup> City of Huntington Beach, Urban Water Management Plan Update, 2000.

OCSD is in the process of rehabilitating the existing treatment facilities and constructing new facilities at both reclamation plants, including Plant No. 2. Specifically, OCSD plans to upgrade both of its treatment plants to meet secondary treatment standards for projected 2020 effluent flow, with a headworks replacement project. The headworks serves as the initial point of entry for all influent flow into Treatment Plant No. 2. The new headworks would have a 340 mgd peak wet weather flow capacity, but would not increase the existing treatment capacity of Plant No. 2.<sup>18</sup>

## **Wastewater Reduction Efforts**

The City uses recycled water from OCWD's Green Acres Project, which is produced from OCSD's recycled water. Because wastewater generation is directly related to water use, efforts that focus on the reduction in water use also decrease wastewater generation.

## **ANALYSIS**

This section evaluates the potential impacts related to the Newland Street Residential Project on the City's water supplies and treatment facilities, as well as the existing wastewater infrastructure by identifying anticipated demand and existing and planned infrastructure availability in the City of Huntington Beach.

## **Water Supply**

Development under the proposed Newland Street Residential Project would result in the addition of approximately 204 multi-family residential units within the City. This new development will increase demands for domestic water services by approximately 78,336 gpd (0.078 mgd).

The City's potable water demands are projected to be 24,760 gpm (35.65 mgd) at ultimate buildout (2025). The estimated 0.078 mgd water demand that would result from implementation of the proposed development would represent approximately 0.22 percent of the City's total water demand in 2025. In addition, as the City's water demand is anticipated to increase by approximately 2.16 mgd by 2025 over existing conditions, the estimated project demand of 0.078 mgd would represent approximately 3.6 percent of this anticipated increase.

The difference between utilizing the project site for residential (0.078 mgd) rather than industrial uses (0.034 mgd) would result in an increased water demand of approximately 44,148 gpd (0.044 mgd). Because the project site was zoned for industrial uses, it can be assumed that this 0.044 mgd increase in water demand was not previously planned for in the City's water projections. However, as discussed previously, the combined groundwater and imported water supply would be sufficient to provide approximately 161 percent (a total supply of 39,850 gpm [57.38 mgd]) during average day demands for year 2025.<sup>19</sup> Thus, the City's existing system would have an additional water supply of approximately 15,090 gpm (21.7 mgd) after meeting the average day demands for year 2025 of approximately 24,760 gpm (35.65

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<sup>18</sup> Orange County Sanitation District, Headworks Replacement Project Draft Subsequent EIR, January 2004.

mgd). Although future groundwater and imported water supplies may become limited during maximum day demands as the City's supplies would only cover approximately 89 percent of demands, it is likely that the City would need to drill another well or two in order to provide sufficient service to customers. As it is assumed that this would be carried out prior to deficient supplies, and because implementation of the proposed project would not increase the City's water demands substantially and would not be considered a limiting factor for a residential development.

The EIR should detail the coordination with the City of Huntington Beach required to ensure long-term provision of water supply for the proposed project. In order to construct the project, the project applicant shall receive a "will serve" letter from the City, confirming that the City commits to providing water service for the project.

New onsite domestic water mains would be constructed as part of the development of the Newland Street Residential Project in order to serve the proposed residential units and public park. It is assumed that future development would adhere to existing laws and regulations, and that the water conveyance infrastructure would be sized appropriately for the future development. In addition, separate irrigation water service will be constructed as part of the development of the proposed project, in order to provide irrigation for public landscaped areas such as the two-acre public park and common open space areas.

## **Wastewater Generation and Treatment**

According to the Citywide Sewer Master Plan, the recommended 2002 wastewater generation factor for Medium Residential is 3,200 gallons per acre per day (gpad), while the wastewater generation factor for Open Space is 200 gpad. Thus, with residential development associated with approximately 21.1 acres and the two-acre public park, the proposed project's wastewater generation would be estimated at approximately 67,920 gpd (0.068 mgd). The new wastewater discharges from the proposed project would put additional demand upon regional treatment facilities.

The remaining capacity at Treatment Plant No. 2 is approximately 84 mgd. As such, the treatment plant would have more than adequate capacity to treat the additional 0.068 mgd of wastewater that would be generated from the proposed development. The proposed project would represent far less than one percent of the remaining capacity, and would only represent an increase in the City's average daily flow by approximately 0.2 percent. Consequently, construction or expansion of wastewater treatment facilities is not anticipated to be necessary to serve the project's needs. However, the applicant shall receive a "will serve" letter from OCSD in order to construct the project, meaning that the OCSD shall confirm that adequate treatment capacity is available over the long-term to serve the project and commit to provide treatment service. In addition, the proposed project would be required to adhere to existing laws and regulations associated with wastewater discharge and treatment requirements.

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<sup>19</sup> City of Huntington Beach, 2005 Water Master Plan Update, Table 3-6.

Similar to water distribution systems, the proposed project would require the construction of new wastewater collection systems within the project site. Installation of these lines would occur during the construction of streets within the project site. Individual water and wastewater connections to residences would occur during their construction. Construction of the wastewater collection systems would adhere to existing laws and regulations, and the infrastructure would be sized appropriately for the future development.

## **CONCLUSIONS**

Implementation of the proposed development would not overburden the City's future water supplies, as the projected demand would result in approximately 3.6 percent of the City's total increase in water demands anticipated through 2025, and only 0.22 percent of the City's estimated total water demands for year 2025. As such, the City's water supply could adequately accommodate the proposed project's estimated water demand of 0.078 mgd. This issue and supporting analysis should be discussed in the EIR to be prepared for the proposed project.

The additional wastewater generated by the proposed development would be accommodated by existing facilities, and implementation of the proposed project would not require additional wastewater treatment facilities or the expansion of existing facilities. This issue and supporting analysis should be discussed in the EIR to be prepared for the proposed project.