



# Technical Memorandum

## City of Daly City Wastewater Collection System Hydraulic Modeling Support

**Subject:** Collection System Flow Study for the Updated Serramonte Views Development  
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**Date:** December 27, 2016 (revised March 7, 2017)  
**Reference:** 0120-006.08

The proposed Serramonte Views Development, located on the south side of Serramonte Boulevard between Gellert and Callan Boulevards in Daly City, has recently been updated to include a 323-unit residential complex in three buildings and a 176-room hotel with onsite parking. As shown in the table below, the development would contribute an estimated additional average base wastewater flow (BWF) of 88,660 gallons per day (gpd) based on flow factors used in the City’s 2009 Collection System Capacity Evaluation and 2015 Model Update. The development location is tributary to a previously modeled 10-inch sewer in Serramonte Blvd., which flows to a newly upsized 12-inch HDPE section before discharging into a 15-inch trunk sewer in Gellert Blvd. (see figure on the following page). The flow from the Serramonte Views Development was loaded to the existing 10-inch pipe in Serramonte Blvd. at manhole MH-D10-006.

The recent upsizing on Serramonte Blvd. was recommended as Project C-4 in the 2009 Capacity Evaluation and 2015 Model Update to address an identified capacity deficiency. The Serramonte Views Development will drain to the newly upsized sewer and could potentially necessitate further upsizing. To check for this, the model was run for the City’s design storm wet weather flow under future conditions (with the Serramonte Views Development included), as well as the future scenario with all proposed solutions (all other capacity improvements identified in the 2009 and 2015 studies) included. (Note that the future scenarios include some additional development as previously identified in the Model Update).

**Estimated Development Loads**

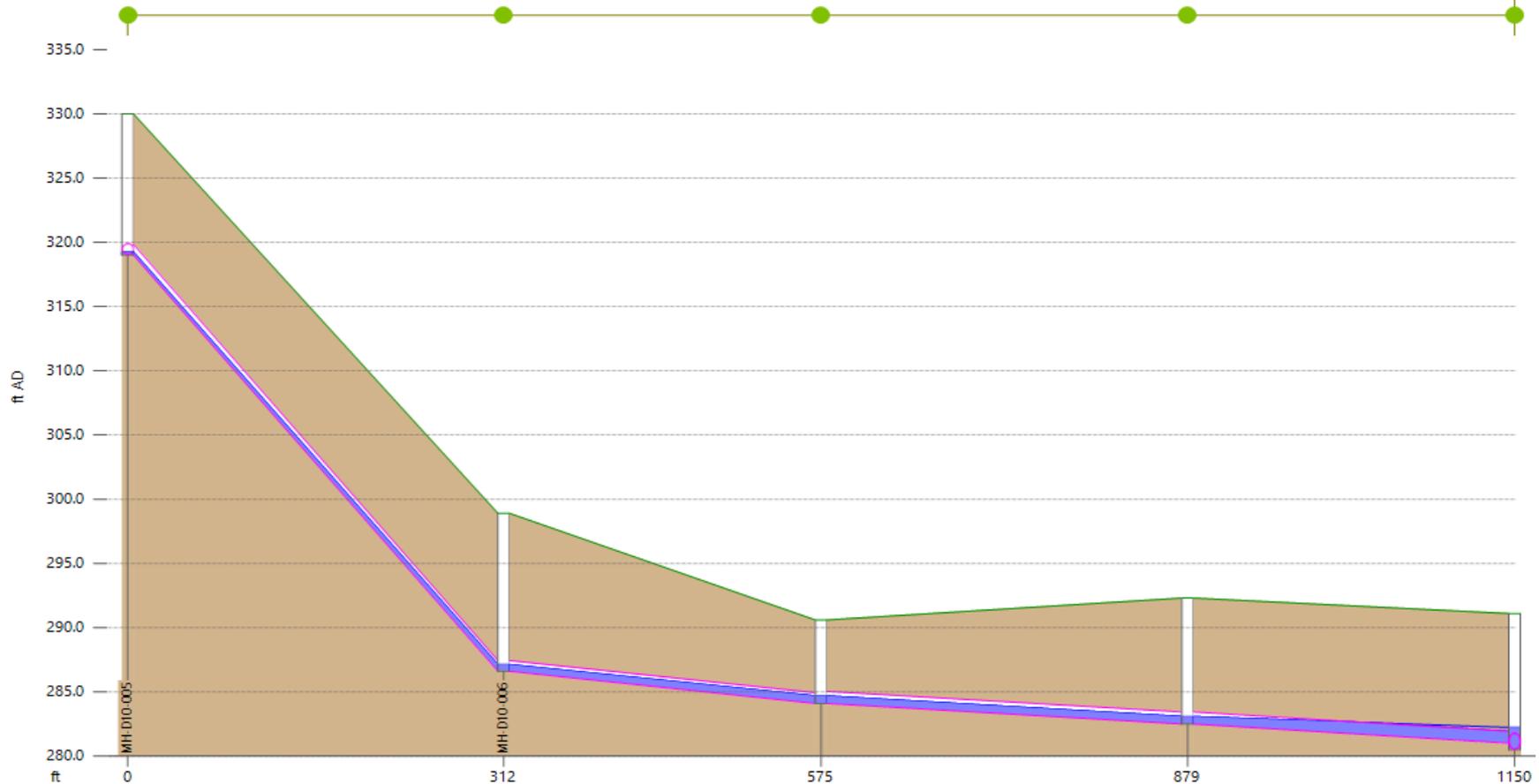
| Development Type | Units                       | Quantity | Unit Flow Factor (gpd/Unit) | Estimated BWF (gpd) |
|------------------|-----------------------------|----------|-----------------------------|---------------------|
| Residential      | Multi-family Dwelling Units | 323      | 220                         | 71,060              |
| Hotel            | Rooms                       | 176      | 100                         | 17,600              |
| <b>Total</b>     |                             |          |                             | <b>88,660</b>       |

# Location Map



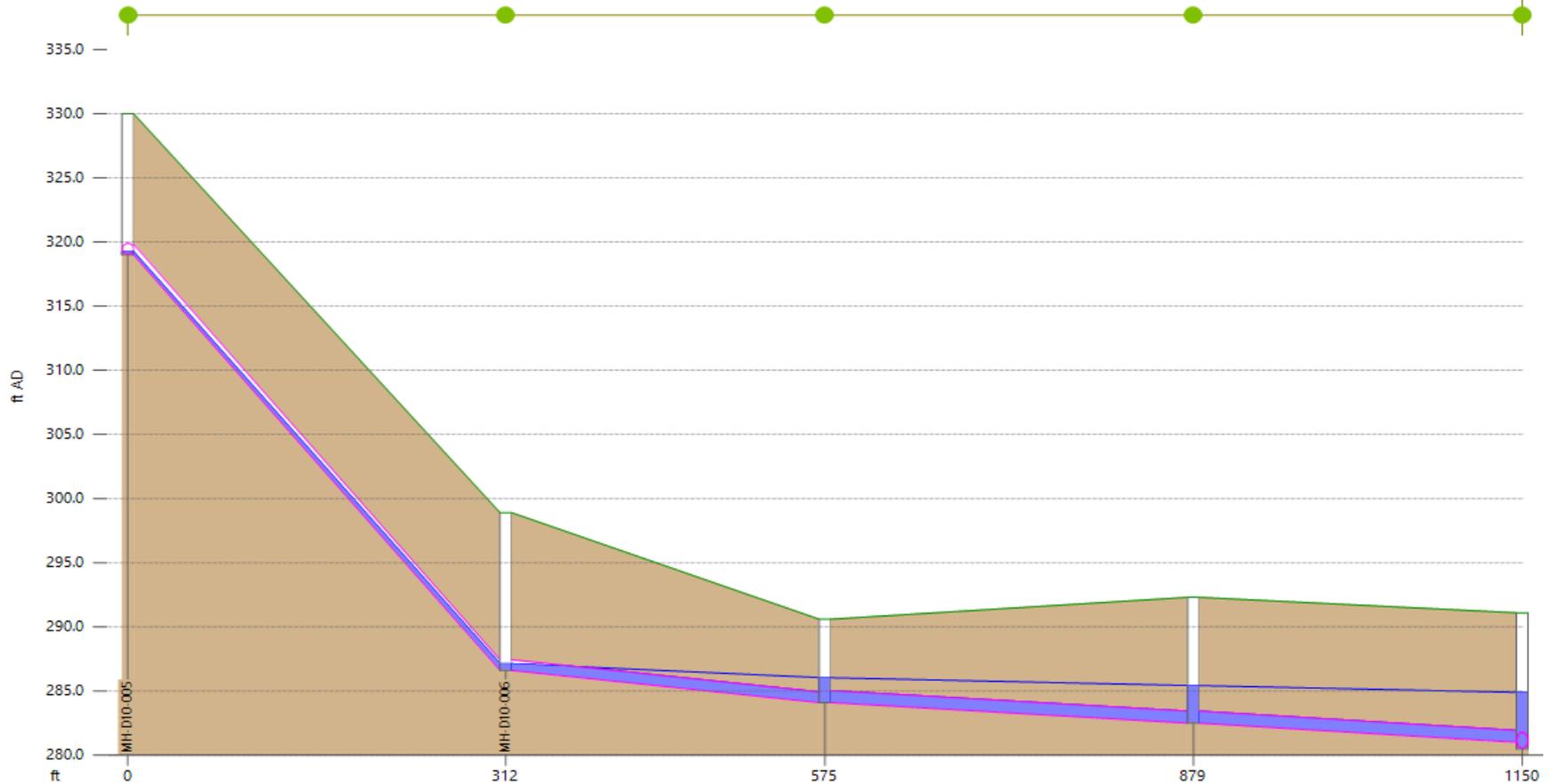
The model results profiles are attached. The model indicates that the implantation of Project C-4, upsizing of the sewer from MH-D10-007 to MH-D10-009 to a 12-inch outer diameter HDPE (assuming SDR-17 pipe with 11.16-inch inside diameter), provides capacity to handle the projected peak wet weather flow (PWWF). These results, assuming downstream projects are also implemented, are presented in Profile 1 below. Note, however, that until Project C-5 is implemented downstream (see Location Map), there could still be some backwater and surcharge into the Serramonte Blvd. sewer under design storm PWWF conditions (Profile 2).

**Profile 1: Serramonte Blvd. sewer with Project C-4 implemented, assuming downstream improvements (incl. Project C-5)**



|                |            |              |            |              |            |              |            |              |            |
|----------------|------------|--------------|------------|--------------|------------|--------------|------------|--------------|------------|
| Link           |            | MH-D10-005.1 |            | MH-D10-006.1 |            | MH-D10-007.1 |            | MH-D10-008.1 |            |
| length (ft)    |            | 311.8        |            | 263.2        |            | 304.0        |            | 271.1        |            |
| width (in)     |            | 10.0         |            | 10.0         |            | 11.2         |            | 11.2         |            |
| us inv (ft AD) |            | 319.000      |            | 286.600      |            | 284.100      |            | 282.500      |            |
| ds inv (ft AD) |            | 286.600      |            | 284.100      |            | 282.500      |            | 281.000      |            |
| grad (%)       |            | 10.391       |            | 0.950        |            | 0.526        |            | 0.553        |            |
| pfc (MGD)      |            | 4.57         |            | 1.38         |            | 1.39         |            | 1.43         |            |
| surc           |            | 0.64         |            | 0.71         |            | 0.63         |            | 1.00         |            |
| DS flow (MGD)  |            | 0.8169       |            | 0.9785       |            | 0.9783       |            | 1.1064       |            |
| Node           | MH-D10-005 |              | MH-D10-006 |              | MH-D10-007 |              | MH-D10-008 |              | MH-D10-009 |
| ground (ft AD) | 330.000    |              | 298.900    |              | 290.600    |              | 292.300    |              | 291.100    |
| flood dep (ft) | -10.748    |              | -11.764    |              | -5.907     |              | -9.214     |              | -8.873     |

Profile 2: Serramonte Blvd. sewer with Project C-4 implemented, without downstream improvements



| Link           | MH-D10-005.1 | MH-D10-006.1 | MH-D10-007.1 | MH-D10-008.1 |            |
|----------------|--------------|--------------|--------------|--------------|------------|
| length (ft)    | 311.8        | 263.2        | 304.0        | 271.1        |            |
| width (in)     | 10.0         | 10.0         | 11.2         | 11.2         |            |
| us inv (ft AD) | 319.000      | 286.600      | 284.100      | 282.500      |            |
| ds inv (ft AD) | 286.600      | 284.100      | 282.500      | 281.000      |            |
| grad (%)       | 10.391       | 0.950        | 0.526        | 0.553        |            |
| pfc (MGD)      | 4.57         | 1.38         | 1.39         | 1.43         |            |
| surc           | 0.64         | 1.00         | 1.00         | 1.00         |            |
| DS flow (MGD)  | 0.8169       | 0.9785       | 0.9876       | 1.1272       |            |
| Node           | MH-D10-005   | MH-D10-006   | MH-D10-007   | MH-D10-008   | MH-D10-009 |
| ground (ft AD) | 330.000      | 298.900      | 290.600      | 292.300      | 291.100    |
| flood dep (ft) | -10.748      | -11.763      | -4.553       | -6.866       | -6.201     |