

TECHNICAL MEMORANDUM

To: TJ Gamble, SCM Avila Beach Partners, LLC
From: Elizabeth Caliva and Jane Gray, Dudek
Subject: Cottage Parcel Water/Sewer/Recycled Water Service Update from July 10, 2017
Site Visit
Date: July 19, 2017

Purpose

This Technical Memorandum (TM) provides an assessment of the water, sewer and recycled water service to the Cottage Parcel in Avila Beach, California based on information gathered on a July 10, 2017 meeting and site visit by Jane Gray and Chris Gabriel, P.E., of Dudek and Rick Koon of the San Miguelito Mutual Water Company (SMMWC). At this meeting, Mr. Koon discussed the SMMWC's options for tie-in locations and infrastructure improvements associated with the water, sewer and recycled water facilities for the Cottage Parcel. This TM documents the results of the meeting, provides budget-level cost estimates for the SMMWC's requests for utility tie-ins and infrastructure improvements and provides the client with potential next steps for moving forward with the project.

Cost Assumptions

All costs included herein are budget-level costs. The following assumptions were used to calculate the budget-level costs provided:

- Pipeline construction cost of \$15 per inch diameter per lineal foot (LF); and
- Contingency of 30 percent.

Recycled Water Service

The SMMWC would prefer the Cottage Parcel project to use recycled water, rather than grey water, for the irrigation of onsite landscaping. The existing wastewater treatment plant does not currently produce recycled water and, as such, there is no existing transmission main in place. However, the former 6-inch PVC forcemain from Lift Station No. 3 to the existing wastewater treatment plant (WWTP) was abandoned in place and could likely be repurposed as a recycled water transmission pipeline. Assuming the condition of the existing pipeline was acceptable, the Cottage Parcel could connect into this line in Wild Cherry Canyon Road and install a 2,500 LF extension to supply the Cottage Parcel (**Figure 1**). An additional 2,500 LF would be required to extend the line to supply the existing golf course.

The Cottage Parcel is projected to use an estimated 5.9 acre-feet per year (AFY) (or 5,000 gallons per day) of water for irrigation, to be fed by either a grey water system or, as preferred by SMMWC, recycled water. Assuming a typical peaking factors, a 2- or 3-inch line would be sufficient to provide recycled water service to the Cottage Parcel. However, the recycled waterline constructed would likely be sized for flows to the golf course property, estimated at 6-inch diameter.

A budgetary cost for the installation of 2,500 LF of 6-inch PVC is approximately \$300,000. The installation of the full 5,000 LF would cost approximately \$600,000.

As a benefit to the Cottage Parcel, using recycled water for irrigation would reduce the project's estimated water use by 5.9 AFY and reduce the total estimated water usage to 7.9 AFY, well under the 14 AFY limit. It would also allow the project to plant more vegetation onsite for irrigation with recycled water.

A technical hurdle for the SMMWC, however, would be producing water for a single, low-use customer, such as the Cottage Parcel. Without a large users, such as the golf course, it is likely cost prohibitive for the SMMWC to produce recycled water; therefore, the grey water system will be necessary until such a time when recycled is available.

Subsequent discussions with Rick Koon of the SMMWC concluded that the SMMWC does not think the burden of the entire recycled water line should fall on the Cottages Parcel; however, they would like the Cottage Parcel to contribute a specific percentage or dollar amount toward the construction of the recycled waterline extension for a time when the production and distribution of recycled water at SMMWC made sense.

Water Service

Water service pipelines are sized based on maximum estimated flow to a property, which is typically determined by the fire flow requirement. As a sprinklered property, anticipated fire flow is 1,500 gallons per minute, which would likely require an 8-inch waterline. However, the typical (non-emergency) water usage at the site is very low, therefore if served by a dead-end 8-inch line, the Cottage Parcel may have water quality issues. To remedy this, the Parcel would likely want to install separate service lines for water (4-inch) and fire (8-inch).

The SMMWC would like the Cottage Parcel to fund a waterline extension from a tie-in on Ana Bay Road near the tennis courts through the Cottage Parcel and north to Tank 200 to provide a loop in the water distribution system. As shown in **Figure 2**, the loop includes the installation of 2,000 LF of new 8-inch pipe to serve the Cottage Parcel, 1,600 LF of new 8-inch pipe to loop the line to Tank 200 and the replacement of 900 LF of existing 8-inch AC pipe in Ana Bay Rd and the Cottage Parcel access road that serves the San

Luis Bay Inn due to its age, condition and unknown location. The total length to install the full loop is approximately 4,500 LF.

Due to the low usage of water at the project site, a looped system would solve the issue of poor water quality at the Cottage Parcel site without having to construct two separate service lines. The budget-level cost for the installation of this 8-inch loop is approximately \$700,000. As a point of comparison, the cost to construct one 4-inch water service line and one 8-inch service line from the existing 8-inch AC pipe serving the San Luis Bay Inn is approximately \$350,000.

While the SMMWC does not know the hydraulic grade line (HGL) of the tanks, based on topographic elevation information and a known operating level range of 10 to 24 feet, a high water level of 394 ft and low water level of 380 ft was assumed for this analysis. This results in a maximum static pressure of approximately 54 pounds per square inch (psi) and a minimum static pressure of approximately 47 psi at the cottage located at the highest elevation in the property. A typical minimum service pressure allowed is 40 psi; thus water service pressures are anticipated to be sufficient for the project. A looped waterline would improve system pressures for the Cottage Parcel.

Sewer Service

The Cottage Parcel would convey sewage flows east and north through the existing access road via an 8-inch PVC line to the existing SMMWC collection system in Ana Bay Road. The Cottage Parcel sewer line would tie-in to an existing 8-inch sewerline just upstream of Pump Station Number 2 as shown in **Figure 3**. A budget-level cost for the 2,500 LF sewerline construction is \$400,000.

Summary and Next Steps

The following are the conclusions and recommended next steps for the Cottage Parcel:

Recycled Water:

- The SMMWC would prefer the Cottage Parcel to use recycled water when it becomes available.
- It is recommended the Cottage Parcel continue with the planning for the grey water system at the site as recycled water is currently not available and the timeframe for its availability is unknown.
- As a next step, the Cottage Parcel and SMMWC will discuss and mutually agree upon a course of action for moving forward with recycled water service (e.g. the pledge of funds toward the construction of the recycled waterline extension).

Water:

- The SMMWC is requesting the Cottage Parcel fund the looping and replacement of waterline, in addition to the facilities required to serve potable water to the Parcel.
- The additional water system improvements the SMMWC is requesting to loop the system and replace aging infrastructure would cost the Cottage Parcel an additional \$350,000.

Technical Memorandum

Cottage Parcel, Avila Beach – Water/Sewer/Recycled Water Service Project Update

Sewer:

- Sewer service to the Parcel would require an 8-inch sewerline with a tie-in just upstream of Pump Station No. 2.



Ex. Abandoned 6-inch Forcemain from WWTP Converted to RW Transmission Main

To WWTP

Wild Cherry Canyon

Proposed Extension to Cottages Parcel (Onsite)

Proposed Extension to Golf Course (Offsite)

Golf Course

Cottages Project

Ana Bay Rd

San Luis Bay Inn

Avila Beach Dr

**Figure 1
Recycled Water Service**

Legend

▭ Parcels

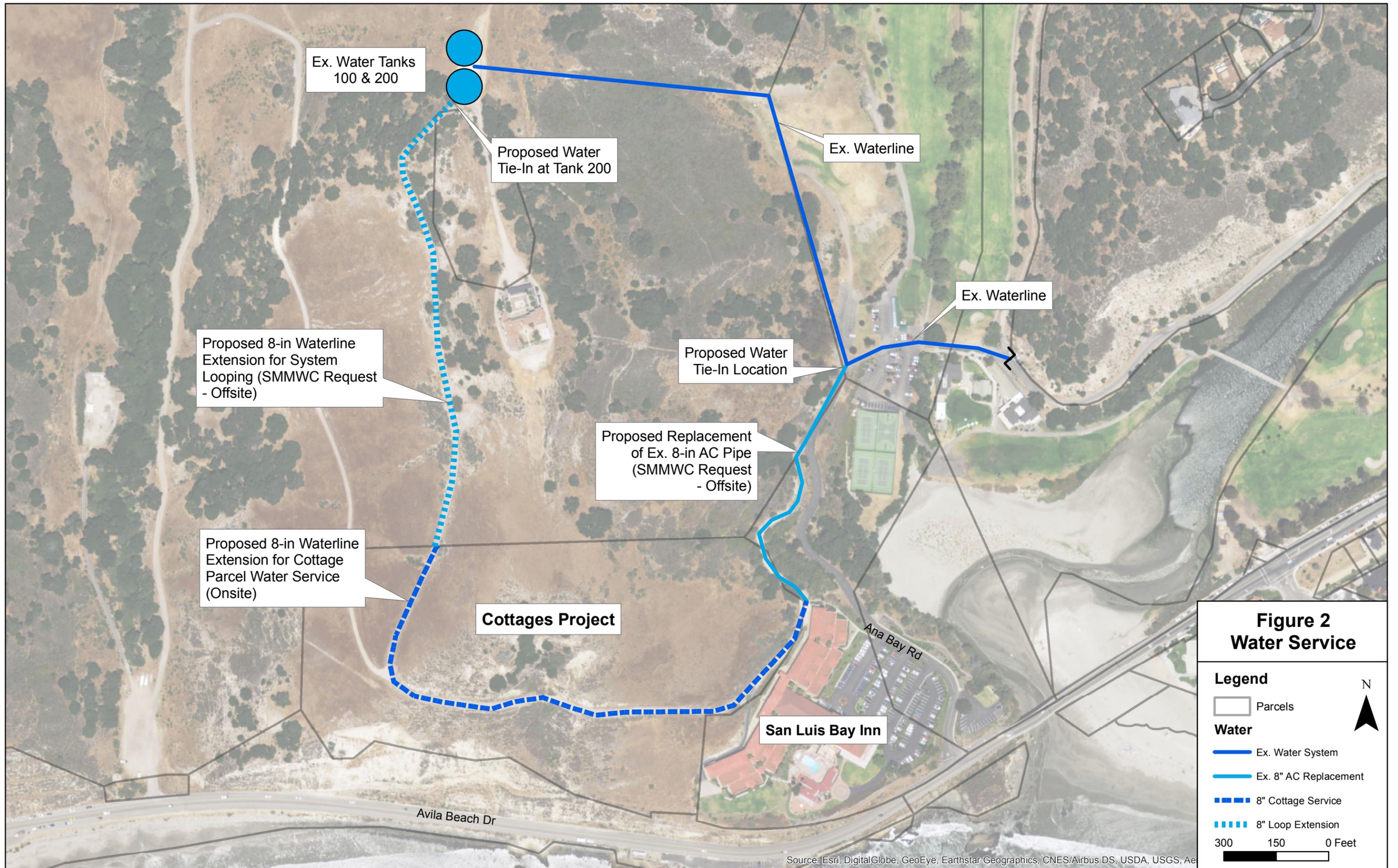
Recycled Water

- Ex. 6" FM Conversion
- - - Cottages Extension
- - - Golf Course Extension



500 250 0 Feet

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, Ae



Ex. Water Tanks
100 & 200

Proposed Water
Tie-In at Tank 200

Ex. Waterline

Ex. Waterline

Proposed 8-in Waterline
Extension for System
Looping (SMMWC Request
- Offsite)

Proposed Water
Tie-In Location

Proposed Replacement
of Ex. 8-in AC Pipe
(SMMWC Request
- Offsite)

Proposed 8-in Waterline
Extension for Cottage
Parcel Water Service
(Onsite)

Cottages Project

San Luis Bay Inn

Ana Bay Rd

Avila Beach Dr



Ex. forcemain from Pump Station No. 2 to Pump Station No. 3

Ex. Sewer Pump Station No. 2

Cottages Project

Approx. 2,500 LF 8-inch PVC Sewer to Serve Cottage Parcel (Onsite)

San Luis Bay Inn

Ana Bay Rd

Avila Beach Dr

TECHNICAL MEMORANDUM

To: TJ Gamble, SCM Avlia Beach Partners, LLC
From: DUDEK
Subject: Water Use Analysis for the “Cottage Parcel”
Date: August 17, 2017

Purpose

This Technical Memorandum provides a Water Usage Analysis based upon the project description below for the “Cottage Parcel” located in Avila Beach, San Luis Obispo County, California. SCM Avila Beach Partners, LLC is committed to creating a highly sustainable and water efficient project that is in harmony with the surrounding environment and mindful of the natural resources utilized.

The project is proposing the use of a graywater system for irrigation of landscaping. The San Miguelito Mutual Water Company (SMMWC) intends to upgrade its facility at a future point in time in order to produce reclaimed water. To this end, the project will be installing conventional and purple pipe in order to accommodate the eventual purveyance of reclaimed water for irrigation purposes. At such time that the SMMWC is producing reclaimed water, the project will be using reclaimed water for irrigation.

Project Description

The project entails development of a 50 single key cottages including the following guest amenities:

- restaurant and bar (95-seat capacity at the restaurant including indoor and outdoor dining along with adjacent lounge/bar with approximately approximately 40 stools);
- banquet/meeting space facilities;
- spa (3 treatment rooms with in-room showers);
- fitness center, including a yoga/Pilates/movement studio;
- pool and Jacuzzi spa;
- laundry facilities; and
- gift shop (non-water generating).

Project Landscaping

Consistent with the hotel’s commitment to state-of-the-art best management practices and environmental stewardship, the applicant has worked in concert with a qualified landscape architect to ensure that the proposed project landscaping can be irrigated through a sophisticated graywater system. The graywater system would collect and filter water from the hotel’s uses including, showers, bathroom sinks, and washing machines and reuse this water for landscaping purposes. The maximum combined total of reusable water that would enter the graywater system equates to approximately 2,292 gallons per day or 2.6 AFY as shown in Table 1 and approximately 2,961 gallons per day or 3.32 AFY as shown in Table 2. This amount of water provides for a portion of the landscaping irrigation.

The highest caliber of current efficient irrigation technology will be utilized including a weather-based smart controller, low-volume spray heads, drip emitters and soil moisture sensors. Plantings throughout the property will be designed by hydrozone to ensure the irrigations system is aligned with the precise amount of water required for each type of species' sustained health and longevity. Mulch will be utilized as a soil cover in order to save water, reduce evaporation, prevent erosion, control weeds and to enrich the soil. Ongoing monitoring of the irrigation system, described best management practices and technology and plant health will be part of the landscape contractor's maintenance and guaranty agreement. A landscape maintenance manual will be drafted by the project's licensed landscape architect for hotel and landscape contractor use both for plant establishment and ongoing irrigation requirements. The landscape manual will also provide information and guidelines to ensure that all tools, techniques, BMPs and irrigation systems are being deployed and implemented properly and most effectively. Low-impact development (LID) measures including bio-retention, vegetated filter swales, permeable paving and self-treating or self-retaining areas will be included to support effective stormwater management, infiltration and groundwater recharge to the highest degree of feasibility possible.

Project Hardscape and Run-Off

The applicants and operators of the project recognize that stormwater and all water that has the potential to run off the site is a resource. In compliance with regulation and understanding stormwater as a resource, the applicants propose to include and direct all stormwater and run-off to the proposed gray water system that will serve the project. Preliminary hardscape area estimates are provided below and have been derived based on the preliminary plans for the project. Specifically, there is an estimated 175,650 sf of impervious or hardscape associated with the project, including rooftops, stone terraces and patios, pathways and paved parking areas and driveways. The predominant soils on the site are Lodo Clay Loam and Los Osos Loam, which have a high-run off factor and have a slow permeability factor or an infiltration rate of 0 to 0.5 inches per hour when wet. Hence, given the drainage profile of the soils, the project will direct all stormwater/run-off either directly to catchment areas to drain into water features or directed entirely to the gray water system. A very rough estimate of potential run off on the site based on approximately 18% site coverage and historical rainfall data indicates that annual run off to the system would be 221,504 cf of water.

Project Plumbing and Fixtures

Water use efficiency on the project is paramount to sustainable operations of the completed hotel and will be achieved through the use of state-of-the-art water saving irrigation technologies coupled with water re-use and astute landscaping design and practices. Just as important, is the use of indoor plumbing fixtures that not only meet the California Green Building Code requirements, but in many cases also exceed these requirements. The fixtures proposed for use in guest rooms and in public spaces represent the premier water efficiency fixtures on the market. Specifically, whereas the California Green Building Code requires 1.28 gpm for toilet and flush valves, those proposed in the hotel can be restricted to 1.0 gpm, and where the California Green Building Code requires showers to be 2.0 gpm, the showers being proposed can be restricted 1.75 gpm or less, and finally where the California Green Building Code requires faucets to be 1.5 gpm, those being proposed are 1.0 gpm. While a hotel would traditionally have tubs in every guest room, the project will restrict tubs to only 25% of the rooms or 12 rooms. Hence, installation of these fixtures and reduction in the fixtures overall represents a significant commitment to the thoughtful use of water on this project.

Technical Memorandum
Cottage Parcel, Avila Beach - Water Usage Analysis

Water Usage Analysis Tables

The tables below have categorized all proposed uses and provided estimated water usage and acre-feet per year based on operational inputs, fixture counts, and specifications.

Table 1 - Water Use Analysis Presuming a 72% Annualized Occupant Rate (Scenario 1)

| Use | Gallon per day | Gallons per year | AFY |
|---|----------------|------------------|-------------|
| Hotel Guest rooms 50 Guest rooms ¹ | | | |
| • Sinks, Toilets, Showers and Tubs ² | 708 | 258,420 | 0.79 |
| Total for Guestrooms | | | 0.79 |
| Lobby/Reception/Main Building (lobby, admin offices, banquet/ meeting room space, public restrooms, employee break room & restrooms) | | | |
| • Sinks, Toilets ³ | 211 | 77,015 | 0.24 |
| • Meeting/Banquet space ⁴ | 296 | 108,000 | 0.33 |
| Total for Lobby/Reception | 507 | 185,015 | 0.57 |
| Restaurant, Private Dining, Kitchen and Bar ⁵ | | | |
| Total for Restaurant, Private Dining, Kitchen and Bar | 3,990 | 1,456,350 | 4.5 |
| Pool Area | | | |
| • Pool and Jacuzzi spa ⁶ | 493 | 179,945 | 0.55 |
| • Restrooms (sinks, toilets) ⁷ | 75 | 27,275 | 0.08 |
| • Pool bar ⁸ | 40 | 14,600 | 0.04 |
| Total for Pool Area | 608 | 221,820 | 0.67 |
| Spa 3 treatment rooms and bathroom | | | |
| • Sinks, Toilets, Showers ⁹ | 265 | 96,725 | 0.30 |
| Total for Spa | | | 0.30 |
| Laundry | 1,008 | 367,920 | 1.13 |

¹Assumes a 72% annualized occupancy rate;

²Assumes 1.5 min per sink at 0.5 gpm; Assumes 2 fpd at 1 gpm (toilet); Assumes 7 min per guest at 1.75 gpm (shower); 12 rooms with tubs (1 use per room per day at 36 gpd)

³Assumes 1.5 min per sink at 0.5 gpm; Assumes 6 fpd at 1 gpm (toilet);

⁴Meeting/Banquet uses assume 30 gallons per guest

⁵Kitchen, Restaurant and Bar uses are conservatively estimated at 30 gallons per seat at 129 seats

⁶Pools are drained once every 3 to 4 years; on average pools lose 1/4" of water per day through evaporation; therefore the pool will be covered to prevent evaporation to the maximum extent feasible

⁷ Assumes 1.5 min per sink at 0.5 gpm; Assumes 3 fpd at 1 gpm (toilet);

⁸Assumes 2 gallons per seat at 20 seats

⁹Assumes 5 min per sink at 0.5 gpm; Assumes 3 fpd at 1 gpm (toilet); Assumes 7 min per spa guest at 1.75 gpm (shower)

Technical Memorandum
Cottage Parcel, Avila Beach - Water Usage Analysis

| | | | |
|---|----|-----------|-------|
| • 3 commercial washers ¹⁰ | | | |
| Total for Laundry | | | 1.13 |
| Evaporative Cooling (HVAC) | 94 | 34,310 | 0.015 |
| Landscaping | | 1,919,170 | 5.89 |
| GRAND TOTAL without Graywater System | | | 13.8 |
| GRAND TOTAL with Graywater System providing 2.6 AFY of irrigation water ¹¹ | | | 11.3 |

Assumptions:

- Annualized hotel occupancy at 72%, which is slightly over the statistical hotel occupancy average nationwide of 63% between 2000 and 2015. The 72% occupancy rate is consistent with the rate of occupancy typical in hotels of this caliber nationwide.
- 30 events per year with an average of 120 attendees, which is based on the operational parameters provided by the applicant, consistent with the caliber of hotel that is being proposed and the management company's analytics.

Table 2 - Water Use Analysis Presuming a 100% Occupant Rate (Scenario 2)

The table below that presumes a 100% occupancy rate has been included at the request of the San Miguelito Mutual Water Company, however, it represents a completely unrealistic scenario to have a fully occupied hotel on a year round basis and should not be taken to reflect a realistic or accurate scenario.

| Use | Gallon per day | Gallons per year | AFY |
|---|----------------|------------------|------|
| Hotel Guest rooms | | | |
| 50 Guest rooms | | | |
| • Sinks, Toilets, Showers and Tubs ¹² | 907 | 331,055 | 1.02 |
| Total for Guestrooms | | | 1.02 |
| Lobby/Reception/Main Building (lobby, admin offices, banquet/ meeting room space, public restrooms, employee break room & restrooms) | | | |
| • Sinks, Toilets ¹³ | 271 | 98,915 | 0.3 |
| • Meeting/Banquet space ¹⁴ | 296 | 108,000 | 0.33 |
| Total for Lobby/Reception | 567 | 185,015 | 0.63 |
| Restaurant, Private Dining, Kitchen and Bar ¹⁵ | | | |
| Total for Restaurant, Private Dining, Kitchen and Bar | 4,988 | 1,820,620 | 5.59 |
| Pool Area | | | |

¹⁰Assumes 14 gpd per guest

¹¹ The graywater system utilizes 2.6 AFY of water harvested from showers, bathroom sinks, and washing machines. Toilets and kitchen sinks have not been factored into water uses for the graywater system due to level of treatment requirements.

¹²Assumes 1.5 min per sink at 0.5 gpm; Assumes 2 fpd at 1 gpm (toilet); Assumes 7 min per guest at 1.75 gpm (shower); 12 rooms with tubs (1 use per room per day at 36 gpd)

¹³Assumes 1.5 min per sink at 0.5 gpm; Assumes 6 fpd at 1 gpm (toilet);

¹⁴Meeting/Banquet uses assume 30 gallons per guest

¹⁵Kitchen, Restaurant and Bar uses are conservatively estimated at 30 gallons per seat at 129 seats

Technical Memorandum
 Cottage Parcel, Avila Beach - Water Usage Analysis

| | | | |
|--|------------|----------------|-------------|
| <ul style="list-style-type: none"> Pool and Jacuzzi spa¹⁶ | 631 | 230,315 | 0.71 |
| <ul style="list-style-type: none"> Restrooms (sinks, toilets)¹⁷ | 96 | 35,040 | 0.11 |
| <ul style="list-style-type: none"> Pool bar¹⁸ | 51 | 14,600 | 0.06 |
| Total for Pool Area | 778 | 279,955 | 0.88 |
| Spa | | | |
| 3 treatment rooms and bathroom | | | |
| <ul style="list-style-type: none"> Sinks, Toilets, Showers¹⁹ | 339 | 123,735 | 0.38 |
| Total for Spa | | | 0.38 |
| Laundry | 1,290 | 470,850 | 1.45 |
| <ul style="list-style-type: none"> 3 commercial washers²⁰ | | | |
| Total for Laundry | | | 1.45 |
| Evaporative Cooling (HVAC) | 94 | 34,310 | 0.015 |
| Landscaping | | 1,919,170 | 5.89 |
| GRAND TOTAL without Graywater System | | | 15.8 |
| GRAND TOTAL with Graywater System providing 3.32 AFY of irrigation water²¹ | | | 12.4 |

¹⁶Pools are drained once every 3 to 4 years; on average pools lose ¼" of water per day through evaporation; therefore the pool will be covered to prevent evaporation to the maximum extent feasible

¹⁷ Assumes 1.5 min per sink at 0.5 gpm; Assumes 3 fpd at 1 gpm (toilet);

¹⁸Assumes 2 gallons per seat at 20 seats

¹⁹Assumes 5 min per sink at 0.5 gpm; Assumes 3 fpd at 1 gpm (toilet); Assumes 7 min per spa guest at 1.75 gpm (shower)

²⁰Assumes 14 gpd per guest

²¹ The graywater system utilizes 2.6 AFY of water harvested from showers, bathroom sinks, and washing machines. Toilets and kitchen sinks have not been factored into water uses for the graywater system due to level of treatment requirements.

Summary

The water usage estimations provided above represents an accurate picture of a project that embodies the highest caliber of water resource efficiency and sustainability. The project entails the installation of the state-of-the-art plumbing fixtures, innovative and advanced landscape design techniques and cutting-edge irrigation technology along with a sophisticated gray water system to maximum use and reuse of water on the property for a total estimated annual usage of 11.3 AFY in Scenario 1 and 12.4 AFY in Scenario 2.

TECHNICAL MEMORANDUM ADDENDUM #1

To: TJ Gamble, SCM Avlia Beach Partners, LLC
From: DUDEK
Subject: Detailed Explanation of Assumptions used for the Water Use Analysis for the “Cottage Parcel”
Date: October 6, 2017

Purpose

This Technical Memorandum provide further detail related on the assumptions included in the Water Usage Analysis (August 30, 2017) for the “Cottage Parcel” located in Avila Beach, San Luis Obispo County, California. SCM Avila Beach Partners, LLC is committed to creating a highly sustainable and water efficient project that is in harmony with the surrounding environment and mindful of the natural resources utilized.

The project is proposing the use of a graywater system for irrigation of landscaping. The San Miguelito Mutual Water Company (SMMWC) intends to upgrade its facility at a future point in time in order to produce reclaimed water. To this end, the project will be installing conventional and purple pipe in order to accommodate the eventual purveyance of reclaimed water for irrigation purposes. At such time that the SMMWC is producing reclaimed water, the project will be using reclaimed water for irrigation.

Project Description

The project entails development of a 50 single key cottages including the following guest amenities:

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- fitness center, including a yoga/Pilates/movement studio;
- pool and Jacuzzi spa;
- laundry facilities; and
- gift shop (non-water generating).

Project Landscaping

Consistent with the hotel’s commitment to state-of-the-art best management practices and environmental stewardship, the applicant has worked in concert with a qualified landscape architect to ensure that the proposed project landscaping can be irrigated through a sophisticated graywater system. The graywater system would collect and filter water from the hotel’s uses including, showers, bathroom sinks, and washing machines and reuse this water for landscaping purposes. The maximum combined total of reusable water that would enter the graywater system equates to approximately 2,292 gallons per day or 2.6 AFY as shown in Table 1 and approximately 2,961 gallons per day or 3.32 AFY as shown in Table 2. This amount of water provides for a portion of the landscaping irrigation.

The highest caliber of current efficient irrigation technology will be utilized including a weather-based smart controller, low-volume spray heads, drip emitters and soil moisture sensors. Plantings throughout the property will be designed by hydrozone to ensure the irrigations system is aligned with the precise amount of water required for each type of species' sustained health and longevity. Mulch will be utilized as a soil cover in order to save water, reduce evaporation, prevent erosion, control weeds and to enrich the soil. Ongoing monitoring of the irrigation system, described best management practices and technology and plant health will be part of the landscape contractor's maintenance and guaranty agreement. A landscape maintenance manual will be drafted by the project's licensed landscape architect for hotel and landscape contractor use both for plant establishment and ongoing irrigation requirements. The landscape manual will also provide information and guidelines to ensure that all tools, techniques, BMPs and irrigation systems are being deployed and implemented properly and most effectively. Low-impact development (LID) measures including bio-retention, vegetated filter swales, permeable paving and self-treating or self-retaining areas will be included to support effective stormwater management, infiltration and groundwater recharge to the highest degree of feasibility possible.

Project Hardscape and Run-Off

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Project Plumbing and Fixtures

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Technical Memorandum
Cottage Parcel, Avila Beach - Water Usage Analysis

Water Usage Analysis Tables

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| • Sinks, Toilets ³ | 211 | 77,015 | 0.24 |
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| Total for Lobby/Reception | 507 | 185,015 | 0.57 |
| Restaurant, Private Dining, Kitchen and Bar ⁵ | | | |
| Total for Restaurant, Private Dining, Kitchen and Bar | 3,990 | 1,456,350 | 4.5 |
| Pool Area | | | |
| • Pool and Jacuzzi spa ⁶ | 493 | 179,945 | 0.55 |
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| Spa 3 treatment rooms and bathroom | | | |
| • Sinks, Toilets, Showers ⁹ | 265 | 96,725 | 0.30 |
| Total for Spa | | | 0.30 |
| Laundry | 1,008 | 367,920 | 1.13 |

¹Assumes a 72% annualized occupancy rate;

²Assumes 1.5 min per sink at 0.5 gpm; Assumes 2 fpd at 1 gpm (toilet); Assumes 7 min per guest at 1.75 gpm (shower); 12 rooms with tubs (1 use per room per day at 36 gpd)

³Assumes 1.5 min per sink at 0.5 gpm; Assumes 6 fpd at 1 gpm (toilet);

⁴Meeting/Banquet uses assume 30 gallons per guest

⁵Kitchen, Restaurant and Bar uses are conservatively estimated at 30 gallons per seat at 129 seats

⁶Pools are drained once every 3 to 4 years; on average pools lose 1/4" of water per day through evaporation; therefore the pool will be covered to prevent evaporation to the maximum extent feasible

⁷ Assumes 1.5 min per sink at 0.5 gpm; Assumes 3 fpd at 1 gpm (toilet);

⁸Assumes 2 gallons per seat at 20 seats

⁹Assumes 5 min per sink at 0.5 gpm; Assumes 3 fpd at 1 gpm (toilet); Assumes 7 min per spa guest at 1.75 gpm (shower)

Technical Memorandum
Cottage Parcel, Avila Beach - Water Usage Analysis

| | | | |
|---|----|-----------|-------|
| <ul style="list-style-type: none"> 3 commercial washers¹⁰ | | | |
| Total for Laundry | | | 1.13 |
| Evaporative Cooling (HVAC) | 94 | 34,310 | 0.015 |
| Landscaping | | 1,919,170 | 5.89 |
| GRAND TOTAL without Graywater System | | | 13.8 |
| GRAND TOTAL with Graywater System providing 2.6 AFY of irrigation water ¹¹ | | | 11.3 |

Assumptions:

- Annualized hotel occupancy at 72%, which is slightly over the statistical hotel occupancy average nationwide of 63% between 2000 and 2015. The 72% occupancy rate is consistent with the rate of occupancy typical in hotels of this caliber nationwide.
- 30 events per year with an average of 120 attendees, which is based on the operational parameters provided by the applicant, consistent with the caliber of hotel that is being proposed and the management company's analytics.

Table 2 - Water Use Analysis Presuming a 100% Occupant Rate (Scenario 2)

The table below that presumes a 100% occupancy rate has been included at the request of the San Miguelito Mutual Water Company, however, it represents a completely unrealistic scenario to have a fully occupied hotel on a year round basis and should not be taken to reflect a realistic or accurate scenario.

| Use | Gallon per day | Gallons per year | AFY |
|---|----------------|------------------|------|
| Hotel Guest rooms | | | |
| 50 Guest rooms | | | |
| <ul style="list-style-type: none"> Sinks, Toilets, Showers and Tubs¹² | 907 | 331,055 | 1.02 |
| Total for Guestrooms | | | 1.02 |
| Lobby/Reception/Main Building (lobby, admin offices, banquet/ meeting room space, public restrooms, employee break room & restrooms) | | | |
| <ul style="list-style-type: none"> Sinks, Toilets¹³ | 271 | 98,915 | 0.3 |
| <ul style="list-style-type: none"> Meeting/Banquet space¹⁴ | 296 | 108,000 | 0.33 |
| Total for Lobby/Reception | 567 | 185,015 | 0.63 |
| Restaurant, Private Dining, Kitchen and Bar ¹⁵ | | | |
| Total for Restaurant, Private Dining, Kitchen and Bar | 4,988 | 1,820,620 | 5.59 |
| Pool Area | | | |

¹⁰Assumes 14 gpd per guest

¹¹ The graywater system utilizes 2.6 AFY of water harvested from showers, bathroom sinks, and washing machines. Toilets and kitchen sinks have not been factored into water uses for the graywater system due to level of treatment requirements.

¹²Assumes 1.5 min per sink at 0.5 gpm; Assumes 2 fpd at 1 gpm (toilet); Assumes 7 min per guest at 1.75 gpm (shower); 12 rooms with tubs (1 use per room per day at 36 gpd)

¹³Assumes 1.5 min per sink at 0.5 gpm; Assumes 6 fpd at 1 gpm (toilet);

¹⁴Meeting/Banquet uses assume 30 gallons per guest

¹⁵Kitchen, Restaurant and Bar uses are conservatively estimated at 30 gallons per seat at 129 seats

Technical Memorandum
Cottage Parcel, Avila Beach - Water Usage Analysis

| | | | |
|--|------------|----------------|-------------|
| <ul style="list-style-type: none"> Pool and Jacuzzi spa¹⁶ | 631 | 230,315 | 0.71 |
| <ul style="list-style-type: none"> Restrooms (sinks, toilets)¹⁷ | 96 | 35,040 | 0.11 |
| <ul style="list-style-type: none"> Pool bar¹⁸ | 51 | 14,600 | 0.06 |
| Total for Pool Area | 778 | 279,955 | 0.88 |
| Spa | | | |
| 3 treatment rooms and bathroom | | | |
| <ul style="list-style-type: none"> Sinks, Toilets, Showers¹⁹ | 339 | 123,735 | 0.38 |
| Total for Spa | | | 0.38 |
| Laundry | 1,290 | 470,850 | 1.45 |
| <ul style="list-style-type: none"> 3 commercial washers²⁰ | | | |
| Total for Laundry | | | 1.45 |
| Evaporative Cooling (HVAC) | 94 | 34,310 | 0.015 |
| Landscaping | | 1,919,170 | 5.89 |
| GRAND TOTAL without Graywater System | | | 15.8 |
| GRAND TOTAL with Graywater System providing 3.32 AFY of irrigation water²¹ | | | 12.4 |

Assumptions for the Water Use Analysis

Assumptions for the uses proposed are cited and documented in the footnotes at the end of each table. Industry standards for hotel usage and high-efficiency plumbing fixtures have been utilized in the analysis and will be installed in the project. In order to provide a comparison, the table below summarizes a water budget on a per person basis using fixtures for residential uses per The Urban Water Conservation and Efficiency Potential in California (Pacifica Institute, June 2014). As these are residential usage numbers, the factors are higher than what a hotel occupant would utilize as hotel occupants not occupying the land use (hotel) for the same time period. Residential uses assume a higher frequency of usage. Moreover, the fixture utilized in the 2014 study assume a lower water use efficiency rating than what will be utilized proposed for the hotel.

¹⁶Pools are drained once every 3 to 4 years; on average pools lose ¼" of water per day through evaporation; therefore the pool will be covered to prevent evaporation to the maximum extent feasible

¹⁷ Assumes 1.5 min per sink at 0.5 gpm; Assumes 3 fpd at 1 gpm (toilet);

¹⁸Assumes 2 gallons per seat at 20 seats

¹⁹Assumes 5 min per sink at 0.5 gpm; Assumes 3 fpd at 1 gpm (toilet); Assumes 7 min per spa guest at 1.75 gpm (shower)

²⁰Assumes 14 gpd per guest

²¹ The graywater system utilizes 2.6 AFY of water harvested from showers, bathroom sinks, and washing machines. Toilets and kitchen sinks have not been factored into water uses for the graywater system due to level of treatment requirements.

Per person per year usage for Residential Uses and Per guest per year usage for Proposed Hotel Uses

| | |
|---|---------------|
| Toilet ²² | 0.0068 |
| Shower ²³ | 0.0094 |
| Faucet ²⁴ | 0.0073 |
| Total per person AFY for Residential Use | 0.0235 |
| Total per person gallons per day for Residential Use | 20.98 |
| Total per guest gallons per day for Hotel Use | 14 |

²² 2.0 gallons per minute for showers

²³ 1.28 gallons per flush for toilets

²⁴ 1.2 gallons per minute for bathroom faucets