

# **Preliminary Water Quality Management Plan (WQMP)**

## **Project Name:**

Laguna Niguel Senior Assisted Living Center  
Development and Grace Church Remodel

## **Prepared for:**

**Griffin Living, LLC  
24005 Ventura Blvd  
Calabasas, CA 91302  
(818) 965-7400**

## **Prepared by:**

**Diamond West, Inc**

**Engineer: William C. Cunningham, III**

**Registration No. 80129**

**24005 Ventura Blvd, Suite 100**

**Calabasas, CA 91302**

**(818) 591-1050**

**Engineer's Seal**



**Prepared on:**

**3-17-2022**

**Preliminary Water Quality Management Plan (WQMP)**  
**Laguna Niguel Senior Assisted Living Center and Grace Church Remodel**

<b>Project Owner's Certification</b>			
Permit/Application No.	TBD	Grading Permit No.	TBD
Tract/Parcel Map No.	TPM 2021-101	Building Permit No.	TBD
CUP, SUP, and/or APN (Specify Lot Numbers if Portions of Tract)			APN 653-012-12

This Preliminary Water Quality Management Plan (WQMP) has been prepared for Griffin Living, LLC by Diamond West, Inc. The WQMP is intended to comply with the requirements of the local NPDES Stormwater Program requiring the preparation of the plan.

Griffin Living, LLC will be responsible for the implementation of the provisions of this plan and will ensure that this plan is amended as appropriate to reflect up-to-date conditions on the site consistent with the current Orange County Drainage Area Management Plan (DAMP) and the intent of the non-point source NPDES Permit for Waste Discharge Requirements for the County of Orange, Orange County Flood Control District and the incorporated Cities of Orange County within the San Diego Region (South Orange County). If the undersigned transfers its interest in the property, its successors-in-interest shall bear the aforementioned responsibility to implement and amend the WQMP. An appropriate number of approved and signed copies of this document shall be available on the subject site in perpetuity.

<b>Owner:</b>			
Title	Richard Niec, Senior Vice President, Forward Planning		
Company	Griffin Living, LLC		
Address	24005 Ventura Blvd		
Email	rniec@griffinfineliving.com		
Telephone #	(818) 965-7400		
Signature		Date	

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# **Attachments**

- Attachment A: Water Quality Plan**
- Attachment B: Tentative Parcel Map 2021-101**
- Attachment C: Pre- and Post- Drainage Maps**
- Attachment D: Civil Plan Set**
- Attachment E: Supporting Project Information**
- Attachment F: Water Quality Calculation**
- Attachment G: Hydrology Report\***
- Attachment H: Geotechnical Report\***
- Attachment I: BMP Information**
- Attachment J: Educational Materials**
- Attachment K: Operations and Maintenance Plan**

*\*Refer to separate reports provided with submittal*

# Section 1 Discretionary Permit(s) and Water Quality Conditions

<b>Project Information</b>			
Permit/Application No.	TBD	Site Address or Tract/Parcel Map No.	24600 La Plata Dr.
Additional Information/Comments:	This Preliminary Water Quality Management Plan has been developed in accordance with the Model Water Quality Management Plan and provides the basic framework to address water quality component for each anticipated phase of the Laguna Niguel Senior Assisted Living / Grace Church project.		
<b>Water Quality Conditions</b>			
Water Quality Conditions from prior approvals or applicable watershed-based plans	<p>The project is considered a priority project under the South Orange County Technical Guidance Manual, Section 1.2.4 (a), (b), (e). Therefore, the project is subject to the requirements of a Water Quality Management Plan. This document is Preliminary WQMP prepared prior to planning approval and therefore Conditions of Approval have yet to be issued. Conditions will be added in the Final WQMP after Planning approvals and Conditions are issued.</p> <p>This project will be subject to CEQA; 2021 CEQA Guidelines Appendix G Environmental Checklist Section IX deals with water quality and hydrologic concerns. This project is compliant with each of the Section IX items, as any impacts have been mitigated through onsite water quality treatment and/or hydromodification. For more detailed explanation, refer to Section 7 of this report, and also the <i>Hydrology Report (Attachment G)</i>.</p>		

## Section 2 Project Description

### 2.1 General Description

<b>Description of Proposed Project</b>				
Site Location	<i>Project Address: 24600 La Plata Dr., Laguna Niguel, CA 92677</i> <i>APN: 653-012-12</i> <i>See Tentative Parcel Map 2021-101 in Exhibit A</i>			
Project Area (ft <sup>2</sup> ): 232,863	Number of Dwelling Units: 108 Assisted Living and Memory Care Units		SIC Code: 8316 (residential living)	
Narrative Project Description:	<p>The project includes subdividing a 5.34 acre property into two parcels through Tentative Parcel Map 2021-101. The 2.0-acre, Parcel 1, will maintain an existing 10,000 SF+/- church under current ownership, with an addition of roughly 3,000 SF. The 3.34-acre Parcel 2 will see the construction of a proposed 108-unit senior assisted living facility (130,000 SF+/-), to be owned by the applicant (Griffin Living, LLC). Two points of vehicular access to the site will be provided; one new access point via Crown Valley Parkway and a second via La Plata Dr, which currently serves as the Grace Church entry. Parking for these facilities will be provided by a surface parking lot and an underground parking garage. Retaining walls will be required in conjunction with this proposed development.</p> <p>As a project that proposes more than 10,000 SF of new impervious area, including more than 5,000 SF of parking lots, and disturbing more than 1 acre of the site, this will be classified as a priority project.</p>			
Project Area	Pervious		Impervious	
	Area (acres or sq ft)	Percentage	Area (acres or sq ft)	Percentage
Pre-Project Conditions	174,949	75.1%	57,914	24.9%
Post-Project Conditions	85,599	36.8%	147,264	63.2%

## **2.2 Post Development Drainage Characteristics**

Consistent with the pre-development condition, the post-developed condition maintains three Drainage Management Areas (DMAs), noted as DMA 1, DMA 2, and DMA 3 – refer to Post Development Drainage Exhibit (Attachment C).

DMA 1 is approximately 2.0 acres and is located along the Northeast portion of the property. Stormwater from this DMA will be treated by bio-filtration and conveyed via private storm drain and will exit the site via a parkway drain within La Plata Drive. From there, stormwater is conveyed via the existing gutter to an existing catch basin located near the intersection of La Plata Drive and Crown Valley Parkway. Stormwater entering this catch basin is routed via existing storm drain pipe to the Sulphur Creek Channel (OCFCD Facility No. J301).

DMA 2 is approximately 2.6 acres and is located in the center of the site. Stormwater from this DMA will be treated by bio-filtration and conveyed via private on-site storm drain that will connect to an existing public catch basin within Crown Valley Parkway. An underground detention system located beneath the parking lot will provide stormwater detention as required to reduce peak flow run-off to the pre-developed condition. Stormwater exiting the site via the existing catch basin is routed via existing storm drain pipe to the Sulphur Creek Channel (OCFCD Facility No. J301).

DMA 3 is approximately 1.7 acres and is located along the Southwest portion of the property. Stormwater from this DMA will be treated by bio-filtration and conveyed via private on-site storm drain will exit the site via a parkway drain within Crown Valley Parkway. An underground detention system located beneath the fire department turn-around will provide stormwater detention as required to reduce peak flow run-off to the pre-developed condition. After existing the property via the parkway drain with Crown Valley Parkway, storm water will be conveyed via existing curb and gutter to an existing catch basin located downstream and south of the site.

### *Low Impact Development*

To satisfy the Low Impact Development (LID) requirements, water quality treatment measures will be implemented in each Drainage Management Area (DMA). Infiltration and stormwater reuse were determined to be infeasible, so the proposed biofiltration facilities are non-infiltration type systems, are designed treat runoff to the storm drain system – refer to the Water Quality Plan (Attachment A). Proposed BMP's for each DMA include:

DMA 1 improvements consist of a reconstructed parking lot and a modernized and expanded church building. Interlocking pavers are used in-lieu of asphalt pavement at the driveway entrance to La Plata. Runoff will be treated by several biofiltration BMPs (Focal Point biofiltration BMP, or similar devices) that are dispersed throughout the DMA.

DMA 2 improvements include the newly constructed driveway access to Crown Valley, parking lot improvements, the northeast portion of the assisted living building and the assisted living courtyard. Interlocking pavers are used in-lieu of asphalt pavement at the driveway entrance to Crown Valley Parkway and around the motor court entrance to the assisted living building. Runoff will be treated by several biofiltration BMPs (Focal Point biofiltration BMP, or similar devices) that are dispersed throughout the DMA. An underground detention facility (R-Tank or similar device) is proposed under the parking lot to account for hydromodification.

DMA 3 improvements include the proposed fire access road and turn-around, the southeast portion of the assisted living building, and the memory card courtyard. Interlocking pavers are used in-lieu of asphalt pavement at the fire access road turn-around. Runoff will be treated by several biofiltration BMPs (Focal Point biofiltration BMP, or similar devices) that are dispersed throughout the DMA. An underground detention facility (R-Tank or similar device) is proposed under the fire department turn-around to account for hydromodification.

## **2.3 Property Ownership/Management**

The existing 5.34 ac site is owned by Grace Church, A California Non-Profit Corporation (Grace Church), which maintains the existing church facility, parking lot, and classrooms. After the proposed subdivision via Tentative Parcel Map No. 2021-101 (Attachment B), Grace Church will maintain ownership of the northerly Lot 1 (2.0 ac) containing the church and a portion of the parking lot. Griffin Living will own the southerly Lot 2 (3.34 ac) which will contain the proposed assisted living facility, portions of the parking lot, and the fire access road. No land is anticipated to transfer to any public agency. Reciprocal drainage, utilities and access agreement(s) are anticipated, providing both owners with shared use of these facilities.



## **Section 3 Site & Watershed Characterization**

### **3.1 Site Conditions**

#### **3.1.1 Existing Site Conditions**

##### *Site Development*

The existing 5.34 ac site is developed with a church and former school. The 10,000 SF+/- church sits on the northerly portion of the site, and the two classroom buildings (3,360 SF+/-) are in the westerly portion. The bulk of the northerly half of the site apart from any buildings is used for a paved parking lot. Refer to *Existing Conditions and Demolition Plan (Attachment D)*. Additionally, the project accepts off-site run-on from the ascending slopes above the graded pad, along the southwesterly portions of the site, an area roughly 0.86 ac in size for a total drainage area of 6.2 ac.

All portions of the site have been impacted by previous development. Even those portions of the site which are presently landscaped with a mix of native and non-native plants include graded pads and manufactured slopes. About 30% of the site is considered impervious, consisting of structures, parking lot, and sidewalks. The landscaped areas include grasses, shrubs, and trees. As such, there are no known sensitive environmental features throughout the project.

##### *Topography*

The terrain at the site generally slopes up from Crown Valley Parkway in Southeast direction. The existing Church, parking lot, and school and playground are situated on a large pad that is approximately 40-50 feet above Crown Valley Parkway. Terrain continues to slope up to the South and Southeast of the existing pad 25-50 to single-family home pads.

##### *Surrounding Environment*

This is an infill project. The surrounding area has been largely developed with single-family residences. A pre-school is located on the adjacent lot at the corner of Crown Valley Parkway and La Plata Drive. Further single-family residences are developed on the opposite side of both La Plata Drive and Crown Valley Parkway.

The descending slope to Crown Valley Parkway is part of a mostly continuous landscaped slope consistent with the street's designation as a scenic corridor. Sulphur Creek Channel is located across Crown Valley Parkway from the property.

Public Utilities, including water, sewer, storm drain, gas, communications and electricity are located below ground within La Plata Drive and Crown Valley Parkway.

##### *Drainage Patterns*

In the pre-project condition, the site is divided into three Drainage Management Areas (DMAs) noted as DMA 1, DMA 2, and DMA 3 – refer to *Pre-Development Drainage Exhibit (Attachment C)*.

DMA 1 is approximately 2.7 acres and is located along the Northeast portion of the property. Stormwater from this DMA is conveyed primarily through surface and exits the site via a curb drain within La Plata Drive. From there, stormwater is conveyed via the existing gutter to an existing catch basin located near the intersection of La Plata Drive and Crown Valley Parkway. Stormwater entering this catch basin is routed via existing storm drain pipe to the Sulphur Creek Channel (OCFCD Facility No. J301).

DMA 2 is approximately 2.2 acres and is located in the center of the site. Stormwater from this DMA is conveyed primarily through surface and exits the site via parkway drains within Crown Valley Parkway. After exiting the property, stormwater is conveyed to an existing catch basin inlet along the project frontage. After entering the catch basin, stormwater is routed via existing storm drain pipe to the Sulphur Creek Channel (OCFCD Facility No. J301).

DMA 3 is approximately 1.3 acres and is located along the Southwest portion of the property. Stormwater from this DMA is conveyed primarily through surface and exits the site via parkway drains within Crown Valley Parkway. After exiting the property via the parkway drain with Crown Valley Parkway, storm water will be conveyed via existing curb and gutter to an existing catch basin located downstream and south of the site.

<b>Existing Land Uses</b>				
Land Use Description	Total Area* (acres)	Impervious Area (acres)	Pervious Area (acres)	Imperviousness (%)
<i>Church and School</i>	5.34	1.33	4.01	24.9%
Total	5.34	1.33	4.01	24.9%

\*Total on-site area – off-site areas contributing to drainage area not included for purposes of land uses

### **3.1.2 Infiltration-Related Characteristics**

A geotechnical report was compiled by Stoney-Miller Consultants – refer to Geotechnical Report (Attachment H) – which found that the site consists of Type “C” soils, including silty clays and clayey silts, over Capistrano siltstone bedrock. Percolation testing found that the water level in test bores dropped a mere 0.01 in. during the period of observation, demonstrating that infiltration is not viable for this project. Groundwater was not encountered during site investigations and is not anticipated to be an issue with site development. The site appears to contain manufactured slopes, constructed with engineered fill in two stages of development in the 1970’s and 1980’s. The geotechnical engineer has recommended that all structures and retaining walls will be constructed with the sub-drains to mitigate any risk of wetted soil causing unexpected settlement.

### **3.1.2.1 Hydrogeologic Conditions**

Stoney-Miller's site evaluation found no presence of groundwater while drilling. The geotechnical report references a historic study which found minimal groundwater during grading of an adjacent property, concluding that with installation of proper subdrains, groundwater will not be a constraint for the site.

### **3.1.2.2 Soil and Geologic Infiltration Characteristics**

The site-specific geotechnical study prepared for this project includes the results of three borings (10'-20' deep) which were used for percolation testing. During the observation period, the water level dropped by 0.01 inch, demonstrating the infeasibility of infiltration at the project site. As a result, infiltration-based BMPs are not a viable design consideration for the project.

### **3.1.2.3 Geotechnical Conditions**

Much of the site is composed of engineered fill from previous construction activities in the 1970's and 1980's. Since these areas of fill were constructed prior to current standards, it is recommended that the site be over-excavated to a depth of 5' below structures/finished surface. Fill materials should be saturated to 110% or more of optimum moisture content, prior to being compacted.

### **3.1.2.4 Summary of Infiltration Opportunities and Constraints of Existing Site**

For infiltration to be considered feasible, a minimum percolation rate of 0.3 in/hour (including factor of safety) is required. Due to soils with significant clay content, infiltration has been found to be negligible for this project (0.01 in total), and thus not a feasible BMP consideration.

## **3.2 Proposed Site Development Activities**

### **3.2.1 Overview of Site Development Activities**

The proposed development consists of the modernization and expansion of the existing Grace Church facility and construction of a new Assisted Living facility. The Grace Church improvements consist of second-floor addition and interior and exterior building renovations. The proposed Assisted Living facility will be constructed on the southwestern portion of the site. New/upgraded vehicular entries and drive aisles, fire access roads, and a new/upgraded parking lot will be constructed as part of these improvements. Retaining walls will be constructed, mostly in cut conditions to support the ascending slopes, along the perimeter of the development area. Utilities for the new facility including water, sewer and dry utilities will be connected to existing infrastructure in Crown Valley Parkway - refer to the *Conceptual Civil Plan Set (Attachment D)*.

### **3.2.2 Project Attributes Influencing Stormwater Management**

The existing church will remain on the northeasterly property and will have a second-floor addition constructed. This building will continue to be used for church activities, such as worship services, small group studies/meetings, and offices for church staff. The existing church has a kitchen which

is used along with some church activities. A new trash enclosure will be constructed in the reconfigured parking lot.

The proposed assisted living will offer approximately 108 units, and will include common areas, patios, and a cafe. This structure will contain a kitchen, laundry room, and other “back of house” operations to support the residents. Trash and recycling will be stored in a designated area in the basement. In addition to the porte cochere for visitor drop-off and pick-up, a commercial loading zone is proposed next to the fire turnaround behind the building. Significant portions of the southerly portion of the site will be excavated up to 10’ to allow for a basement and underground parking garage. The existing parking lot will be reconfigured as well, both in terms of layout and grading.

<b>Proposed Land Uses</b>				
Land Use Description	Total Area* (acres)	Impervious Area (acres)	Pervious Area (acres)	Imperviousness (%)
<i>Church</i>	2.0	1.24	0.76	62%
<i>Assisted Living</i>	3.34	2.14	1.20	64%
<b>Total</b>	<b>5.34</b>	<b>3.38</b>	<b>1.96</b>	<b>63%</b>

\*Total on-site area – off-site areas contributing to drainage area not included for purposes of land uses

The ascending and surrounding the proposed development area are to remain in their existing state. These slopes (2:1 max) are currently landscaping mostly with shrubs, though there are some trees on the lower slopes. Development plans include reconstruction of the descending slope along Crown Valley, with a 2:1 max slope, and will incorporate landscaping improvements. Within the development area, landscaping will be placed around the buildings and parking areas.

To allow access to the Finished Floor at the entrance of the Assisted Living facility, the existing parking lot will be reconfigured. This will result in the southerly portion of the existing parking lot sheet flowing to the south instead of towards La Plata Drive. To maintain a similar drainage pattern to the existing one, runoff from these areas will be directed via curb cuts to biotreatment devices; once treated the runoff will be routed through storm drains La Plata Drive. The concrete gutters in the slopes above and the development area will be left intact and will continue to direct run-off to Crown Valley parkway via parkway culverts. Retaining walls will include concrete gutters which will collect runoff from the descending slopes above the main development area. Inlets are to be installed at low points behind the retaining walls, and run-off will then be routed to the street through storm drain pipes. A concrete curb will be installed behind the existing sidewalk along Crown Valley Parkway to collect all runoff from the descending slope and direct it to various inlets/parkway culverts.

On-site drainage (including run-on entering the site along the descending slopes above the graded pad) exits the site through one of several parkway culverts. Drainage from the northerly portion of the site (DMA 1) will be collected and treated in biofiltration devices, then routed through underground pipes and a parkway culvert to La Plata Drive. Inlets will collect run-on from the descending slopes, which are self-mitigating, and route the drainage through the site via storm drains. Surface runoff from DMAs 2 and 3 will be collected and treated in biotreatment devices, and then routed through storm drains to a detention basin and released in a controlled manner to Crown Valley. These patterns are similar to the existing drainage patterns; peak flows and time of concentration will be controlled by appropriately sized underground detention basins and outflow pipes.

As there are no known environmentally sensitive features on the project site, no preservation methods are anticipated.

### **3.2.3 Effects on Infiltration and Harvest and Use Feasibility**

While the proposed development doesn't restrict the possibility of underground infiltration chambers or storage chambers for harvest in use, neither of these options is feasible for this project. As reported in Section 3.1, the geotechnical study found that infiltration on the site is negligible and cannot be relied on as a BMP.

The site will include landscaping throughout pervious portions of the site. The Landscape Architect has calculated that based on the square footage and types of landscaping called for around the site, the estimated water demand is 2,230 gal/day. Assuming daily watering, it would take roughly 46 days to draw down the total storage volume of 1.5 x DCV. Harvest and reuse is not a viable option, since run-off from an initial storm would almost certainly be present during subsequent storm events, reducing the ability to treat stormwater as required.

## **3.3 Receiving Waterbodies**

As discussed earlier in the document, stormwater runoff leaving the site is routed via existing storm drain pipe to the Sulphur Creek Channel (OCFCD Facility No. J301). Sulphur Creek Channel continues to Sulphur Creek Reservoir about 1.25 miles downstream. After leaving the reservoir, drainage merges with Aliso Creek which drains into the Pacific Ocean, +/-4 miles away.

### 3.4 Stormwater Pollutants or Conditions of Concern

<b>Pollutants or Conditions of Concern</b>				
<b>Pollutant</b>	<b>Expected from Proposed Land Uses/Activities (Yes or No)</b>	<b>Receiving Waterbody Impaired* (Yes or No)</b>	<b>Priority Pollutant from WQIP or other Water Quality Condition? (Yes or No)</b>	<b>Pollutant of Concern (Primary, Other, or No)</b>
Suspended-Solids	Yes	No		
Nutrients	Yes	Yes		
Heavy Metals	Yes	Yes		
Bacteria/Virus/Pathogens	Yes	Yes	Yes	Primary
Pesticides	Yes	No		
Oil and Grease	Yes	No		
Toxic Organic Compounds	Yes	Yes		
Trash and Debris	Yes	No		
Dry Weather Runoff			Yes	Primary

\*Impaired receiving waterbodies compared to 2016 303(d) list - Project is located within 200' of Sulphur Creek, part of the Aliso Creek Watershed which is an impaired water body on the Clean Water Act 303(d) list, 2016 version.

Source control measures will be employed to minimize introduction of pollutants to the site. These measures include covering trash enclosures to reduce trash and debris, and maintenance of landscape with fertilizer/pesticide in accordance with DAMP Section 5.5. Proprietary biotreatment devices will be deployed throughout the site to treat stormwater of the pollutants of concern as required by the SOC TGD Table J-1. These devices are capable of removing the above designated pollutants to acceptable levels - refer to the specifications for the FocalPoint system included with the *BMP Information (Attachment I)*.

### 3.5 Hydrologic Conditions of Concern

Does a hydrologic condition of concern exist for this project?

No - An HCOC does not exist for this receiving water because:

- Project discharges directly to a protected conveyance (bed and bank are concrete lined the entire way from the point(s) of discharge to a receiving lake, reservoir, embayment, or the Ocean
  - Project discharges directly to storm drains which discharge directly to a reservoir, lake, embayment, ocean or protected conveyance (as described above)
  - The project discharges to an area identified in the WMAA as exempt from hydromodification concerns
- Yes - An HCOC does exist for this receiving water because none of the above are applicable.

As a hydrologic condition of concern exists for this project, hydromodification will be required to mitigate the potential impacts of the proposed development. Refer to Section 6 of this report for further discussion of mitigation measures for hydrologic conditions of concern.

### **3.6 Critical Course Sediment Yield Areas**

While the project is located within a non-exempt part of Laguna Niguel, and the descending slope to Crown Valley is depicted as a Potential Course Sediment area, the related project is for the redevelopment of an existing developed site, and therefore the critical coarse sediment provisions are not applicable.

## **Section 4 Site Plan and Drainage Plan**

### **4.1 Drainage Management Area Delineation**

*The site was broken down into three DMA's based on the existing and future outlet locations:*

- *DMA 1 – northerly portions of the site which outlet to La Plata Drive and are collected in the existing storm drain inlet just before the corner of La Plata and Crown Valley*
- *DMA 2 - portions of the middle part of the site which outlets to Crown Valley Parkway north of the existing storm drain at the midpoint of the project frontage*
- *DMA 3 – collects the southerly portions of the project site, which outlet to Crown Valley Parkway and are collected by an existing storm drain inlet roughly 300' south of the property line*

*All of these DMA's are eventually routed through existing storm drain pipes from the referenced inlets, under Crown Valley Parkway and outlet to Sulphur Creek Channel.*

*These DMA's, which align with the site's hydrology, were further broken down into subareas for water quality treatment. The ascending slopes above the development pad as well as the descending slopes between the pad and Crown Valley Parkway, which are to remain in their present/similar condition, are self-mitigating (100% pervious landscaping that doesn't co-mingle with development run-off); since they don't need to be treated, runoff from these regions will be collected locally via gutters and inlets and routed through the storm drains, bypassing the BMP's, and outletting to La Plata or Crown Valley. The developed portions of the site are also broken down based on local depressions.*

The design capture volume (DCV) utilizing the "Simple Method" described in TGD Appendix E.3.1.1 is provided below. Locations of DMAs and associated LID BMPs are provided on the Proposed Water Quality Plan in Attachment F. Calculations and TGD worksheets are provided in Attachment H of this WQMP.

$$DCV = C \times D \times A \times 43560 \text{ sf/ac} \times 1\text{ft}/12 \text{ in}$$

Where:

DCV = design storm capture volume, cu-ft

C = runoff coefficient = (0.75 x imp + 0.15)

Imp = impervious fraction of drainage area (ranges from 0 to 1)

D = storm depth (inches)

A = tributary area (acres)

Imp = 0.63

D = 0.80 inches (See Attachment C)

A = 5.34 acres

$$*DCV = [(0.63 \times 0.75) + 0.15](0.80)(5.34)(43560)(1/12) = 9653 \text{ Cu. Ft.}$$

*\*DCV shown based on property limits. For actual DCV based on DMA limits, see Section Attachment F*



## **4.2 Overall Site Design BMPs**

### **Minimize Impervious Area**

This project has been designed to be as space efficiently as possible – specifically the church addition will be a second level (instead of a horizontal expansion) and an underground parking garage for the assisted living will reduce the size of the required surface parking lot. Driveways and drive aisles have been reduced in size to the minimums required by city parking and drive aisle requirements as well as fire access requirements. Portions of the driveways and parking areas will be constructed with interlocking pavers which will reduce run-off. Fire access walkways have been designed using gravel to minimize impermeable areas. Large Landscape areas will be maintained and/or provided throughout the proposed development.

### **Maximize Natural Infiltration Capacity**

Infiltration was investigated as a possibility; however, the geotechnical study found that the site consists primarily of Type 'C' soils. Percolation testing demonstrated that infiltration is not possible in any meaningful way. As a result, the project will rely on biofiltration to achieve the water quality requirement. However, landscaping areas will be placed throughout the site allow for incidental infiltration and evapotranspiration.

### **Preserve Existing Drainage Patterns and Time of Concentration**

Development will add new impervious areas and result in some alteration of on-site surface drainage patterns. However, through inlets and underground storm drains, runoff will be routed to traditional existing outlets, maintaining overall drainage patterns post-development. Time of concentration and peak flows will be controlled via underground detention facilities.

### **Disconnect Impervious Areas**

Landscaping will be provided throughout the project's development areas. The drainage system is broken into numerous DMA subareas, each designed to separately capture, and treat various disconnected impervious areas.

### **Protect Existing Vegetation and Sensitive Areas**

There are no sensitive or natural areas on-site. The site has been fully development and graded previously. With that said, existing manufactured slopes above the proposed development will be maintained. To reduce grading and maintain these upper slopes, terraced retaining walls are incorporated into the design.

### **Revegetate Disturbed Areas**

Native and/or tolerant landscaping will be incorporated into site design, consistent with City guidelines, in proposed landscaping areas.

### **Soil Stockpiling and Site Generated Organics**

The geotechnical report includes recommendations for over-excavation of the proposed development limits to a depth of 5-ft below finished surface/bottom of structures. There may be temporary stockpiling of excavated soil prior to replacement and compaction. Any such soil stockpiling would be protected in place in accordance with a soil erosion plan to prevent erosion.

Beyond these site preparation activities, we don't anticipate significant soil stockpiling on-site. Most of the proposed development is in cut, so that soil and associated site-generated organics will be hauled off-site and disposed of properly. Any topsoil which is to be stockpiled for landscaping throughout the site will be stored using best practices to maintain the quality of the soil and prevent erosion.

### **Firescaping**

A fuel modification plan will be prepared in accordance with OCFA requirements.

### **Water Efficient Landscaping**

Water efficient landscape irrigation will be incorporated into site design, consisted with City guidelines. It should also be noted that the project will use available reclaimed water.

### **Slopes and Channel Buffers**

Retaining walls will be installed to support ascending slopes to the south and east. Construction of these walls will follow geotechnical recommendations regarding temporary construction slopes and shoring to maintain slope stability above. Over-excavation will be performed around the pad and descending slope to the west to ensure proper compaction. Sub drains will be installed below all structures to minimize differential settlement and maintain stability of the site and slopes. Slopes will be protected against erosion by using terrace drains to control and direct runoff through the site.

## **4.3 DMA Characteristics and Site Design BMPs**

As this site redevelopment project adds/replaces more than 50% of existing impervious, all impervious must be treated, as well as any pervious surfaces which cannot be hydrologically separated from untreated on-site runoff. This project proposes to use proprietary biotreatment devices to treat all required surface runoff. This treatment will be accomplished in each subarea throughout the site; after treatment by these devices, runoff will be routed to a network of storm drains. Separately, runoff from off-site pervious surfaces is largely limited to the slopes above the graded pad and proposed retaining walls. This runoff will be collected by concrete gutters and directed to inlets and then to the backbone storm drains. On-site and off-site water will not combine prior to treatment, so a shared backbone storm drain in each DMA is acceptable. This storm drain network will route runoff to detention basins in DMA's 2 and 3 to mitigate peak flow rates.

A detailed breakdown of BMP's by DMA and DMA subarea follows.

### **4.3.1 DMA 1**

DMA 1 contains the northeastern portion of the site which drains to La Plata Drive. This part of the site includes the church structure, landscape improvements and most of the Church parking lot, as well as the existing slopes above the developed area. DMA 1 is broken down into several subareas:

- Subarea 1A (0.57 ac): ascending slope above parking lot – existing landscaped slope to remain, self-mitigating.
- Subarea 1B (0.22 ac): ascending slope above Church building – existing landscaped slope to remain, self-mitigating.
- Subarea 1C (0.14 ac): remodeled portion of building and adjacent pad and walkways. Area treated by Focal Point Bio-Treatment Device
- Subarea 1D (0.16 ac): southwesterly portion of Church parking lot. Area treated by Focal Point Bio-Treatment Device
- Subarea 1E (0.23 ac): central portion of Church parking lot. Area treated by Focal Point Bio-Treatment Device
- Subarea 1F (0.38 ac): Church building courtyards, frontage landscaping and northerly portion of building. Area treated by Focal Point Bio-Treatment Device.
- Subarea 1G (0.20 ac): northerly portion of reconstructed parking lot. Area treated by Focal Point Bio-Treatment Device.
- Subarea 1H (0.07 ac): descending slope below the parking lot – existing landscaped slope to remain, self-mitigating.

Subareas 1A, 1B and 1H contain completely pervious existing slopes with existing landscaping and will not be impacted during construction. These areas are not co-mingled with untreated surface runoff from the new impervious areas and will not be treated with fertilizers or pesticides, so they can be categorized as “self-mitigating”. Within Subarea 1H, interlocking pavers will be used for the Church entrance; since these are pervious, this portion will not be counted towards required treatment volume and will be allowed to sheet flow off-site.

Findings from the soils report for this site found that the native soil is not conducive to infiltration, so an infiltration-based BMP cannot be considered. There is not enough landscaping for a harvest and reuse system to be feasible.

Stormwater runoff from the remaining subareas will surface flow (e.g. sheet flow, swales, concrete gutter) to appropriately sized FocalPoint biotreatment devices – refer to *Water Quality Calculations (Attachment F)*. These devices use a proprietary soil mix to filter runoff; from there, runoff will be discharged to a private storm drain. This runoff will be released via parkway culvert to the gutter of La Plata Drive; from here runoff will flow to the downstream catch basin and be conveyed by the existing public storm drains to Sulphur Creek Channel (OCFCD Facility No. J301).

### **4.3.2 DMA 2**

DMA 2 contains the middle portion of the site which drains to Crown Valley Parkway. This part of the site the northerly half of the proposed Assisted Living facility, the assisted living driveway, the southernmost section of the parking lot, and a portion of the existing slopes above the developed area. DMA 2 is broken down into several subareas:

- Subarea 2A (0.43 ac): ascending slope above parking lot – existing landscaped slope to remain, self-mitigating
- Subarea 2B (0.28 ac): fire access driveway, assisted living surface parking. Area treated by Focal Point Bio-Treatment Device
- Subarea 2C (0.08 ac): parking lot. Area treated by Focal Point Bio-Treatment Device
- Subarea 2D (0.10 ac): fire access walkway, landscaping, portion of assisted living roof. Area treated by Focal Point Bio-Treatment Device
- Subarea 2E (0.12 ac): portions of assisted living roof. Area treated by Focal Point Bio-Treatment Device
- Subarea 2F (0.14 ac): porte cochere – consisting of interlocking (permeable) pavers, with perforated pipes and liner, self-mitigating
- Subarea 2G (0.15 ac): assisted living courtyard. Area treated by Focal Point Bio-Treatment Device
- Subarea 2H (0.46 ac): portions of assisted living roof. Area treated by Focal Point Bio-Treatment Device
- Subarea 2J (0.12 ac): portions of assisted living roof. Area treated by Focal Point Bio-Treatment Device
- Subarea 2K (0.33 ac): assisted living driveway and garage entrance. Area treated by Focal Point Bio-Treatment Device
- Subarea 2L (0.11 ac): landscaped, descending slope to adjacent lot (day care facility), self-mitigating
- Subarea 2M (0.25 ac): landscaped, descending slope between assisted living and Crown Valley Parkway, self-mitigating

Subareas 2A, 2L, and 2M contain completely pervious slopes with landscaping. These subareas will not be co-mingled with surface runoff from the new impervious areas and will not be treated with fertilizers or pesticides, so they can be categorized as “self-mitigating”. Subarea 2F contains the main assisted entry area (porte cochere) and will be constructed with interlocking pavers; these are considered pervious, so this subarea will be treated as self-mitigating. It’s worth noting that the pavers will be underlaid by a liner and perforated sub drains to route treated water to storm drains.

Findings from the soils report for this site found that the native soil is not conducive to infiltration, so an infiltration-based BMP cannot be considered. There is not enough landscaping for a harvest and reuse system to be feasible.

Stormwater runoff from the remaining subareas will surface flow (e.g. sheet flow, swales, concrete gutter) to appropriately sized FocalPoint biotreatment devices – refer to *Water Quality Calculations (Attachment F)*. These devices use a proprietary soil mix to filter runoff; from there, runoff will be discharged to a private storm drain.

Runoff from Subareas 2A through 2F are routed to a detention basin (Tank 1) under the parking lot (in Subarea 1H), while runoff from Subareas 2G and 2H are routed to an underground detention chamber (Tank 2) beneath the garage entryway. These two chambers and outlet pipes are sized per site hydrology calculations to control peak flow rates – see *Hydrology Report (Attachment G)*.

Stormwater generated within DMA 2 will be released to POC #2 – a storm drain connection to the existing catch basin in Crown Valley, from which it will be conveyed to Sulphur Creek Channel (OCFCD Facility No. J301).

### **4.3.3 DMA 3**

DMA 3 contains the southerly portion of the site which drains to Crown Valley Parkway. This part of the site includes the southerly part of the Assisted Living facility, the fire access drive, and portions the existing slopes above the developed area. DMA 3 is broken down into several subareas:

- Subarea 3A (0.33 ac): ascending slope above parking lot – existing landscaped slope to remain, self-mitigating
- Subarea 3B (0.07 ac): memory care courtyard. Area treated by Focal Point Bio-Treatment Device
- Subarea 3C (0.69 ac): portion of assisted living roof, fire turnaround, walkways. Area treated by Focal Point Bio-Treatment Device
- Subarea 3D (0.13 ac): portion of assisted living roof. Area treated by Focal Point Bio-Treatment Device
- Subarea 3E (0.13 ac): landscaped, descending slope along Crown Valley Parkway frontage, self-mitigating
- Subarea 3F (0.31 ac): landscaped, descending slope along Crown Valley Parkway frontage, self-mitigating

Subareas 3A, 3E and 3F contain completely pervious existing slopes with landscaping and will not be impacted during construction. These areas are not co-mingled with surface runoff from the new impervious areas and will not be treated with fertilizers or pesticides, so they can be categorized as “self-mitigating”.

Findings from the soils report for this site found that the native soil is not conducive to infiltration, so an infiltration-based BMP cannot be considered. There is not enough landscaping for a harvest and reuse system to be feasible.

Stormwater runoff from Subareas 3B, and 3C will surface flow (e.g. sheet flow, swales, concrete gutter) to appropriately sized FocalPoint biotreatment devices – refer to *Water Quality Calculations (Attachment F)*. These devices use a proprietary soil mix to filter runoff; from there, runoff will be discharged to a private storm drain.

Runoff from Subareas 3A through 3C are routed to a detention basin under the fire turnaround. This chamber and its outlet pipes are sized per site hydrology calculations to control peak flow rates – see *Hydrology Report (Attachment G)*.

Stormwater generated within DMA 3 will be released via parkway culvert to the gutter of Crown Valley Parkway (POC #3). From here, runoff will continue flowing in a southerly direction to the next downstream catch basin, and from there to Sulphur Creek Channel (OCFCD Facility No. J301).

#### 4.3.4 DMA Summary

<b>Drainage Management Areas</b>				
DMA (Number/ Description)	Total Area (acres)	Imperviousness (%)	Infiltration Feasibility Category (Full, Partial, or No Infiltration)	Hydrologic Source Controls Used
DMA 1, North Section	1.97	43	No Infiltration	N/A*
DMA 2, Middle Section	2.57	54	No Infiltration	N/A*
DMA 3, South Section	1.66	45	No Infiltration	N/A*

*\*Infiltration is not feasible, and saturation of expansive soil could result in undesired impacts, so all stormwater is directed to biotreatment devices and once cleaned, released to a detention tank and then the right-of-way.*

#### 4.4 Source Control BMPs

<b>Non-Structural Source Control BMPs</b>				
Identifier	Name	Check One		Reason Source Control is Not Applicable
		Included	Not Applicable	
N1	Education for Property Owners, Tenants and Occupants	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

**Water Quality Management Plan (WQMP)**  
**Laguna Niguel Senior Assisted Living Center and Grace Church Remodel**

N2	Activity Restrictions	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Activity restrictions are not anticipated
N3	Common Area Landscape Management	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N4	BMP Maintenance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N5	Title 22 CCR Compliance (How development will comply)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Hazardous waste is not anticipated to be present on the site
N6	Local Industrial Permit Compliance	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No industrial facilities proposed
N7	Spill Contingency Plan	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Hazardous waste is not anticipated to be present on the site
N8	Underground Storage Tank Compliance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N9	Hazardous Materials Disclosure Compliance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N10	Uniform Fire Code Implementation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N11	Common Area Litter Control	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N12	Employee Training	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N13	Housekeeping of Loading Docks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No loading docks proposed
N14	Common Area Catch Basin Inspection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N15	Street Sweeping Private Streets and Parking Lots	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N16	Retail Gasoline Outlets	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No retail gasoline outlets proposed

<b>Structural Source Control BMPs</b>				
<b>Identifier</b>	<b>Name</b>	<b>Check One</b>		<b>Reason Source Control is Not Applicable</b>
		<b>Included</b>	<b>Not Applicable</b>	
S1	Provide storm drain system stenciling and signage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S2	Design and construct outdoor material storage areas to reduce pollution introduction	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S3	Design and construct trash and waste storage areas to reduce pollution	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

**Water Quality Management Plan (WQMP)**  
**Laguna Niguel Senior Assisted Living Center and Grace Church Remodel**

	introduction			
S4	Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S5	Protect slopes and channels and provide energy dissipation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Incorporate requirements applicable to individual priority project categories (from SDRWQCB NPDES Permit)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S6	Dock areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No dock areas proposed
S7	Maintenance bays	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No maintenance bays proposed
S8	Vehicle wash areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No vehicle wash areas proposed
S9	Outdoor processing areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No outdoor processing areas proposed
S10	Equipment wash areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No exterior equipment wash areas proposed
S11	Fueling areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No fueling areas proposed
S12	Hillside landscaping	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S13	Wash water control for food preparation areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
S14	Community car wash racks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No community car wash racks proposed



## **Section 5 Low Impact Development BMPs**

### **5.1 LID BMP Selection**

Per the TGD, Low Impact Development (LID) BMPs must be incorporated into design features and source controls to reduce project related storm water pollutants. The incorporation of LID BMPs into project design requires evaluation of LID measures in the following treatment hierarchy: infiltration, evapotranspiration, harvest/reuse and biotreatment.

#### **5.1.1 Hydrologic Source Controls**

##### *HSC-3 Street Trees*

Trees will be planted along the project's parkways to intercept rainfall and provide some volume reduction benefits for the project.

The benefits of incorporating trees are considered incidental to the overall calculations, so the potential reduction credits from the HSC have been disregarded in determining the project's DCV.

#### **5.1.2 Structural LID BMPs**

##### *Structural BMP consideration*

Due to the presence of unfavorable soil types (Type "C") in the development area, BMPs that employ infiltration as a primary mechanism for pollutant removal are not feasible for this project.

Evapotranspiration (ET) BMPs are a class of retention BMPs that discharge stored volumes predominately to ET, though some infiltration may occur. BMPs must be designed to achieve the maximum feasible ET, where required to demonstrate that the maximum amount of water has been retained on-site. Since ET is not the sole process in these BMPs, specific design and criteria have not been developed for ET-based BMPs.

Harvest and Reuse (aka Rainwater Harvesting) BMPs are LID BMPs that capture and store storm water runoff for later use. These BMPs are engineered to store a specified volume of water and have no design surface discharge until this volume is exceeded. As indicated in Section 3.2.3 of this WQMP, harvest and reuse is not required for this project, as the estimated drawdown time far exceeds 48 hours. This project does not propose the use of harvesting BMPs as sources of reclaimed water are available for irrigation of the project's open space areas. Based on Section 2.8 of the TGD, if sufficient reclaimed water supply is available to meet the project's demand for use, then the project is allowed to consider harvest and use to be infeasible.

Biofiltration BMPs will be employed to address low flow (irrigation and other non-storm water runoff) and storm water runoff from project areas.

*Biotreatment BMPs*

Biotreatment BMPs are a class of structural LID BMPs that treat suspended solids and dissolved pollutants in storm water using mechanisms characteristic of biologically active systems. These BMPs are considered treat and release facilities and include treatment mechanisms that employ soil microbes and plants. Additional benefits of these BMPs may include aesthetic enjoyment, recreational use, wildlife habitat, and reduction in storm water volume.

The project proposes the use of proprietary biofiltration facilities (BIO-5) throughout the site. Specifically, FocalPoint, or approved equal, biotreatment areas will be installed at multiple locations within the development area. The overall site has been broken down into individual subareas – based on the required treatment volume for each subarea, an appropriately sized biotreatment area will be constructed within a landscape area, adjacent to hardscape where applicable. The biotreatment device will be lined, and a sub-drain will be installed to convey treated storm to the on-site storm drain infrastructure

Hardscape areas will also, where feasible, employ PaveDrain, or approved equal, permeable pavers with storage capacity. These pavers will provide pre-treatment detention, lowering the peak treatment flow rate, and thus reducing the footprint of the biotreatment devices.

Underground detention tanks will be utilized post-treatment to accomplish the required hydromodification in DMAs 2 and 3. The Water Quality Plan specifies R-Tank (or approved equal) which will be lined, and outlet to storm drains. These storm drains will convey runoff to Crown Valley Parkway.

Refer to the Proposed Water Quality Plan in Attachment F for specific locations and size of structural BMPs. Refer to Attachment H for BMP sizing calculation.

**5.2 Summary of LID BMPs**

<b>LID BMP Summary</b>		
<b>DMA</b>	<b>Structural BMP Type</b>	<b>BMP Size</b>
DMA 1	Biotreatment Device (FocalPoint, or approved equal)	222 SF
DMA2	Biotreatment Device (FocalPoint, or approved equal)	374 SF
DMA 3	Biotreatment Device (FocalPoint, or approved equal)car wash racks	170 SF

## Section 6 Hydromodification BMPs

### 6.1 Points of Compliance

Points of compliance (POC) for this project were designated after evaluating where each DMA outlets to. Since there may be more than a single curb drain or parkway culvert in a given DMA, the POC was then situated at the downstream-most outlet or point of convergence for the entire DMA. POCs for this project are:

- DMA 1 - at the outlet to the curb/gutter on the south side La Plata Drive, at the northwesterly property corner
- DMA 2 - inlet on the west side of Crown Valley Parkway, at the middle of project frontage
- DMA 3 - at the outlet to the curb/gutter on the west side of Crown Valley Parkway, at the southerly property line

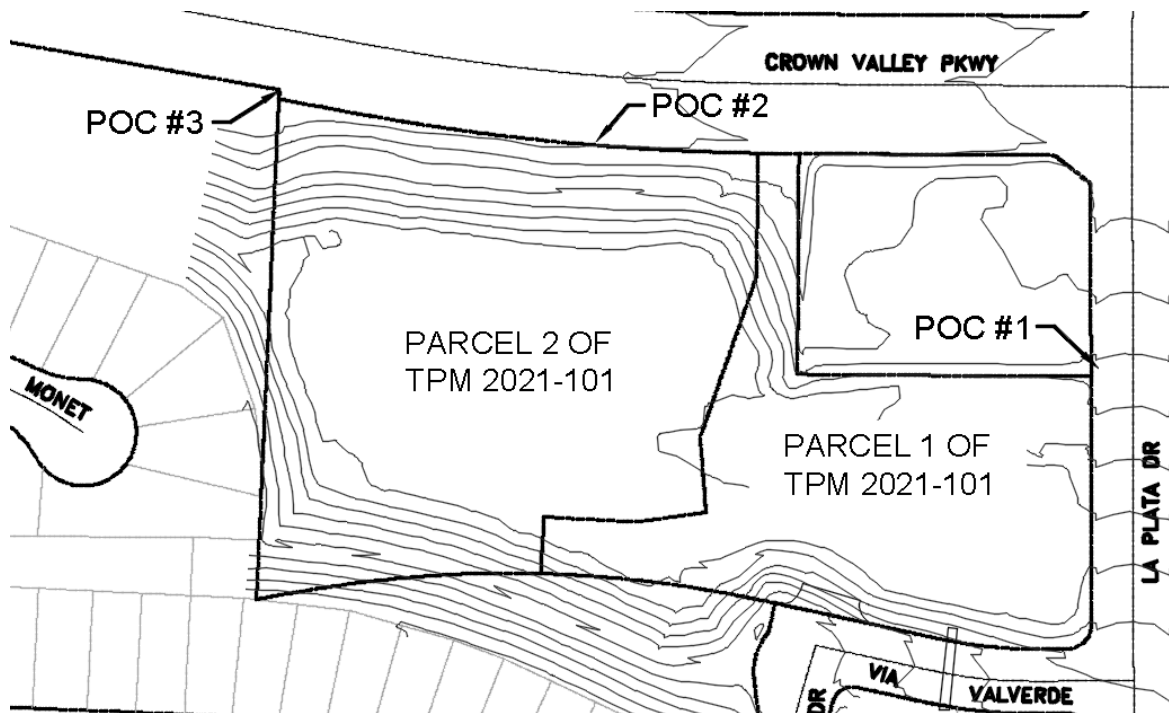


Fig. 3: Points of Compliance

### 6.2 Pre-Development (Natural) Conditions

Refer to Existing Conditions Plan in Attachment D.

### 6.3 Post-Development Conditions and Hydromodification BMPs

Refer to Proposed Water Quality Plan in Attachment F.

## **6.4 Measures for Avoidance of Critical Coarse Sediment Yield Areas**

While the project is located within a non-exempt part of Laguna Niguel, and the descending slope to Crown Valley is depicted as a Potential Course Sediment area, the related project is for the redevelopment of an existing developed site, and therefore the critical coarse sediment provisions are not applicable.

## **6.5 Hydrologic Modeling and Hydromodification Compliance**

Using the South Orange County Hydrologic Model methodology, pre- and post-development hydrologic conditions were evaluated and underground detention chambers were incorporated as hydromodification BMPs - refer to *Hydrology Report (Attachment G)*.

## **Section 7 CEQA Guidelines – Appendix G**

### **Environmental Checklist Section IX**

This project provides for treatment of stormwater from the 85th percentile storm in accordance with the South Orange County Technical Guidance Document and San Diego Regional Water Board MS4 permit, and thus will satisfy CEQA Guidelines Appendix G Environmental Checklist compliance to Section IX, Hydrology and Water Quality Items – refer also to Hydrology Report for further discussion.

The following are the responses to the 2021 CEQA Guidelines Appendix G Environmental Checklist Section IX. Hydrology and Water Quality Items:

**a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality? *Less Than Significant with Mitigation Incorporated***

#### **SIGNIFICANCE ANALYSIS:**

As described within the Project’s Hydrology Report and WQMP the proposed development project will adequately mitigate stormwater treatment, detention and comply with the current San Diego Regional Water Board MS4 Permit, SOC-TGD and the City of Laguna Niguel requirements. Proprietary biotreatment systems spread throughout the site will provide adequate pass-through treatment of runoff for maintaining stormwater quality, and underground detention structures will detain stormwater onsite to meet the allowable mitigated peak flow rate at each Point of Compliance. Therefore, the preliminary design of the onsite drainage system will satisfy the requirements of the EIA, SWQDv and hydromodification. ***Less Than Significant With Mitigation Incorporated.***

**b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?**

***No Impact.***

#### **SIGNIFICANCE ANALYSIS:**

As described herein, the project does not propose to directly infiltrate stormwater and release the stormwater onsite through percolation, nor does it propose any pumping of groundwater. Further, the Proposed project will be connected to the City Sewer System and will not utilize any onsite septic systems. Therefore, there is no decrease to the groundwater supplies nor interference with groundwater recharge and thus ***“No Impact”***.

**c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:**

**i) result in substantial erosion or siltation on or off-site; *Less Than Significant Impact with Mitigation Incorporated***

**ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or offsite; *Less Than Significant Impact with Mitigation Incorporated***

**iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; *Less Than Significant Impact with Mitigation Incorporated***

**iv) impede or redirect flood flows? *No Impact.***

**SIGNIFICANCE ANALYSIS:**

- i) This project includes hillside construction, which has the potential to result in erosion/siltation during and after construction. Proposed improvements, including landscaped and installation of terrace drains will mitigate these potential impacts. Furthermore, biotreatment devices and catch basin filters will assist in removing sediment from stormwater runoff. Therefore, the project is not expected to result in erosion or siltation either on- or off-site.
- ii) The project will increase the amount of impervious surfaces and therefore has the potential to increase surface runoff. To mitigate this potential impact to less than significant, underground detention facilities will be provided that will reduce peak stormwater runoff.
- iii) Stormwater runoff will drain in a similar fashion as existing condition, to La Plata or Crown Valley, and be directed via public storm drains to Sulphur Creek Channel (OCFCD Facility No. J301). As stated in ii) above, detention facilities will be provided, reducing peak stormwater runoff. Therefore, with the proposed mitigation, impacts will be less than significant.
- iv) There are no flood flows traversing the site; therefore the project will not impede or redirect flood flows and there is no impact.

**d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to inundation. *No Impact***

**SIGNIFICANCE ANALYSIS:**

Based on the geographical location of the site and existing topographical pad elevation of 290 feet above mean sea level (amsl) according to the Geotechnical Report prepared by Stoney-Miller Consultants, Inc. there is no risk of tsunami nor seiche nor mudflow risks and consequently no risk of pollutants due to inundation.

The project is outside of the 100-year flood hazard area. *Therefore, there is No Impact.*

***e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? Less Than Significant With Mitigation Incorporated.***

**SIGNIFICANCE ANALYSIS:**

As described within the Project's Hydrology Report and WQMP the proposed development project will adequately mitigate stormwater treatment, detention and comply with the current San Diego Regional Water Board MS4 Permit, SOC-TGD and the City of Laguna Niguel requirements. Proprietary biotreatment systems spread throughout the site will provide adequate pass-through treatment of runoff for maintaining stormwater quality, and underground detention structures will detain stormwater onsite to meet the allowable mitigated peak flow rate at each Point of Compliance. Therefore, the preliminary design of the onsite drainage system will satisfy the requirements of the EIA, SWQDv and hydromodification. ***Less Than Significant With Mitigation Incorporated.***

## Section 8 Educational Materials Index

<b>Educational Materials</b>			
<b>Residential Material</b> <b>(<a href="http://www.ocwatersheds.com">http://www.ocwatersheds.com</a>)</b>	<b>Check If</b> <b>Applicable</b>	<b>Business Material</b> <b>(<a href="http://www.ocwatersheds.com">http://www.ocwatersheds.com</a>)</b>	<b>Check If</b> <b>Applicable</b>
The Ocean Begins at Your Front Door	<input type="checkbox"/>	Tips for the Automotive Industry	<input type="checkbox"/>
Tips for Car Wash Fund-raisers	<input type="checkbox"/>	Tips for Using Concrete and Mortar	<input type="checkbox"/>
Tips for the Home Mechanic	<input type="checkbox"/>	Tips for the Food Service Industry	<input checked="" type="checkbox"/>
Homeowners Guide for Sustainable Water Use	<input type="checkbox"/>	Proper Maintenance Practices for Your Business	<input checked="" type="checkbox"/>
Household Tips	<input type="checkbox"/>	Compliance BMPs for Mobile Businesses	<input type="checkbox"/>
Proper Disposal of Household Hazardous Waste	<input type="checkbox"/>	<b>Other Material</b>	<b>Check If Attached</b>
Recycle at Your Local Used Oil Collection Center (North County)	<input type="checkbox"/>		
Recycle at Your Local Used Oil Collection Center (Central County)	<input type="checkbox"/>		
Recycle at Your Local Used Oil Collection Center (South County)	<input type="checkbox"/>		
Tips for Maintaining a Septic Tank System	<input type="checkbox"/>		<input type="checkbox"/>
Responsible Pest Control	<input type="checkbox"/>		<input type="checkbox"/>
Sewer Spill	<input type="checkbox"/>		<input type="checkbox"/>
Tips for the Home Improvement Projects	<input type="checkbox"/>		<input type="checkbox"/>
Tips for Horse Care	<input type="checkbox"/>		<input type="checkbox"/>
Tips for Landscaping and Gardening	<input type="checkbox"/>		<input type="checkbox"/>
Tips for Pet Care	<input type="checkbox"/>		<input type="checkbox"/>
Tips for Projects Using Paint	<input type="checkbox"/>		<input type="checkbox"/>