PRELIMINARY WATER QUALITY MANAGEMENT PLAN (WQMP)



FOR

SERRANO HIGHLANDS
TENTATIVE TRACT 15594
LAKE FOREST, CA 92977

Prepared for:

WESTBAY TRUST AND MADISON INVESTORS LP
AS TENANTS IN COMMON
25108 Marguerite Parkway
Suite A-132
Mission Viejo, CA 92691

Prepared by:

Hunsaker and Associates Irvine, Inc.
Three Hughes
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(949) 583-1010

PREPARED: AUGUST 3, 2011

WO # 0245-9X

Preliminary
Water Quality Management Plan
(WQMP)

for:

SERRANO HIGHLANDS
Tentative Tract No. 15594

North and East of the Peachwood/Tamarisk Street Intersection
Lake Forest, CA 92630

APNs: 610-204-01 & -05, 601-351-05

Prepared for:

Westbay Trust and Madison Investors LP as Tenants in Common
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PREPARED: August 3, 2011

W.O. 0245-9X

Owner's Certification
Water Quality Management Plan (WQMP)

Serrano Highlands
Tentative Tract No. 15594

This Water Quality Management Plan (WQMP) has been prepared for Westbay Trust and Madison Investors LP as Tenants In Common by Hunsaker and Associates. The WQMP is intended to comply with the requirements of the City of Lake Forest Urban Runoff Management Program and Storm Water Ordinance, as well as the Municipal Storm Water Permit which require the preparation of WQMPs for priority development projects.

The undersigned, while it owns the subject property, is responsible for the implementation of the provisions of this WQMP. The undersigned will ensure that this plan is carried out and amended as appropriate to reflect up-to-date conditions on the site consistent with the current City of Lake Forest Urban Runoff Management Program and the intent of the NPDES/MS4 Permit for Waste Discharge Requirements as authorized by the State and EPA. Once 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.

This WQMP will be reviewed with the facility operator, facility supervisors, employees, tenants, maintenance and service contractors, or any other party having responsibility for implementing portions of this WQMP.

Signed: _____

Name: GARY R. EMSIEK

Title: GENERAL PARTNER

Company: MADISON INVESTORS LP

Address: 25108 MARGUERITE PKWY
MISSION VIEJO, CA 92691

Telephone #: 949.322.6980

Date: JULY 28, 2011

Email Address: TETONROCK@AOL.COM

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SECTION 1

Section 1 Project Description

1.	**Detailed development description:** Madison Investors proposes Tentative Tract Map TTM 15594 as a development of 85 detached single family residences, streets, sidewalks, open space, utility easements and other related improvements. Multi-story residential units will range in size from approximately 3,198 sf to 3,797 sf. Lot sizes for the residential development will range in size from approximately 4,008 sf to 7,670 sf. Other than the private park with tot lot proposed on lot 86, the pocket park within common area Lot R and the private common area open space lots, (i.e. Lots A through Z inclusive) no other onsite common area community facilities such as laundry, car wash, swimming pools or Jacuzzis are proposed for the project. The project is located to the east of existing Tamarisk Park (Not a part) This project is classified as a Priority Project, Category 1 (residential development of 10 units or more) per the Orange County Drainage Area Management Plan (DAMP) and the City of Lake Forest WQMP. Therefore, treatment control BMPs are required to remove pollutants typically associated with urban runoff.
2.	**Project location and site address:** The site is located northeast of the intersection of Peachwood and Tamarisk Street intersection. Thomas Brothers Guide Page 861, Grid J7.
3.	**Property size:** The proposed project is approximately 24.6 acres, (1,071,580 sf)
4.	**Existing use:** The existing site includes the Cul-de sac portion of Peachwood street, but is otherwise vacant.

5. Type of development:

The project is a detached residential development with related improvements. There will be 86 numbered lots and 26 lettered lots. Additional project data is provided in the following tables.

Summary of Net Residential Lot Areas

Lot No.	Net Sq. Ft.	Acres	Lot No.	Net Sq. Ft.	Acres	Lot No.	Net Sq. Ft.	Acres
1	5,926	0.136	30	4,841	0.111	59	3,542	0.081
2	4,539	0.104	31	3,532	0.081	60	3,620	0.083
3	4,110	0.094	32	3,468	0.08	61	3,630	0.083
4	4,142	0.095	33	3,503	0.08	62	4,678	0.107
5	4,534	0.104	34	3,950	0.091	63	5,113	0.117
6	4,222	0.097	35	4,132	0.095	64	6,024	0.138
7	5,487	0.126	36	3,861	0.089	65	5,947	0.137
8	4,501	0.103	37	3,530	0.081	66	4,663	0.107
9	4,598	0.106	38	3,506	0.08	67	5,223	0.12
10	6,175	0.142	39	3,621	0.083	68	6,055	0.139
11	7,610	0.175	40	3,560	0.082	69	5,626	0.129
12	6,296	0.145	41	3,634	0.083	70	5,105	0.117
13	5,022	0.115	42	3,698	0.085	71	6,578	0.151
14	4,535	0.104	43	4,799	0.11	72	5,853	0.134
15	4,241	0.097	44	5,324	0.122	73	4,565	0.105
16	3,744	0.086	45	5,119	0.118	74	3,925	0.09
17	4,161	0.096	46	4,950	0.114	75	4,963	0.114
18	5,987	0.137	47	3,721	0.085	76	4,906	0.113
19	4,127	0.095	48	4,326	0.099	77	4,735	0.109
20	3,670	0.084	49	7,216	0.166	78	4,261	0.098
21	3,936	0.09	50	4,060	0.093	79	4,356	0.1
22	3,880	0.089	51	4,453	0.102	80	4,136	0.095
23	5,020	0.115	52	4,529	0.104	81	4,051	0.093
24	5,723	0.131	53	4,713	0.108	82	4,027	0.092
25	4,041	0.093	54	4,182	0.096	83	4,422	0.102
26	4,019	0.092	55	4,926	0.113	84	4,990	0.115
27	5,741	0.132	56	6,650	0.153	85	5,581	0.128
28	5,116	0.117	57	4,445	0.102	86*	5,822	0.134
29	4,248	0.098	58	4,384	0.101	**Total**	**402,381**	**9.237**

* Note: Lot 86 is a private park which shall be maintained by the HOA.

Summary of Gross Residential Lot Areas

Lot No.	Gross Sq. Ft.	Acres	Lot No.	Gross Sq. Ft.	Acres	Lot No.	Gross Sq. Ft.	Acres
1	5926	0.136	30	5238	0.12	59	4081	0.094
2	4715	0.108	31	4075	0.094	60	4164	0.096
3	4110	0.094	32	4008	0.092	61	4635	0.106
4	4257	0.098	33	4038	0.093	62	4815	0.111
5	4690	0.108	34	4100	0.094	63	5499	0.126
6	4381	0.101	35	4270	0.098	64	6352	0.146
7	5550	0.127	36	4524	0.104	65	6036	0.139
8	4578	0.105	37	4091	0.094	66	4815	0.111
9	4715	0.108	38	4052	0.093	67	5400	0.124
10	6244	0.143	39	4179	0.096	68	6209	0.143
11	7675	0.176	40	4114	0.094	69	5803	0.133
12	6415	0.147	41	4189	0.096	70	5275	0.121
13	5173	0.119	42	5066	0.116	71	6889	0.158
14	4689	0.108	43	5488	0.126	72	6123	0.141
15	4391	0.101	44	5503	0.126	73	4960	0.114
16	4695	0.108	45	5273	0.121	74	4075	0.094
17	4297	0.099	46	5120	0.118	75	5383	0.124
18	6796	0.156	47	4281	0.098	76	5057	0.116
19	4284	0.098	48	4842	0.111	77	4883	0.112
20	4184	0.096	49	7271	0.167	78	4409	0.101
21	4379	0.101	50	4638	0.106	79	4503	0.103
22	4314	0.099	51	5063	0.116	80	4286	0.098
23	5020	0.115	52	5192	0.119	81	4202	0.096
24	5820	0.134	53	4864	0.112	82	4178	0.096
25	4129	0.095	54	4315	0.099	83	4607	0.106
26	4019	0.092	55	5015	0.115	84	4644	0.118
27	5741	0.132	56	7670	0.176	85	4439	0.132
28	5541	0.127	57	5035	0.116	86	6443	0.148
29	4400	0.101	58	4974	0.114	**Total**	**429,608**	**9.862**

* Note: Lot 86 is a private park which shall be maintained by the HOA.

Open Space Lot Area Summary

Lot	Area (S.F.)	Maintenance Responsibilities
A	16,660	Home Owners Association
B	12,996	Home Owners Association
C	49,303	Home Owners Association
D	895	Home Owners Association
E	18,432	Home Owners Association
F	34,332	Home Owners Association
G	2,054	Home Owners Association
H	18,301	Home Owners Association
I	5,075	Home Owners Association
J	4,289	Home Owners Association
K	19,266	Home Owners Association
L	5,879	Home Owners Association
M	2,471	Home Owners Association
N	2,443	Home Owners Association
O	926	Home Owners Association
P	18,696	Home Owners Association
Q	4,909	Home Owners Association
R*	128,161	Home Owners Association
S	14,297	Home Owners Association
T	12,208	Home Owners Association
U	34,332	Home Owners Association
V	125,022	Home Owners Association
W	2,600	Home Owners Association
X	54,927	Home Owners Association
Y	40,306	Home Owners Association
Z	51,064	Home Owners Association

Total	679,844 S.F.
	15.6 AC.

* Lot R includes a pocket park which shall also be maintained by the HOA.

Residential Unit Mix Tabulation

Unit Type	No. Units
Plan 1	22
Plan 2	31
Plan 3	32
Total	**85**

Plan Types

Plan 1	
Ground Floor Total	2,046 sf (including garage)
Garage	459 sf
Total Square Footage	3,198 sf (+459 sf for optional third floor)
Plan 2	
Ground Floor Total	2,011 sf (including garage)
Garage	464 sf
Total Square Footage	3,574 sf (third floor included)
Plan 3	
Ground Floor Total	2,020 sf (including garage)
Garage	424 sf
Total Square Footage	3,797 sf (third floor included)

6. Impervious/pervious surface areas:

In the developed condition impervious areas will consist of streets, common access ways, sidewalks and rooftops. Area quantities are listed in the table below:

Project Area	Pre construction			Post construction		
	Acreage	Sq. ft.	%	Acreage	Sq. ft.	%
Total Space	24.6 ac.	1,071,580	100%	24.6 ac.	1,071,580	100%
Pervious	23.6 ac.	1.026,702	96%	11.2 ac	486,655	45%
Impervious	1.0 ac.	44,878	4%	13.4 ac.	584,925	55%

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7. Property ownership:

The proposed project is a planned community that will be incorporated into an existing Homeowner's Association. Until such time as the contact information for the HOA is established, the project's developer Madison Investors will serve as the HOA contact. The contact person for Madison Investors is Gary Emsiek at Madison Investors who can be reached at Madison Investors, 23201 Mill Creek Drive, Suite 130, Laguna Hills, CA, (949) 472-6884.

8. Other:

SECTION 2

Section 2 Project Location Map

The project is located within the Serrano Highlands Planned Community Area. The location of the project site is illustrated in Figures 2.1 and 2.2, and can be found at Orange County Thomas Brothers Guide Page 861, Grid J7

Figure 2.1 Location Map

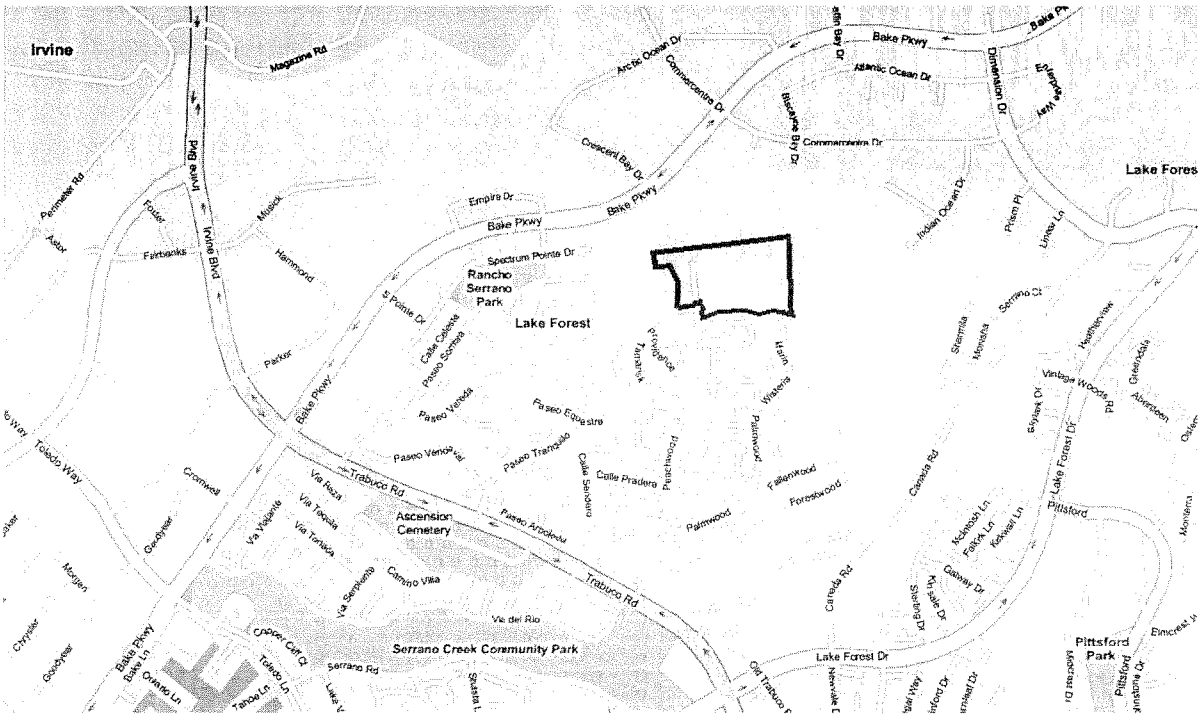

Figure 2.2 Aerial Photo

North
Not to scale

SECTION 3

Section 3 Project Site Assessment

This project site assessment section provides important information that is used when considering the potential water quality and hydrologic impacts that could be caused by the proposed project. This information is important when considering the appropriate BMPs to reduce identified potential impacts as well as when developing measures to reduce those impacts.

1.	**Zoning and land use designation:** The project is zoned as Medium Density Residential within the Serrano Highlands Planned Community per GPA 2008-02 and ZC 2008-06.
2.	**Existing and proposed drainage:** In the existing condition, the site receives run-on from north and adjacent Tract 13344, and the Pacific Commerce Center Site. Run-on also flows from the east and adjacent Irvine Ranch Water District Site Parcel Map No. 248-17 Site. Drainage sheet flows in a south to southwesterly direction across the site and is picked up by inlets along Peachwood and Oakville connecting to the existing local facility storm drain line F19P02. The proposed drainage pattern will divert site run-on underneath or around the site and flow in a south to southwesterly direction. Site runoff is discharged through underground storm drain lines to the existing storm drain line at Peachwood Street and to a landscaped buffer strip adjacent to the southerly edge of the Utility Easement. This drainage is picked up at Oakville Street. These lines eventually flow to the local facility storm drain line F19P02
3.	**Will the drainage system be modified by the development?** Yes, See Section 7 Exhibit A.
4.	**Will drainage coincide with City's system or flow to a creek or ocean?** Yes, Drainage will connect with the City of Lake Forest Storm Drain line F19P02 and will flow to Serrano Creek Channel (OCFCD F19) prior to discharging to San Diego Creek Channel F05 and ultimately Upper Newport Bay/Pacific Ocean.
5.	**Watershed and receiving waters:** The project is located in the Newport Bay Watershed. More specifically it is in the Serrano Creek drainage area of "Watershed F", San Diego Creek Subwatershed. The project flows to Serrano Creek Channel (F19), San Diego Creek Channel (F05) and the Upper Newport Bay/Pacific Ocean.
6.	**303(d) listed receiving waters:** The project is approximately 3.5 miles east via storm drains of the San Diego Creek Reach 2 (Cal Watershed 80111000) via Serrano Creek Channel F19. San Diego Creek Reach 2 is currently USEPA 2006 303d-listed for Metals (Urban Runoff/Storm Sewers). Further down is San Diego Creek Reach 1, which is 303(d) listed for Fecal Coliform (Urban Runoff/Storm Sewers and Other Urban Runoff), Selenium (Source Unknown) and Toxaphene (Source Unknown). Reach 1 extends 7.8 miles from Jeffrey to Upper Newport Bay (Ecological

Reserve). This waterbody is 303(d) listed for Chlordane (Source Unknown), Copper (Source Unknown), DDT (Source Unknown), Metals (Urban Runoff/Storm Sewers) PCBs (Source Unknown), and Sediment Toxicity (Source Unknown). Lower Newport Bay (Cal Watershed 80114000) is 303 (d) listed for Chlordane (Source Unknown), Copper (Source Unknown), DDT (Source Unknown), PCBs (Source Unknown), and Sediment Toxicity (Source Unknown).

7. Total Maximum Daily Loads (TMDLs):

Total Maximum Daily Loads (TMDLs) for San Diego Creek Reach 2, Metals was established July of 2007 (information can be found at the website below). TMDLs for San Diego Creek Reach 1 for Fecal Coliform and Toxaphene are proposed to be developed by 2019; TMDL information for Selenium can be obtained at the website below. The Upper Newport Bay TMDL for Copper and Metals was established July of 2007 (information can be found at the website below). TMDLs for Chlordane, DDT, PCBs, and Sediment Toxicity are proposed to be developed by 2019. The TMDL for Lower Newport Bay, Copper was established July of 2007 (information can be found at the website below). TMDLs for Chlordane, DDT, PCBs, and Sediment Toxicity are proposed to be developed by 2019.

http://www.swrcb.ca.gov/rwqcb8/water_issues/programs/tmdl/tmdl_toxics.shtml

Sediment TMDL information can be found here:
http://www.ocwatershed.com/Watersheds/default.aspx?ID=1000298
Nutrient TMDL information can be found here:
http://www.ocwatershed.com/Watersheds/default.aspx?ID=1000299
Toxics TMDL information can be found here:
http://www.ocwatershed.com/Watersheds/default.aspx?ID=1000300

8. Environmentally Sensitive Areas (ESAs) and/or Areas of Special Biological Significance (ASBA):

There are no Environmentally Sensitive Areas (ESAs) or Areas of Special Biological Significance (ASBSs) within the Serrano Creek Corridor of the San Diego Creek Watershed. The project does not directly discharge to any ESA or ASBS.

9. Soil type(s) and condition:

According to the "Limited Preliminary Geotechnical Investigation, Serrano Highlands, Tentative Tract 15594, City of Lake Forest, California" prepared for Madison Investors, LP, dated September 30th 2004, Onsite earth materials are comprised of "colluvial material consisted of silty sand, brown to grayish brown, slightly moist, porous and subject to consolidation. This material was mapped where thicknesses are greater than 4 feet. Alluvial material consisted of silty sand, medium brown to grayish brown, slightly moist to moist and medium dense in consistency. These materials are subject to consolidation and not suitable for structural support. Sandstone of the Capistrano formation, Oso Member, has been mapped throughout the site. This unit is characteristically light gray to white in color, and structurally massive. The sandstone is generally moderately hard and can be locally friable as well as cemented. The materials vary from silty fine sandstone to coarse grained sandstone."

The Natural Resources Conservation Service Web Soil Survey 2.0 shows the site as being comprised of 65.3% D-group soil, 16.7% C-group soil and 18% B-group soil.

Soils in the Group D category are described as having a high runoff potential. Soils having very slow infiltration rates when thoroughly wetted and consisting chiefly of clay soils with a

high swelling potential, soils with a permanent high water table, soils with a claypan or clay layer at or near the surface, and shallow soils over nearly impervious material. These soils have a very slow rate of water transmission.

Group C soils have slow infiltration rates when thoroughly wetted and consisting chiefly of silty-loam soils with a layer that impedes downward movement of water, or soils with moderately fine to fine texture. These soils have slow rate of water transmission.

Group B Soils have moderate infiltration rates when thoroughly wetted and consisting chiefly of moderately deep to deep, moderately well to well drained sandy-loam soils with moderately fine to moderately coarse textures. These soils have a moderate rate of water transmission.

SECTION 4

Section 4 Pollutants of Concern

This section of the water quality management plan identifies primary and secondary pollutants of concern. Pollutants of concern are those that are anticipated to be generated by the proposed project. Pollutants of concern are differentiated between primary and secondary depending on the condition of downstream receiving waters. If the project will drain to a receiving water that is impaired for a pollutant anticipated from that project, that pollutant is a primary pollutant of concern. Pollutants frequently identified on the 303(d) list of California impaired water bodies include metals, nitrogen, nutrients, indicator bacteria, pesticides and trash (see 303(d) list). In some cases, there may be specific conditions (i.e. other known water quality problems) that warrant identifying an anticipated pollutant as a primary pollutant of concern. If there is no corresponding impairment or other water quality problem in the receiving waters for an anticipated pollutant, the pollutant is a secondary pollutant of concern.

1. Project categories and features:

Madison Investors proposes Tentative Tract Map TTM 15594 as a development of 85 detached single family residences, streets, sidewalks, open space, utility easements and other related improvements. Multi-story residential units will range in size from approximately 3,198 sf to 3,797 sf. Lot sizes for the residential development will range in size from approximately 4,008 sf to 7,670 sf. Other than the private park with tot lot proposed on Lot 86, the pocket park within common Lot R and common area open space lettered Lots A-Z, no other onsite common area community facilities, such as car wash areas, laundry areas, swimming pools or jacuzzis are proposed for the project. The project is located to the east of existing Tamarisk Park (Not a part)

This project is classified as a Priority Project, Category 1 (residential development of 10 units or more) per the Orange County Drainage Area Management Plan (DAMP) and the City of Lake Forest WQMP. Therefore, treatment control BMPs are required to remove pollutants typically associated with urban runoff.

2. Primary pollutants of concern:

Primary project pollutants of concern based on Table 7.II-2 (Anticipated and Potential Pollutants Generated by Land Use Type) of the DAMP that also occur on the 303(d) tributary waterbodies are as follows:

- *Bacteria and viruses.* Anticipated sources include animal excrement (found in areas where pets are often walked), sanitary sewer overflow, and trash container handling areas.
- *Sediment.* Driveways and roof-tops are expected to be common sources of sediment due to wear.
- *Pesticides*. Sources of pesticides include household bug-spray, weed killers and other household sources.

3. Secondary pollutants of concern:

Secondary Pollutants of Concern identified Table 7.II-2 (Anticipated and Potential Pollutants Generated by Land Use Type) of the DAMP include Nutrients, Pesticides, Trash & Debris, Oxygen-demanding Substances, and Oil & Grease.

- *Nutrients.* Nutrients, including nitrogen, phosphorous, and other compounds can be anticipated to be generated by or founding organic litter, fertilizers, food waste,

sewage and sediment.

- *Trash and Debris.* These sources include common litter, biodegradable organic matter such as leaves, grass cuttings and food wastes from landscaped areas and homeowners.
- *Oxygen-Demanding Substances.* Potential sources include biodegradable organic materials and various household chemicals, which deplete dissolved oxygen levels in water courses.
- *Oil and Grease.* Potential sources of oil and grease include motor vehicles.

4. Project water quality analyses:

Water quality information is included under part of a larger study that was included under a Final Draft Program Environmental Impact Report, dated May 23, 2008 prepared for the Lake Forest Opportunities Study. Further information regarding water quality can be found at :

http://www.city-lakeforest.com/opportunitiesstudy/pdf/deir/Chapter%203.8%20Hydrology.pdf

5. Project watershed information:

The project is located in the Newport Bay Waterhsed. More specifically the project is in the drainage area of the Serrano Creek Drainage Area of the San Diego Creek Subwatershed. The San Diego Creek Watershed covers 112.2 square miles in central Orange County. In includes portions of the cities of Costa Mesa, Irvine, Laguna Woods, Lake Forest, Newport Beach, Orange, Santa Ana, and Tustin. Its main tributary, San Diego Creek, drains into Upper Newport Bay. Smaller tributaries include Serrano Creek, Borrego Canyon Wash, Agua Chinon Wash, Bee Canyon Wash, Peters Canyon Wash, Sand Canyon Wash, Bonita Canyon Creek, and the Santa Ana Delhi Channel.

The U.S. Army Corps of Engineers completed a Watershed Reconnaissance Study in 1998 and initiated the Feasibility Study phase in 1999. These regulations will limit the "Total Maximum Daily Load" of sediments, nutrients, pathogens and toxics entering waters of the creek and bay.

Further watershed information is included under part of a larger study that was included under a Final Draft Program Environmental Impact Report, dated May 23, 2008 prepared for the Lake Forest Opportunities Study. The project is designated as "Site 6" under this study. Further information regarding this document can be found at :

http://www.city-lakeforest.com/opportunitiesstudy/final_eir.php

TABLE 4.1

DAMP Table 7.II-2 Anticipated and Potential Pollutants Generated by Land Use Type

Priority Project Categories and/or Project Features	General Pollutant Categories								
	Bacteria/Virus	Heavy Metals	Nutrients	Pesticides	Organic Compounds	Sediments	Trash & Debris	Oxygen Demanding Substances	Oil & Grease
Detached Residential Development	X		X	X		X	X	X	X
Attached Residential Development	X		X	X		X	X	P (1)	P (2)
Commercial/ Industrial Development >100,000 ft^2	P (3)	P	P (1)	P (1)	P (2)	P (1)	X	P (1)	X
Automotive Repair Shops		X			X (4) (5)		X		X
Restaurants	X						X	X	X
Hillside Development >5,000 ft^2 In SDRWQCB	X		X	X		X	X	X	X
Hillside Development >10,000 ft^2 In SARWQCB	X		X	X		X	X	X	X
Parking Lots	P (6)	X	P (1)	P (1)	X (4)	P (1)	X	P (1)	X
Streets, Highways & Freeways	P (6)	X	P (1)	P (1)	X (4)	X	X	P (1)	X

X= expected.
P = potential
(1) A potential pollutant if landscaping exists onsite.
(2) A potential pollutant if the project includes uncovered parking areas.
(3) A potential pollutant if land use involves food or animal waste products.
(4) Including petroleum hydrocarbons.
(5) Including solvents.
(6) Bacterial indicators are routinely detected in pavement runoff.

SECTION 5

Section 5 Hydrologic and Geotechnical Conditions of Concern/ Drainage Report

This section of the water quality management plan identifies hydrologic and geotechnical conditions of concern related to the proposed project. Hydrologic or geotechnical conditions of concern are identified through a review of on-site and downstream drainage paths. If the proposed project would cause or contribute flows to problems along on-site or downstream drainage paths, these problems or future problems are considered conditions of concern. Conditions of concern can include problems such as flooding, erosion, scour, and other impacts that can adversely affect channel and habitat integrity.

In order to identify conditions of concern, a comprehensive understanding of flow volume, rate, duration, energy, and peak flow is necessary. Often, a formal drainage study is necessary which considers the project area's location in the larger watershed, topography, soil and vegetation conditions, percent impervious area, natural and infrastructure drainage features, and any other relevant hydrologic and environmental factors. As part of the study, the drainage report includes:

- Field reconnaissance to observe downstream conditions
- Computed rainfall and runoff characteristics including a minimum of peak flow rate, flow velocity, runoff volume, time of concentration and retention volume
- Establishment of site design, source control and treatment control measures to be incorporated and maintained to address downstream conditions of concern

A Hydrology and Hydraulics report was prepared, as required by the City, for the proposed project by Hunsaker and Associates, and is included as Attachment B. A summary of the drainage report is provided below.

A geotechnical report was also prepared, as required by the City for the proposed project ("Limited Preliminary Geotechnical Investigation Serrano Highlands Tentative Tract 15594, City of Lake Forest, California") by GeoSoils, Inc. and is included as Attachment C.

1. **Project location:**
   The project is located in the City of Lake Forest at the northeast corner of Tamarisk and Peachwood Streets; in the San Diego Creek Subwatershed of the Newport Bay Watershed and is approximately 3.5 miles east via storm drains of the San Diego Creek Reach 2 (Cal Watershed 80111000) via Serrano Creek Channel F19.

2. **Topography, soil and vegetation:**
   The southwestern portion of the site contains a residential street (Peachwood Drive) and has been previously graded. The remainder of the site is relatively undisturbed with the exception of some small areas of disturbance from impromptu recreational activities. The site retains much of its rolling foothill topography.

   According to the "Limited Preliminary Geotechnical Investigation, Serrano Highlands, Tentative Tract 15594, city of Lake Forest, California" prepared for Madison investors, LP, dated September 30th 2004, Onsite earth materials are comprised of "colluvial material consisted of silty sand, brown to grayish brown, slightly moist, porous and subject to consolidation. This material was mapped where thicknesses are greater than 4 feet. Alluvial material consisted of silty sand, medium brown to grayish brown, slightly moist to moist and medium dense in consistency. These materials are subject to consolidation and not suitable for structural

support. Sandstone of the Capistrano formation, Oso Member, has been mapped throughout the site. This unit is characteristically light gray to white in color, and structurally massive. The sandstone is generally moderately hard and can be locally friable as well as cemented. The materials vary from silty fine sandstone to coarse grained sandstone."

The Natural Resources Conservation Service Web Soil Survey 2.0 shows the site as being comprised of 65.3% D-group soil, 16.7% C-group soil and 18% B-group soil.

Soils in the Group D category are described as having a high runoff potential. Soils having very slow infiltration rates when thoroughly wetted and consisting chiefly of clay soils with a high swelling potential, soils with a permanent high water table, soils with a claypan or clay layer at or near the surface, and shallow soils over nearly impervious material. These soils have a very slow rate of water transmission.

Group C soils have slow infiltration rates when thoroughly wetted and consisting chiefly of silty-loam soils with a layer that impedes downward movement of water, or soils with moderately fine to fine texture. These soils have slow rate of water transmission.

Group B Soils have moderate infiltration rates when thoroughly wetted and consisting chiefly of moderately deep to deep, moderately well to well drained sandy-loam soils with moderately fine to moderately coarse textures. These soils have a moderate rate of water transmission.

Site vegetation includes Sagebrush, Sage Scrub, Mulefat Scrub, southern Cactus Scrub and non-native grasses.

3. Impervious area:

In the developed condition impervious areas will consist of streets, common access ways, sidewalks and rooftops. Area quantities are listed in the table below:

Project Area	Pre construction			Post construction		
	Acreage	Sq. ft.	%	Acreage	Sq. ft.	%
Total Space	24.6 ac.	1,071,580	100%	24.6 ac.	1,071,580	100%
Pervious	23.6 ac.	1.026,702	96%	11.2 ac	486,655	45%
Impervious	1.0 ac.	44,878	4%	13.4 ac.	584,925	55%

4. Drainage features:

In the existing condition, the site receives run-on from north and adjacent Tract 13344, and the Pacific Commerce Center Site. Run-on also flows from the east and adjacent Irvine Ranch Water District Parcel Map No. 248-17 Site. Drainage sheet flowed in a south to southwesterly direction across the site and is picked up by inlets along existing Peachwood and Oakville Streets connecting to City of Lake Forest storm drain line F19P02.

5. Relevant hydrologic and environmental factors:

The project does not directly discharge to Environmentally Sensitive areas (ESAs) or Areas of Special Biological Significance (ASBSs). The project is approximately 3.5 miles east via storm drains of the San Diego Creek Reach 2 (Cal Watershed 80111000) via Serrano Creek Channel F19. The project drains to Serrano Creek. Topography is rolling and land use is mostly open area with open areas and residential surrounding.

The existing site contains approximately 34.35 acres of offsite and onsite which is undeveloped except a portion of Peachwood Drive. There are two drainage areas in the existing condition, Drainage area "A" and Drainage area "B" discharging at different location across the project site, (Nodes 3, 12, 22 and 32).

In the existing condition area "A" contains an approximately area of 23.6 acres of offsite and onsite and produces a 25 year runoff of about 46.2 cfs at node 32 while area "B" has an area of approximately 10.75 acres of offsite and onsite and produces a 25 year runoff of about 19.8 cfs at nodes 3, 12 and 22. (See existing hydrology map in Appendix B for details)

6. Proposed hydrologic condition summary:

For the proposed condition, there are two drainage areas, Drainage area "A" and Drainage area "B" both discharging to the existing storm drain lines.

Drainage area "A" is approximately 21.5 acres of offsite and onsite, with a 25-year runoff of about 45.2 cfs of offsite and onsite, at node 36. Drainage area "B" is approximately 12.3 acres of offsite and onsite and produces a 25-year runoff of about 29.1 cfs, node 15.

(See proposed hydrology map, Appendix B for other details)

	PROPOSED CONDITION		EXISTING CONDITION	
LOCATION	AREA (AC)	PEAK FLOW (Q25) (CFS)	AREA (AC)	PEAK FLOW (Q25) (CFS)
A	21.5	45.2	23.6	46.2
B	12.3	29.1	10.75	19.8
TOTAL AREA	33.8	74.3	34.35	66.0

The proposed drainage pattern will divert site run-on underneath or around the site and flow in a south to southwesterly direction. Site runoff is discharged through underground storm drain lines to the existing storm drain line at Peachwood Street and to a landscaped buffer strip adjacent to the southerly edge of the Utility Easement. This drainage is picked up at Oakville Street. These lines eventually flow to City of Lake Forest F19P02.

7. Significant impact on downstream channels and habitat integrity:

Hydrologic Conditions of Concern for any development such as the proposed project may include potential water quality degradation; increased runoff volume and velocity; reduced infiltration; increased flow frequency, duration and peaks; and faster time to reach peak flow resulting from development. Per the project's hydrology study, the increased flows will be mitigated with an onsite detention system. The developed condition with detention will be equal to or less than the existing runoff, therefore, there will be no significant impact to downstream channels, i.e., Serrano Creek or habitat integrity.

8. Project hydrology analyses:

The purpose of the hydrology study is to provide flow rates produced from existing and proposed site. It also serves as the basis for analyzing and designing proposed and required storm drain system. The study also demonstrates the mitigation measures to reduce the increased flows below the existing levels due to the project development. Water quality measures will be implemented via Modular Wetland System.

9. Project watershed information:

The project is located in the Newport Bay Watershed. More specifically the project is located in the Serrano Creek drainage area of the San Diego Creek Subatershed. The San Diego Creek Subwatershed covers 112.2 square miles in central Orange County. In includes portions of the cities of Costa Mesa, Irvine, Laguna Woods, Lake Forest, Newport Beach, Orange, Santa Ana, and Tustin. Its main tributary, San Diego Creek, drains into Upper Newport Bay. Smaller tributaries include Serrano Creek, Borrego Canyon Wash, Agua Chinon Wash, Bee Canyon Wash, Peters Canyon Wash, Sand Canyon Wash, Bonita Canyon Creek, and the Santa Ana Delhi Channel.

The U.S. Army Corps of Engineers completed a Watershed Reconnaissance Study in 1998 and initiated the Feasibility Study phase in 1999. These regulations will limit the "Total Maximum Daily Load" of sediments, nutrients, pathogens and toxics entering waters of the creek and bay.

Watershed information is included under part of a larger study that was included under a Final Draft Program Environmental Impact Report, dated May 23, 2008 prepared for the Lake Forest Opportunities Study. The project is designated as a portion of "Site 6" under this study. Further information regarding this document can be found at :

http://www.city-lakeforest.com/opportunitiesstudy/final_eir.php

There are two drainage systems within the studied area. Drainage Area "A" drains to the existing 30" RCP per improvement plans for Tract 12603. Drainage Area "B" drains to the existing 18" RCP per improvement plans for Tract 10931 and streets. The as-built storm drain plans can be found in Reference Section 5 of the hydrology study.

Existing Condition

In the existing condition Drainage Area "A" contains an approximate area of 23.6 acres of offsite and onsite and Drainage Area"B" contains 3 subareas with a combination area of 10.8 acres. The existing condition hydrology analysis can be found in Section 2 and the summary of the hydrology results can be found in Table 1 of the hydrology study.

Proposed Condition

In the proposed condition Drainage Area "A" contains an approximate area of 21.5 acres of offsite and onsite and Drainage Area "B" contains an approximate area of 12.3 acres.

Please see the following table regarding the Existing and Proposed Conditions.

Hydrology Summary Table (TC, Runoff Volume) for TTM 15594 in City of Lake Forest

Drainage Area	Proposed Condition							Existing Condition						
	Area	100-year flow		25-year flow		10-year flow		Area	100-year flow		25-year flow		10-year flow	
	(acre)	Time of Concentration (min)	Runoff Volume (ac-ft)	Time of Concentration (min)	Runoff Volume (ac-ft)	Time of Concentration (min)	Runoff Volume (ac-ft)	(acre)	Time of Concentration (min)	Runoff Volume (ac-ft)	Time of Concentration (min)	Runoff Volume (ac-ft)	Time of Concentration (min)	Runoff Volume (ac-ft)
A	21.5	12.97	6.91	13.06	3.95	13.11	2.93	23.6	16.76	8.07	16.99	4.23	17.17	3.07
B	12.3	13.15	4.59	13.26	3.06	13.33	2.38	10.8	14.07	4.07	14.12	2.27	14.12	1.69
Total	33.8	-	11.5	-	7.0	-	5.3	34.4	-	12.1	-	6.5	-	4.8

Table 1 Hydrology Summary for TTM 15594 in Lake Forest

Drainage Area	Proposed Condition							Existing Condition				Difference (proposed-existing)						
	Area	100-year flow		25-year flow		10-year flow		Area	100-yr flow	25-yr flow	10-yr flow	Area	100-year flow		25-year flow		10-year flow	
	(acre)	Without Mitigation (cfs)	*** With Mitigation (cfs)**	Without Mitigation (cfs)	*** With Mitigation (cfs)**	Without Mitigation (cfs)	*** With Mitigation (cfs)**	(acre)	(cfs)	(cfs)	(cfs)	(acre)	Without Mitigation (cfs)	*** With Mitigation (cfs)**	Without Mitigation (cfs)	*** With Mitigation (cfs)**	Without Mitigation (cfs)	*** With Mitigation (cfs)**
A	21.5	59.0	**59.0**	45.2	**45.2**	37.0	**37.0**	23.6	60.6	46.2	37.4	-2.1	-1.6	**-1.6**	-1.0	**-1.0**	-0.4	**-0.4**
B	12.3	37.6	**30.1**	29.1	**20.9**	24.1	**17.1**	10.8	30.3	23.4	19.2	1.6	7.3	**-0.2**	5.7	**-2.5**	4.9	**-2.1**
Total	33.8	96.6	**89.1**	74.3	**66.1**	61.1	**54.1**	34.35	90.9	69.6	56.6	-0.6	5.7	**-1.8**	4.7	**-3.5**	4.5	**-2.5**

Note: No mitigation is provided for Drainage Area "A"

*Mitigation provided by detention facility, see Table 3

NOTE: Velocities have been calculated for these preliminary documents, velocities will be calculated and provided with final engineering if appropriate.

SECTION 6

Section 6 Best Management Practices (BMPs)

Minimizing a development's effects on water quality and the environment can be most effectively achieved by using a combination of BMPs which include Site Design, Source Control and Treatment Control measures. These design and control measures employ a multi-level strategy. The strategy consists of: 1) reducing or eliminating post-project runoff; 2) controlling sources of pollutants; and 3) treating storm water runoff before discharging it to the storm drain system or to receiving waters.

This WQMP and the proposed BMPs for the proposed project have been developed to minimize drainage impacts identified in Section 5 and the introduction of pollutants identified in Section 4 into the municipal storm drain system and/or ultimate drainage receiving water body.

For more detailed information on the use and design of BMPs please see the California Stormwater Quality Association New development and Redevelopment handbook. The handbook is available at **www.cabmphandbooks.com**. Additional information is also available in the City's WQMP.

6.1 Site Design BMPs

The most effective means of avoiding or reducing water quality and hydrologic impacts is through incorporation of measures into the project design. These measures should be taken into consideration early in the planning of a project as they can affect the overall design of a project.

The design of the proposed project has considered and incorporated site design concepts as described below.

SITE DESIGN CONCEPT 1: MINIMIZE STORMWATER RUNOFF, MINIMIZE PROJECT'S IMPERVIOUS FOOTPRINT AND CONSERVE NATURAL AREAS

1.	**Minimizing impervious footprint:** Site design is comprised of 2-story structures rather than the typical single story "California ranch-style" architecture. This design style results in a smaller building footprint and thus, less impervious space. By changing the building type and spreading the homes out there is an increased opportunity to incorporate landscaped buffer strips. Narrower common access ways are incorporated along several of the lots, reducing the width of what otherwise be full-width streets.
2.	**Conservation of natural areas:** Per the table in Section 1, the project proposes approximately 15.5 acres of Open Space, by Zoning and Landuse designation. This will be located primarily along the northern edge of the site. The project will incorporate CASQA BMP EC-2 "Preservation of Existing Vegetation"
3.	**Use of permeable paving or other surfaces:** Project is at the Tentative Tract Map stage and as such, use of permeable paving is unknown. Use of permeable paving materials will be considered by the project architect or landscape architect. This information will either be amended to this WQMP or included in a Final WQMP.

4.	**Designing to minimum widths necessary:** Streets, sidewalks and parking lot aisles will be designed to the minimum widths necessary specified in the City of Lake Forest Municipal Code § 7.08.055 (Street Widths), while complying with ADA regulations and other life safety requirements. Generally, project streets have been designed to the minimum width specified for private streets serving four (4) or less parcels with a minimum pavement width of twenty-eight (28) feet.
5.	**Incorporation of landscaped buffers:** Landscaped buffers are incorporated throughout the project and as part of the Utility Easement. Additionally, landscape slopes are proposed between residential lots at various locations throughout the site; between residential lots and natural open spaces areas and between residential lots and the project's site boundary.
6.	**Reduced street widths:** The project has incorporated reduced street widths through the inclusion of common access ways between lots 21-23, 26 and 27 in compliance with City of Lake Forest Municipal Code § 7.08.055 (Street Widths).
7.	**Maximize canopy interception:** Existing native landscape will be conserved in open space region. The project is at the Tentative Tract Map stage and as such, the type of neighborhood canopy tree plantings is unknown. Use of canopy trees shall be considered by the landscape architect. This information will either be amended to this WQMP or included in a Final WQMP.
8.	**Use of native or drought tolerant trees/shrubs:** Existing native landscape will be conserved in open space region. Project is at the Tentative Tract Map stage and as such, the type of planting materials is unknown. Use of native/drought tolerant plants will be considered by the project architect or landscape architect. This information will either be amended to this WQMP or included in a Final WQMP.
9.	**Minimizing impervious surfaces in landscaping:** Use of impervious surfaces and decorative concrete in landscaped areas will be avoided wherever appropriate.
10.	**Use of natural drainage systems:** Natural drainages will be incorporated throughout the open space and along the utility easement. Other onsite drainage will be allowed to flow over landscaped areas prior to entering area drains and the project storm drain system.
11.	**Low flow infiltration:** There are no low-flow infiltration systems proposed for the project. Per Geosoils, Inc. letter dated July 19, 2011, their report provides recommendations against installing infiltration devices on the subject site. A copy of this letter is provided as reference in Appendix C. Infiltration is also being avoided to reduce the risk of contaminating ground water due to common pollutants from urban runoff including nitrates, detergents and common chemicals for yard maintenance. Due to the geometry of this hillside subdivision; considering the front property lines, driveway pattern, sidewalks and narrow parkways, there is no room for a "bio-swale" type facility, or large landscape areas for infiltration. Any infiltration facility would be placed in the natural areas adjacent to structures. As stated in the 2003 DAMP the structural properties of the soil may be reduced and compromise the stability of slopes and subsurface soils. This is a condition that needs to be avoided and another reason there are no infiltration facilities being proposed.

12.	**Onsite ponding areas or retention facilities:** Onsite project detention (ponding) will be implemented on oversized underground storm drain pipes.
13.	**Other site design features:** Project proposes the use of Katchall Inserts in Catch Basins to treat for Project Pollutants of Concern.

SITE DESIGN CONCEPT 2: MINIMIZE DIRECTLY CONNECTED IMPERVIOUS AREAS (DCIAs)

1.	**Draining rooftops into adjacent landscaping:** The project soils report recommends that downspouts should outlet a minimum of 5 feet from structures or to a subsurface drainage system. Roof drains will be attached to an area drain system prior to flowing to the project's treatment BMP.
2.	**Draining to adjacent landscaping:** Impervious sidewalks, walkways, trails, and patios will drain into adjacent landscaping prior to entering area drains and the project storm drain system where feasible.
3.	**Vegetated drainage swales:** Although landscaped areas are incorporated into the site plan to direct drainage over landscape and away from structural foundations, these landscaped areas do not have the length or slope necessary to meet the minimum hydraulic residence time of 5-9 minutes indicated in CASQA TC-30.
4.	**Site drainage system:** Rural swale systems and urban curb/swale systems have not been incorporated as a part of this project because it is not consistent with High Density Residential (HIDR) Serrano Highland Planned Community (PC4) community standards. This project is not in a rural area and will not incorporate rural swale systems. The High Density Residential Serrano Highland Planned Community (PC4) community standards are typically associated with urban area projects.
5.	**Residential driveways:** Driveways incorporating shared access include those residences off of "E" Street between lots 21-23, 26 and 27 as common access ways. Other driveways will drain flows to the street's catch basins that will include Katchall filtration units.
6.	**Residential parking areas:** Residential parking will be in closed private garages and will not come in contact with stormwater. Permeable pavement will not be used in these areas. Total project parking spaces shall be consistent with City of Lake Forest's parking regulations, standards and requirements. All onsite streets are private and will be maintained by the HOA.
7.	**Non-residential parking areas:** Non-residential parking will be provided throughout the site along "A", "B", "D", "E", "F", "G", "H", "I", and "J" streets.

6.2 Source Control BMPs

Source Control BMPs are measures focusing on reducing or eliminating post-project runoff and controlling sources of pollutants. Source Control BMPs must be included in all projects and can be represented in structural measures such as landscape, irrigation, signage considerations, materials, and design of areas; and non-structure measures such as requirements, cleaning, education, and maintenance.

Table 6.1 Source Control Structural and Non-Structural BMPs

Number	BMP and Objective	Included
	Routine Non-Structural BMPs (numbers correspond to those in City's WQMP)	
N1	**Education for Property Owners, Tenants and Occupants:** Practical informational materials are provided to residents, occupants, or tenants to increase the public's understanding of stormwater quality, sources of pollutants, and what they can do to reduce pollutants in stormwater. The HOA will insure that all maintenance staff and contractors be given information outlining the environmental awareness education materials and establish requirements for the implementation of an awareness program that informs the staff of the impacts of dumping oil, paints, solvents or other potentially harmful chemicals into the storm drain; the proper use and management of fertilizers, pesticides and herbicides in home landscaping and gardening practices; the impacts of littering and improper. Environmental awareness education materials, including, but not limited to those included in Appendix A of this WQMP, shall be provided to all members of the maintenance staff and annually thereafter by the HOA. Water quality information will also be provided periodically in HOA newsletters.	Y
N2	**Activity Restrictions:** Rules or guidelines for developments are established within appropriate documents (i.e. CC&Rs, lease terms, etc.) which prohibit activities that can result in discharges of pollutants. The HOA shall be required to limit the activities within the limits of the proposed project to those applicable to its intended use. Therefore, activities that have the potential to impact water quality, such as outdoor vehicle maintenance, will not be allowed on the premises. Within the CC&Rs prepared by the project developer, language shall be included to identify surface water quality protection required by the HOA. Surface water quality activities shall also be conducted in conformance with the Water Quality Management Plan as it relates to the handling and disposal of contaminants. The following example from a similar project's Master Declaration of CC&Rs provides additional direction for controlling activities that may affect the environment of the project and/or surrounding areas (it should be noted that the HOA as cited in the CC&Rs refers to a typical Homeowners Maintenance Corporation, as a California Nonprofit Corporation formed for maintenance obligations of a community similar to this project) EXCERPT FROM MASTER DECLARATION OF CONDITIONS COVENANTS AND RESTRICTIONS, SECTION 2.13 2.13 POLLUTANT RUNOFF (a) The Neighborhood Corporation shall periodically provide to their members environmental awareness education materials made available by the local municipalities. These materials will describe	Y

Number	BMP and Objective	Included
	the use of chemicals (including household types) that should be limited to the Covered Property with no discharge of specified wastes via hosing or other direct discharge to gutter, catch basins, settling basins and storm drains. The materials shall also provide a description of fertilizer and pesticide usage guidelines consistent with County Management Guidelines for Use of Fertilizers and Pesticides. (b) The Neighborhood Corporation shall establish trash management and litter control procedures aimed at reducing pollution of drainage water. (c) The Neighborhood Corporation shall have any drainage systems, streets and catch basins on property they maintain inspected and cleaned, and any streets and parking areas they maintain swept on a weekly basis. (d) The Neighborhood Corporation shall implement irrigation and landscaping practices which will include provision of water sensors, programmable irrigation times, grouping of plants with similar water requirements in order to reduce excess irrigation runoff and to promote surface filtration. The Neighborhood Corporations shall maintain erosion control devices on the property they maintain until adequate vegetation coverage has been achieved following establishment.	
N3	**Common Area Landscape Management:** Specific practices are followed and ongoing maintenance is conducted to minimize erosion and over-irrigation, conserve water, and reduce pesticide and fertilizer applications. Landscape management programs will be designed and established by the project developer. The HOA will own and maintain all project common landscaped areas. These programs will include how to mitigate the potential dangers of fertilizer and pesticide usage through the incorporation of an Integrated Pest Management Program (IPM).Ongoing maintenance will be consistent with the City of Lake Forest Municipal Code (Landscaping), Chapter 15.14 (Stormwater Quality Management Ordinance) § 9.146.110.	Y
N4	**BMP Maintenance:** In order to ensure adequate and comprehensive BMP implementation, all responsible parties are identified for implementing all non-structural BMPs and for structural BMPs, cleaning, inspection, and other maintenance activities are specified including responsible parties for conducting such activities. As indicated in (N2) above, the CC&R's shall identify the HOA as being responsible for implementation of each applicable non-structural BMP as well as scheduling inspection and maintenance cleaning of all applicable structural BMP facilities. The HOA, through its landscape maintenance contractor, will be responsible for inspection and maintenance activities in landscape areas. Debris and other water pollutants will be controlled, contained and disposed of in a proper manner by the maintenance contractor.	Y

Number	BMP and Objective	Included
N5	**Title 22 CCR Compliance:** Hazardous waste is managed properly through compliance with applicable Title 22 regulations. Not applicable. Generally applies to those facilities that generate, store or dispose of hazardous materials.	N
N6	**Local Water Quality Permit Compliance:** The project complies with water quality permits issued by the City to ensure clean stormwater discharges. Project incorporates County of Orange DAMP and City requirements, requiring the preparation of a WQMP and treatment of project pollutants of concern.	Y
N7	**Spill Contingency Plan:** A Spill Contingency Plan is implemented to ensure that spills are managed properly by requiring stockpiling of cleanup materials, notification of responsible agencies, disposal of cleanup materials, documentation, etc. Not applicable. This requirement generally apples to commercial or industrial developments that generate, store or dispose of hazardous materials. However, in the event that oil, hydrocarbon and other materials that may impact storm water is leaked or spilled within the project area, the material(s) shall be cleaned up immediately and disposed of properly.	N
N8	**Underground Storage Tank Compliance:** Because of the known or potential presence of underground storage tanks (USTs) on the project site, applicable UST regulations apply and are adhered to in order to avoid harm to humans or the environment. Not applicable. No underground storage tanks are proposed.	N
N9	**Hazardous Materials Disclosure Compliance:** Because hazardous materials or wastes will be generated, handled, transported, or disposed of in association with the project, measures are taken to comply with applicable local, state, and federal regulation to avoid harm to humans and the environment. Not applicable. This requirement generally apples to commercial or industrial developments that generate, store or dispose of hazardous materials.	N
N10	**Uniform Fire Code Implementation:** The project includes a hazardous material storage facility or other area regulated by Article 80 and therefore implements measures to comply with this section of the Uniform Fire Code. Not applicable. This requirement generally apples to commercial or industrial developments that generate, store or dispose of hazardous materials.	N
N11	**Common Area Litter Control:** Trash management and litter control procedures are specified, including responsible parties, and implemented to reduce pollution of drainage water. The HOA shall be responsible for common area litter control, emptying of trash receptacles, noting of disposal violations, and investigating violations as necessary.	Y