Screencheck No. __

Project Name _____

Project No. _____

Planning Area __

Surface Water Quality Screencheck Comments by:
Amanda Carr
Water Quality Administrator

(date)

Important Note:

On May 22, 2009, the Santa Ana Regional Water Quality Control Board adopted fourth term MS4 permit (Order R8-2009-0030) for the County and cities in Orange County under their jurisdiction. The County of Orange, as principal permittee, has developed a Model Water Quality Management Plan (Model WQMP) and accompanying Technical Guidance Document which together outline the requirements for new development and significant redevelopment projects. The Model WQMP has been adopted by the Santa Ana Regional Water Quality Control Board and was implemented as of August 17, 2011. The City of Irvine is now required to aggressively pursue implementation of Low Impact Development (LID) techniques for all new development and significant redevelopment. The Model WQMP contains significantly changed requirements for "priority" projects. Project WQMPs are required to include a discussion on how LID principles are incorporated into the project. The City will also require that individual project WQMPs identify hydrologic conditions of concern (HCOC). An HCOC exists when a site's hydrologic regime is altered and there are significant impacts on downstream channels and aquatic habitats, alone or in conjunction with impacts of other projects (a PDF of the Model WQMP and accompanying Technical Guidance Document are attached for your information and use in the development of a project WQMP).

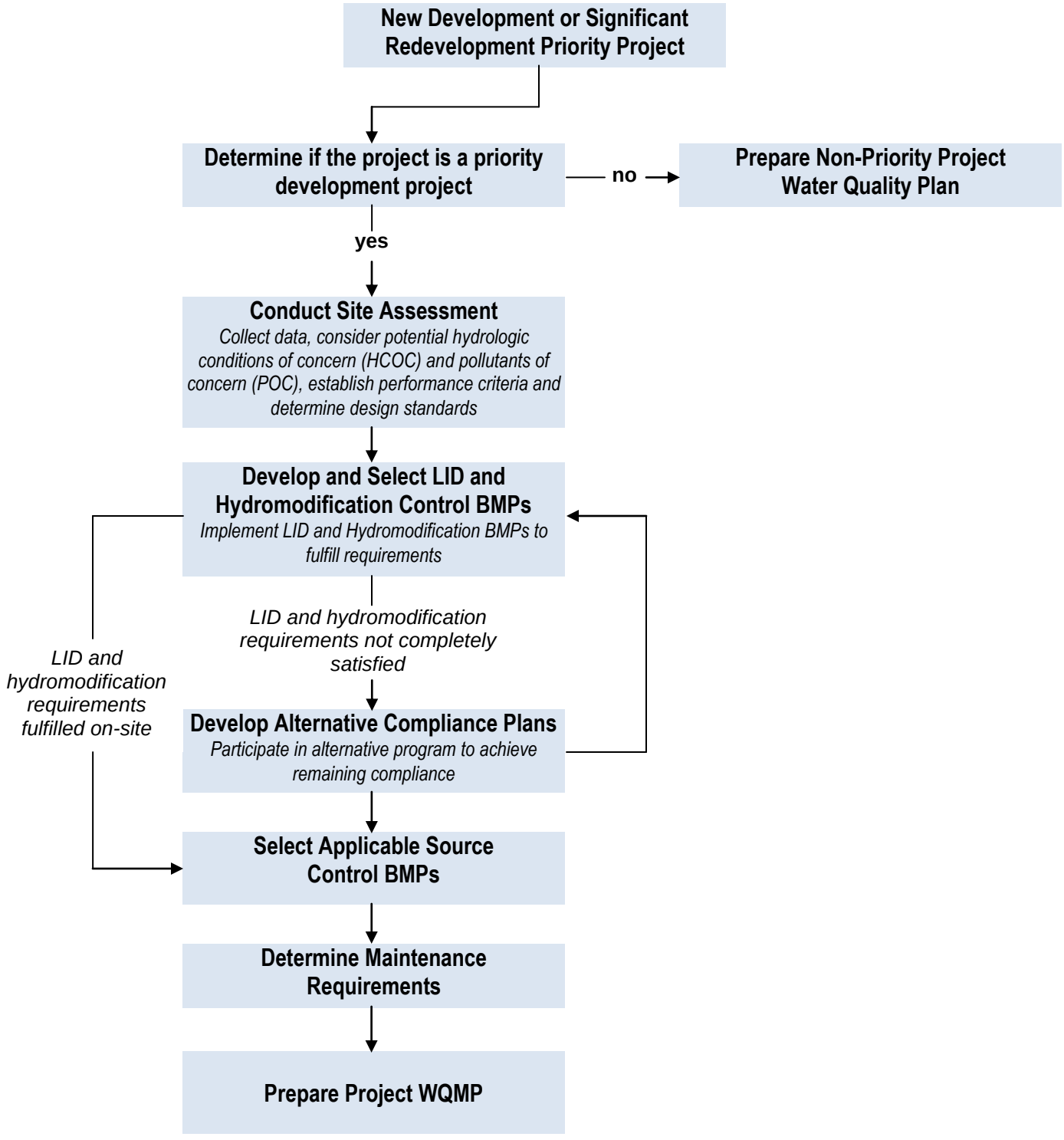
1) Any "yes" answers in the table below indicates a "priority project." Priority projects require the submittal of an appropriate Water Quality Management Plan (WQMP) to the Building and Safety Division for review and approval prior to issuance of grading or building permits.

Proposed Project Includes:	Yes	No
1. All significant redevelopment projects, where significant redevelopment is defined as projects that include the addition or replacement of 5,000 square feet or more of impervious surface on a developed site. Redevelopment does not include routine maintenance activities that are conducted to maintain original line and grade, hydraulic capacity, original purpose of the facility, or emergency redevelopment activity required to protect public health and safety. Where redevelopment results in the addition or replacement of less than fifty percent of the impervious surfaces of a previously existing developed site, and the existing development was not subject to WQMP requirements, the numeric sizing criteria discussed below applies only to the addition or replacement, and not to the entire developed site. Where redevelopment results in the addition or replacement of more than fifty percent of the impervious surfaces of a previously existing developed site, the numeric sizing criteria applies to the entire development.		
2. New development projects that create 10,000 square feet or more of impervious surface (collectively over the entire project site) including commercial, industrial, residential housing subdivisions (i.e., detached single family home subdivisions, multi-family attached subdivisions (town homes), condominiums, apartments, etc.), mixed-use, and public projects. This category includes development projects on public or private land, which fall under the planning and building authority of the permittees.		
3. Automotive repair shops (with SIC codes 5013, 5014, 5541, 7532-7534, 7536-7539).		
4. Restaurants where the land area of development is 5,000 square feet or more.		
5. All hillside developments on 5,000 square feet or more, which are located on areas with known erosive soil conditions or where the natural slope is twenty-five percent or more.		
6. Parking lots of 5,000 square feet or more of impervious surface exposed to storm water. Parking lot is defined as a land area or facility for the temporary storage of motor vehicles.		
7. Streets, roads, highways and freeways of 5,000 square feet or more of paved surface shall incorporate USEPA guidance, "Managing Wet Weather with Green Infrastructure: Green Streets" in a manner consistent with the maximum extent practicable standard. This category includes any paved surface used for the transportation of automobiles, trucks, motorcycles and other vehicles and excludes any routine road maintenance activities where the footprint is not changed.		
8. Retail gasoline outlets of 5,000 or more square feet with a projected average daily traffic of 100 or more vehicles per day.		
9. Emergency and public safety projects in any of the above-listed categories may be excluded if the delay caused due the requirement for a WQMP compromises public safety, public health and/or environmental protection.		

2) The project WQMP must emphasize the implementation of Low Impact Development (LID) principles and address hydrologic conditions of concern. The WQMP must also include routine

structural and non-structural source control BMPs. Treatment control BMPs must be implemented on-site if the project does not retain all design storm runoff or drain to an operational regional treatment control facility. The elements of a project WQMP development are shown in the diagram on the following page:

Project WQMP Development Process Flow Chart



3) The project must incorporate Site Design BMPs/Low Impact Development (LID) features

Site Design BMPs are design concepts intended to minimize changes to the natural hydrologic regime, by:

- Controlling peak storm water runoff rates
- Minimizing the project's impervious footprint
- Conserving natural areas, if applicable
- Minimizing directly connected impervious areas
- Protecting slopes and channels

Low Impact Development (LID) features are designed to:

- Infiltrate storm water
- Evapotranspirate storm water
- Capture and reuse storm water
- Biotreat storm water

If LID features are incorporated, the project WQMP must include:

- A detailed site plan identifying all LID features. The site plan must show the areas controlled by each LID feature and the boundaries of each area should be shown using heavy black lines similar to the way drainage areas are shown on a hydrology map.
- A table showing area in square feet that is controlled by each of the LID features. Any area not covered by LID features must be treated by conventional treatment control BMPs. 100% of the project area must be treated or addressed by LID and included in the table.

The project WQMP must include Routine Non-Structural Source Control BMPs

Typical Routine Non-Structural Source Control BMPs include:

- Occupant/employee education and training
- Proper landscape management
- Facility maintenance (good housekeeping)
- Parking lot and street sweeping

The project WQMP must include Routine Structural Source Control BMPs

Typical Routine Structural Source Control BMPs include:

- Covered and/or bermed outdoor materials storage areas
- Trench drains at entrances to maintenance bays
- Roof or awnings over loading dock areas
- Signage for storm drain inlets

If the project is a "priority project" as defined in the Table on Page 2, the project WQMP must include on-site Treatment Control BMPs if capturing the design storm on-site is not feasible; <u>or</u> drain to a regional or watershed treatment facility, such as IRWD's Natural Treatment System (NTS).

Treatment Control BMPs are engineered technologies designed to remove pollutants from storm water and urban runoff, such as:

- Biofilters (vegetated strips or swales)
- Detention basins (dry)
- Infiltration basins
- Wet Ponds or wetlands
- Filtration systems
- Proprietary devices

If a treatment control BMP is required, the project WQMP must include:

- A site plan showing the areas that are treated by each treatment control BMP. The site plan must show the areas treated and the boundaries of each treated area should be shown using heavy black lines similar to the way drainage areas are shown on a hydrology map.
- A table showing each treatment control BMP and the area in square feet that it is designed to treat. 100% of the project area must be treated or controlled by LID and included in the table.

Project requirements for Treatment Control BMPs may be met by a regional or watershed approach such as IRWD's Natural Treatment System (NTS), if:

- The project incorporates all applicable Routine Source Control BMPs
- The regional program incorporates BMPs sized to treat appropriate volume or flow for all new development within the watershed
- The implementation mechanism for the regional program is identified, including funding, timing, and ability to execute
- A "Consistency Determination" is made by the Executive Officer of the Santa Ana Regional Water Quality Control Board that confirms that the regional treatment BMP is consistent with:
  1. The Clean Water Act
  2. The City's current Municipal Separate Storm Sewer (MS4) permit, and
  3. The Countywide Drainage Area Management Plan (DAMP)

TREATMENT CONTROL SELECTION CRITERIA
FOR "PRIORITY PROJECTS"

1. Treatment control BMPs must be selected to address the pollutants of concern in downstream receiving waters and the pollutants expected to be generated from the type of new development or significant redevelopment being proposed.

Pollutants of Concern for Development Types

Constituent	Project-Based Anticipated or Potential Pollutant of Concern
TSS	Res, C, Hill, P, T
Nutrients	Res, C, Hill, P, T
Heavy Metals	C, P, T, A
Bacteria/Virus	Res, C, Hill, P, T, R
Pesticides	Res, C, Hill, P, T
Organic Compounds	C, P, T, A
Trash and Debris	Res, C, Hill, P, T, A, R
Oxygen Demanding Substances	Res, C, Hill, P, T, R
Oil and Grease	Res, C, Hill, P, T, A, R

Development Types: Res = detached or attached residential development
C = commercial/industrial (including automotive and restaurants)
Hill = hillside development
P = parking lots
T = transportation
A = automotive repair shops
R = restaurants

2. Any pollutant of concern that is expected to be generated by the project which are causing a Clean Water Act Section 303(d) impairment of receiving waters shall be considered primary pollutants of concern. Priority projects shall select a single or combination of stormwater Treatment Control BMPs, which address the particular pollutants of concern.

303(d) & TMDL Listed Receiving Waters

Name	303(d)/TMDL Listing
Upper Newport Bay Ecological Reserve	Chlordane, Copper, DDT, Metals, PCBs, Sediment Toxicity, Chlorpyrifos, Nitrogen, Phosphorus, Zinc, Selenium, Diazinon, Dieldrin & Lead and Sediment
San Diego Creek, Reach 1 (Upper Newport Bay to Jeffrey Road)	Chlordane, DDT, PCBs, Chlorpyrifos, Nitrogen, Phosphorus, Zinc, Selenium, Diazinon, Dieldrin, Lead, Toxaphene, Cadmium, Sediment and Fecal Coliform
San Diego Creek, Reach 2 (Upstream of Jeffrey Road)	Chlordane, DDT, PCBs, Chlorpyrifos, Nitrogen, Phosphorus, Zinc, Selenium, Diazinon, Dieldrin, Lead, Toxaphene, Cadmium, Copper, Sediment, Fecal Coliform and Metals
Peters Canyon Channel	DDT and Toxaphene

3. **Treatment** control BMPs must be sized to comply with one of the following numeric sizing criteria:

Volume

Volume-based treatment control BMPs shall be designed to infiltrate, filter, or treat either:

- The volume of runoff produced from a 24 hour, 85th percentile storm event, as determined from the local historic rainfall record; or,
- The volume of annual runoff produced by the 85th percentile, 24-hour rainfall event, determined as the maximized capture storm water volume for the area, from the formula recommended in *Urban Runoff Quality Management, WEF Manuel of Practice No. 23/ASCE Manual of Practice No. 87)1998*); or,
- The volume of annual runoff based on unit basin storage volume, to achieve 80% or more volume treatment by the method recommended in *California Stormwater Best Management Practices Handbook – Industrial/Commercial (1993)*; or,
- The volume of runoff, as determined from the local historical rainfall record, that achieves approximately the same reduction in pollutant loads and flows as achieved by mitigation of the 85th percentile, 24-hour runoff event;

OR

Flow

Flow-based treatment control BMPs shall be designed to infiltrate, filter, or treat either:

- The maximum flow rate of runoff produced from a rainfall intensity of 0.2 inches of rainfall per hour; or,
- The maximum flow rate of runoff produced by the 85th percentile hourly rainfall intensity, as determined from the local historical rainfall record, multiplied by a factor of two; or,
- The maximum flow rate of runoff, as determined by the local historical rainfall record, that achieves approximately the same reduction in pollutant loads and flows as achieved by mitigation of the 85th percentile hourly rainfall intensity multiplied by a factor of two.

4. Before a proposed treatment control BMP may be used in an approved project WQMP, it shall first be evaluated and approved by the City for:

   a. Effectiveness in removing pollutants of concern based on available test results for similar installations
   b. Ease and frequency of maintenance
   c. Durability
   d. Cost effectiveness
   e. Vector minimization and control

IMPORTANT NOTE: The City requires that Site Design BMPs/Low Impact Development (LID) features be used to capture runoff to the maximum extent practicable. The City's second preference would be that extended detention basins, bio-filters, and constructed wetlands be used as treatment control BMPs for priority projects. For priority projects that cannot utilize Site Design BMPs/Low

Impact Development (LID) features or extended detention basins, bio-filters, and constructed wetlands, the City has also approved the use of Americast's *Filterra*® system, Contech's *UrbanGreen BioFilter*, BioClean *Modular Wetland* system, Contech's *Stormfilter*® system[1], KriStar's concrete vault configuration *FloGard*® *Perk Filter*[1] and, or a combination of these systems and natural systems as primary treatment control BMPs as acceptable treatment control BMPs. These systems, **or an equivalent system**, that meets the City's evaluation criteria (listed above), may be used as the primary treatment control for this project provided they are sized to treat all the runoff from this site in accordance with the sizing criteria included in the City's NPDES permit[2]. Please be advised that not all products evaluated are approved and that such evaluation may take considerable time and thus should be considered in overall project scheduling.

5. The applicant must demonstrate that appropriate vector minimization considerations and mitigation measures have been incorporated into the design, implementation, and maintenance schedule for each treatment control BMP. This would include but is not limited to:

    a. Rapid discharge of all captured standing water (within 72 hours) in dry systems
    b. Mosquito exclusion from devices (when applicable)
    c. Sediment/debris removal and vegetation management from treatment wetlands "as needed"
    d. Access for inspection and treatment control of mosquitoes and other vectors

For complete guidelines and information on vector minimization standards for treatment control BMPs, contact the Orange County Vector Control District at (714) 971-2421 or www.ocvcd.org.

Groundwater Protection

Any structural infiltration treatment control BMPs shall meet the following minimum requirements:

- Use of structural infiltration treatment control BMPs shall not cause or contribute to an exceedance of groundwater water quality objectives.
- Source control and pollution prevention treatment control BMPs shall be implemented to protect groundwater quality.
- Structural infiltration treatment control BMPs shall not cause a nuisance or pollution, as defined in Water Code Section 13050.

Permits for Dewatering Operations

Applicants should be aware that short term and long term dewatering activities in the City of Irvine require a permit issued by the Santa Ana Regional Water Quality Control Board (Regional Board). This is primarily due to the presence of nitrates and selenium in the Newport Bay Watershed.

The short-term permit prescribes discharge requirements for:

1. Short term (one year or less duration) discharges from activities involving groundwater extraction and discharge:

    a. Wastes associated well installation, development, test pumping and purging;

    b. Aquifer testing wastes;

[1] Conventional treatment control BMPs including Contech's Stormfilter system and Kristar's Flogard Perk Filter will be only allowed when LID BMPs and bio-treatment options are not feasible .

[2] See page 7 for sizing criteria

c. Dewatering wastes from subterranean seepage; and

d. Groundwater dewatering wastes at construction sites.

2. Discharges that pose an insignificant threat to water quality:

a) Discharges composed entirely of storm water;

b) Air conditioning condensate;

c) Irrigation water;

d) Passive foundation drains;

e) Passive footing drains;

f) Water from crawl space pumps;

g) Non-commercial vehicle washing;

h) Dechlorinated swimming pool discharges (Cleaning wastewater and filter backwash shall not be discharged to the MS4).

i) Diverted stream flows;

j) Rising ground waters and natural springs;

k) Ground water infiltration as defined in 40 CFR 35.2005 (20) and uncontaminated pumped groundwater;

l) Flows from riparian habitats and wetlands;

m) Emergency fire fighting flows (i.e., flows necessary for the protection of life and property) do not require BMPs and need not be prohibited. However, where possible, when not interfering with health and safety issues, BMPs should be implemented (also see Section XXI, Provision 5);

n) Waters not otherwise containing wastes as defined in California Water Code Section 13050 (d); and

o) Other types of discharges identified and recommended by the permittees and approved by the Regional Board.

For longer term ground water discharges not covered under the aforementioned permit, individual permits are required by the Regional Board.

Note: Please consult with the Regional Board to discuss specific permit requirements if there is a possibility that dewatering activities may be required for your project since the aforementioned permits may be subject to change in the future.

Irrigation

The City of Irvine encourages the use of weather-based evapotranspiration (ET) irrigation controllers for all new development and significant redevelopment projects.