



WATER QUALITY TREATMENT ZONES

COLLEGETOWN ENVIRONMENTAL IMPACT REPORT - FIGURE 20

Treatment Control BMPs & Alternative Compliance Approaches

The Fourth-Term MS4 Permit and the Model WQMP include alternative approaches for water quality treatment for projects where, based on the feasibility analyses, implementation of LID on-site is determined infeasible. For alternative approaches to be used in lieu of LID, a waiver request must be submitted to the City of Fullerton and the Santa Ana RWQCB for approval. Alternative compliance programs include use of treatment control BMPs, off-site mitigation projects, regional BMPs, and payment into an in-lieu funding program. Since at the time of preparation of this study, urban mitigation funds or other “in-lieu” programs have not yet been developed, and use of these programs is not proposed as part of the CollegeTown Specific Plan Project.

If, based on the screening and feasibility studies conducted, LID BMPs were found to be infeasible for implementation on a project site and a waiver request has been approved, treatment control BMPs may be utilized to treat runoff from the project site. Treatment BMPs may be utilized to treat either partial treatment of runoff that is not treated by LID BMPs, or the entire design capture volume for the site, and may be utilized as stand-alone BMPs or in combination with other BMPs to ensure adequate treatment is provided for the project’s pollutants of concern. Examples of treatment control BMPs include sand/media filters (includes proprietary), baffle-box systems, and hydrodynamic separators.

Based on the proposed land use changes under the CollegeTown Specific Plan, it is anticipated that through the use of water quality credits (see below) and a combination of infiltration and biotreatment BMPs, it will be sufficient to capture and treat the required first flush/design capture volume for the project sites in accordance with the Model WQMP. Therefore, additional treatment control BMPs are not anticipated at this time. Should additional treatment controls be necessary based on the results of the site-specific BMP feasibility studies conducted during the design phase of the project, waiver request(s) will be submitted and the results of the studies with proposed treatment control BMPs will be documented in the project-specific WQMPs.

Water Quality Credits

The Model WQMP allows local jurisdictions to develop a water quality credit program that allows certain types of development projects to claim water quality credits, if applicable, after demonstrating LID feasibility or infeasibility through the waiver process. Projects that may potentially be eligible for credits include, but are not limited to, redevelopment projects that reduce overall imperviousness of a site, brownfield redevelopments, certain higher density projects and mixed use developments, transit oriented development districts, and other in-fill projects. Application of water quality credits reduces the overall treatment volume requirement (design capture volume), that may have otherwise been unmet with the application of LID BMPs. Credits can be applied to reduce up to 50% of the original DCV required to be treated on-site. For projects in the North Orange County MS4 Permit area, credits can be applied before other alternative programs are evaluated and/or waiver requests are submitted.

Projects eligible for water quality credits include:

- Redevelopment projects that reduce the overall impervious footprint of the project site.

- Brownfield redevelopment, meaning redevelopment, expansion, or reuse of real property which may be complicated by the presence or potential presence of hazardous substances, pollutants or contaminants, and which have the potential to contribute to adverse ground or surface water quality if not redeveloped.
- Higher density development projects which include two distinct categories (credits can only be taken for one category): those with more than seven units per acre of development (lower credit allowance); vertical density developments, for example, those with a Floor to Area Ratio (FAR) of 2 or those having more than 18 units per acre (greater credit allowance)
- Mixed use development, such as a combination of residential, commercial, industrial, office, institutional, or other land uses which incorporate design principles that can demonstrate environmental benefits that would not be realized through single use projects (e.g. reduced vehicle trip traffic with the potential to reduce sources of water or air pollution).
- Transit-oriented developments, such as a mixed use residential or commercial area designed to maximize access to public transportation; similar to above criterion, but where the development center is within one half mile of a mass transit center (e.g. bus, rail, light rail or commuter train station). Such projects would not be able to take credit for both categories, but may have greater credit assigned.
- Redevelopment projects in an established historic district, historic preservation area, or similar significant city area including core City Center areas (to be defined through mapping).
- Developments with dedication of undeveloped portions to parks, preservation areas and other pervious uses.
- Developments in a city center area.
- Developments in historic districts or historic preservation areas.
- Live-work developments, a variety of developments designed to support residential and vocational needs together – similar to criteria to mixed use development; would not be able to take credit for both categories.
- In-fill projects, the conversion of empty lots and other underused spaces into more beneficially used spaces, such as residential or commercial areas.

Based on the land uses for the CollegeTown project, the use of water quality credits is anticipated. CollegeTown meets the water quality criteria for higher density development projects and the mixed use development, specifically because the proposed project will exceed the 18 units per acre requirement and have a combination of residential, commercial, office, and industrial uses. The water quality credits will be used to reduce the amount of volume required to satisfy LID performance. CollegeTown is anticipated to utilize 20 percent for the mixed used development and the 20 percent high density development, totaling an overall reduction of 40% (see Table 20).

Table 20 Water Quality Credit Qualifications Summary

<i>Planning Area</i>	<i>Proposed Land Use</i>	<i>Vertical Density Development</i>	<i>Mixed Use</i>	<i>Total Water Quality Credit Reduction</i>
PA 1	Residential, Office (MU/MFR)	20% Reduction	20% Reduction	40%
PA 2	Residential, Office, Institutional (MU/I)	20% Reduction	20% Reduction	40%
PA 3	Residential, Commercial, Institutional (MU/I)	20% Reduction	20% Reduction	40%
PA 4	Commercial, Office (C/O)	20% Reduction	N/A	20%
PA 5	Residential, Commercial (MU)	20% Reduction	20% Reduction	40%
PA 6	Residential, Commercial (MU)	20% Reduction	20% Reduction	40%
PA 7	Residential, Commercial (MU)	20% Reduction	20% Reduction	40%

LID Sizing per Planning Area

In order to evaluate conformance with WQMP requirements at the Specific Plan and Program-Level EIR, preliminary LID sizing for combined infiltration and bio-treatment BMPs was performed for each Drainage Management Area/Planning Area and summarized in Table 21 below. Since site-specific infiltration rates, drainage patterns and drawdown times are not available at this level of planning, partial infiltration of the DCV was estimated at 25% based on conservative estimates. Infiltration credit can occur through HSC’s, self-treating areas, or infiltration specific BMPs such as permeable pavement or drywell systems. Biotreatment Option A refers to bioretention facilities that are designed and built into the project and Option B refers to proprietary biotreatment units that are purchased such as Modular Wetlands or Filterra units.

The analysis in Table 18 identifies approximately how much square footage of biotreatment BMPs or proprietary biotreatment units will likely be required for treatment of the remaining runoff requirements for each Planning Area and public street improvements. Further details on sizing, design, and maintenance responsibilities for the media filtration unit will be documented in the project-specific WQMPs, prepared during later phases of the project.

Table 21 BMP Sizing Summary

Area Name	Area (ac)	Water Quality Credit Reduction	DCV ^a (ft ³)	Estimated DCV Infiltrated ^b (ft ³)	Remaining DCV to Biotreat (ft ³)	Biotreatment BMPs	
						Option 1: Bioretention Planters ^c (Minimum Footprint)	Option 2: Modular Wetland Units ^d (# of Units @ 4'x13' ea.)
Mixed Uses	68.4	40%	105,642	26,410	79,231	61,182	44
Nutwood Plaza	2.3	20%	2,711	678	2,033	1,570	2
N. Commonwealth	2.8	20%	5,581	1,395	4,186	3,232	3
College Place, Langsdorf, & Titan	1.0	20%	2,145	536	1,609	1,242	1
Other Interior Streets & Alleyways	0.6	0%	1,590	398	1,193	921	1
E. Chapman Ave.	5.2	0%	14,764	3,691	11,073	8,551	7

Notes:

DCV design capture volume cfs cubic feet per second

^a Simple Method DCV per Section III.1.1 of the Technical Guidance Document (County of Orange, 2011). Details are provided in Appendix E.

^b Assumes approximately 25% of the project DCV (simple method) is retained on-site via infiltration BMPs.

^c Minimum bottom area required to bio-treat remaining DCV after infiltration. Details are provided in Appendix E.

^d Minimum number of Modular Wetland Systems Model MWS-4-13-L, each unit treating up to 0.144 cfs.

Source Control BMPs

Source control BMPs effectively minimize the potential for typical urban pollutants to come into contact with runoff, thereby limiting water quality impacts downstream. This includes both non-structural measures, such as activity restrictions, maintenance, and training practices, and structural measures, such as material storage area and loading dock design features. A list of potential source control measures are provided below as identified in the Countywide Model WQMP:

- *(N1) Education for Property Owners, Tenants, and Occupants.* Educational materials related to urban runoff can be provided to tenants/property owners (via project owner and/or property owner association [POA]) and employees to reduce pollutants from reaching the storm drain system. Examples of environmental awareness materials include, but are not limited to: guidelines for landscaping and gardening, tips for pet care, vehicle cleaning, and proper disposal of household hazardous waste.
- *(N2) Activity Restrictions.* Activity restrictions can be developed to restrict activities that have the potential to create adverse impacts on water quality. Activities include but are not limited to: the handling and disposal of contaminants, trash management and litter control, irrigation and landscaping practices, vehicle and equipment cleaning, fertilizer applications and household waste management practices.
- *(N3) Common Area Landscape Management.* Common area landscape management that includes minimizing fertilizer and pesticide application, use of slow-release fertilizers, maintenance activities, providing education to property owners and tenants (via project owner and/or POA), and providing education and training for employees on management of landscape materials and storm water management.
- *(N4) BMP Maintenance.* In accordance with the City LIP and OC DAMP, the project owners and/or POAs of the individual project sites will be responsible for the implementation and maintenance of each applicable non-structural BMP, as well as scheduling inspections and maintenance of all applicable structural BMP facilities through its landscape contractor and any other necessary maintenance contractors for the project site. In addition, the project owner will be required to verify LID and treatment control BMP implementation and ongoing maintenance through inspection, self-certification, survey, or other equally effective measure. The certification shall verify that, at a minimum, the inspection and maintenance of all structural BMPs including inspection and performance of any required maintenance in the early fall, prior to the start of the rainy season, and in accordance with frequencies outlined in the project-specific WQMPs prepared for the project area.
- *(N5) Title 22 CCR Compliance.* Where applicable, project sites shall comply with Title 22 of the California Code of Regulations and relevant sections of the California Health and Safety Code regarding hazardous waste management, which will be enforced by County Environmental Health on behalf of the State.
- *(N7)²¹ Spill Contingency Plan.* Any facilities that store liquid materials or wastes shall maintain procedures for spill response and cleanup activities. Emergency spill kits

²¹ *(N6) Local Water Quality Permit Compliance.* The City of Fullerton does not issue water quality permits, and therefore this BMP is not applicable to the Project.

- shall be kept on-site at all times. Activities will be coordinated between the respective departments and the Police and Fire departments in the event of a spill.
- *(N8) Underground Storage Tank Compliance.* Any underground storage tanks proposed shall meet applicable Federal, State, County, and local regulations.
 - *(N9) Haz-Mat Disclosure Compliance.* Any projects that store or utilize hazardous wastes, where applicable, shall comply with the County of Orange Fire Authority hazardous material disclosure requirements.
 - *(N10) Uniform Fire Code Implementation.* The owner and/or POA shall ensure all structures comply with Article 80 of the Uniform Fire Code, City codes, County of Orange Fire Authority, and local standards.
 - *(N11) Common Area Litter Control.* Includes regular litter control for the entire project area including trash pickup and sweeping of littered common areas, as performed by the maintenance crew. In addition, pet waste receptacles should be provided throughout the project site where applicable.
 - *(N12) Employee Training.* Employees of the owner and/or POA, as well as any contractors of the aforementioned entities will require training to ensure that employees are aware of maintenance activities that may result in pollutants reaching the storm drain.
 - *(N13) Housekeeping of Loading Docks.* Loading dock housekeeping measures will be implemented where applicable to keep the areas clean and orderly condition.
 - *(N14) Common Area Catch Basin Inspection.* Includes routine maintenance of all catch basins, grate inlets, etc. for debris and litter removal. All on-site catch basins inspected and cleaned prior to the rainy season, no later than October 1st each year.
 - *(N15) Street Sweeping Private Streets and Parking Lots.* Street sweeping of all impervious streets and parking lots performed at a frequency that reduces or prevents sediment and debris from entering receiving waters and prior to the rainy season.
 - *Storm Drain Stenciling and Signage.* Storm drain stenciling or signage on all catch basins with highly visible source control messages (e.g., "no dumping drains to ocean").
 - *Proper Outdoor Hazardous Material Storage Design.* Any areas proposed for outdoor hazardous material storage shall be paved accordingly and storage bins will include sidewalls to contain the materials. There will be a drainage grate along the front of the storage bins with an outlet screen that traps material to prevent pollutants from entering the storm drain. Any hazardous materials shall be stored in storage cabinets, sheds or enclosures that meet all applicable regulations.
 - *Trash Enclosures.* All trash and waste shall be stored in containers that have lids or tarps to minimize direct precipitation into the containers. The storage areas shall be paved, and either be sloped or include a barrier to keep drainage out of the storm drain.
 - *Efficient Irrigation Systems and Landscape Design.* Installing and maintaining efficient irrigation systems designed to minimize water by eliminating overspray to hardscape areas, and setting irrigation timing and cycle lengths in accordance with water

demands, given time of year, weather, and day and night temperatures. Where feasible, incorporation of native tolerant species for landscaping, protection of slopes and efficient irrigation. May be used in conjunction with educational materials to homeowners/tenants as well as activity restrictions.

- *Loading Dock Areas.* Any new loading docks shall be built at-grade, generally draining away from the buildings towards the drive aisles. In addition, loading dock housekeeping measures shall be implemented where applicable to keep the areas clean and orderly condition.
- *Maintenance Bays.* Any maintenance bays proposed shall be designed in accordance with OC DAMP standards. Examples include locating facilities indoors, and draining nuisance flows to an oil/water separator that is connected to the sanitary sewer system.
- *Equipment Wash Areas.* Any equipment wash areas proposed shall be designed in accordance with OC DAMP standards. Examples include designing the area to be self-contained and covered, preventing the runoff from entering the storm drain system with berms or containment structures, and collecting runoff in a sump for disposal. Discharge from an equipment wash area to the storm drain system is prohibited.
- *Vehicle Wash Areas.* Any vehicle wash areas proposed shall be designed in accordance with OC DAMP standards. Vehicle wash areas shall be self-contained or covered, equipped with a wash rack and clarifier or other pretreatment facility. Discharge from a vehicle wash area to the storm drain system is prohibited.
- *Outdoor Processing Areas.* Any outdoor processing areas proposed shall be designed in accordance with OC DAMP standards. Areas shall be enclosed and covered to preclude storm water, and not be allowed to discharge into the storm drain system.
- *Wash Water Controls for Food Preparations Areas.* Any food preparation facilities proposed shall meet all health and safety, building and safety and any other applicable regulations and code requirements, such as the installation of grease interceptors. Discharge of wash water from food preparation areas to the storm drain system is prohibited.
- *Community Car Wash Racks.* Any community car wash racks proposed shall be designed in accordance with City and OC DAMP standards. Wash waters from area may be directed to the sanitary sewer (with approval), to an engineered infiltration system, or an equally effective alternative. Discharge from a wash area to the storm drain system is prohibited.

BMP Operations & Maintenance (O&M) Requirements

BMPs that are left un-maintained can be a source of sediment containing concentrated pollutants from the residential areas and also a source for mosquito breeding. These can be considered an environmental impact if left unmanaged. Operation and maintenance (O&M) activities for the water quality basins to prohibit these impacts would include the following:

- Conducting frequent site inspections by qualified personnel to observe the integrity of the facility over time.