Chapter 6

POST CONSTRUCTION STORM WATER MANAGEMENT PROGRAM

I. Introduction

As communities grow and are developed, impervious surfaces tend to replace the area's natural topography and vegetation. This frequently results in the alteration of natural watercourses and drainage patterns that, in turn, can cause increased storm water runoff rates and erosion. In addition, new developments or redevelopments often create a more densely populated area and generate additional pollutant loads to the storm drain system and the environment. Therefore, it is important to implement a program that controls flow and water quality on a long-term basis well after a site has been constructed or redeveloped.

The goal of the City's Post Construction Storm Water Management Program is to ensure that new developments or redeveloped sites are designed and constructed in a manner that minimizes the long-term impacts on storm water quality. By considering water quality during the design phase of a project, Best Management Practices (BMPs) can be incorporated into a project's design from the beginning for a more efficient and effective way to curb the discharge of urban pollutants.

Since most of the City is effectively "built out," the program is directed at both small and large developments. The program also includes redevelopment (remodeling) projects with particular attention given to those of significant size. The program addresses commercial, industrial, and residential projects.

The Post Construction Storm Water Management Program will work in tandem with construction site controls to reduce pollutant impacts from new developments and remodeling projects.

The objectives of the City's Post Construction Storm Water Management Program are to:

- Ensure that new developments and remodeled sites are designed and constructed in a manner that minimizes:
    - the alteration of natural watercourses and drainage patterns;
    - the impact of new developments or remodeling projects on a site's natural topography and vegetation; and
    - water quality impacts from post-construction runoff.
- Ensure the long-term maintenance of any runoff or pollution control devices installed at a site.

- Ensure that the design standards, contained in Attachment 4 of the Phase II NPDES General Permit for Discharges of Storm Water from Small Municipal Separate Storm Sewer Systems (General Permit and the City's mandatory BMPs for development and redevelopment (remodeling projects), are incorporated into all applicable projects.

II. Pollutants of Concern and Target Audience

EPA guidance documents state that post-construction storm water runoff may adversely impact the environment in two major ways. First, storm water runoff flowing over areas altered by development can pick up pollutants, such as sediment and chemicals, and carry them into the nearest downstream water body. Increased runoff flow rates may alter drainage patterns, create erosion on slopes, and scour stream banks. In addition, since the San Lorenzo River and other water bodies in the City are TMDL listed for sediment, the primary post-construction pollutant of concern is sediment and this will be focused upon. (For more information about how the City will be addressing TMDLs in the SWMP, please see Chapter 9). Other pollutants of concern are metals, pesticides and fertilizers, oil and grease, and fuel; which will also be addressed.

The target audiences are local contractors, architects, builders, developers, and any applicant, such as a property owner, for a discretionary permit. These audiences are targeted so that they can be aware of the new post-construction regulations prior to commencing a project in order to ensure the incorporation of mandatory design standards and the long-term maintenance of BMPs.

III. Program Elements and Best Management Practices

The City selected the appropriate Best Management Practices (BMPs) after first identifying the pollutants of concern and the target audiences associated with those pollutants. Also taken into consideration were the best means to communicate with these audiences, what specific pollution prevention information should be conveyed, and how to conduct enforcement actions when necessary. Lastly, BMPs were also selected based on the most appropriate and effective methods to achieve program goals and compliance with the General Permit requirements.

The Post Construction Storm Water Management Program includes the following elements in order to reduce the pollutants of concern described above to the maximum extent practicable:

- Legal Authority
  - Storm Water Ordinance
  - Grading Ordinance
  - Zoning Ordinance
  - Title 4 of the Municipal Code
  - Creeks and Wetlands Ordinance
- Protection of Riparian Areas, Wetlands, and Their Buffer Zones
  - City-Wide Creeks and Wetlands Management Plan

- ❖ Mandatory BMPs/Design Standards for Development and Remodel Projects
- ❖ Development and Implementation of Hydromodification Control Standards
- ❖ Long-Term Watershed Protection
- ❖ Development Permits
    - Plan Review Process
    - Zoning Permits
    - Construction Permits
- ❖ Site Inspections
- ❖ Long-Term BMP Maintenance and Monitoring
- ❖ Corrective Measures and Enforcement Procedures
- ❖ Education and Outreach
    - BMP Brochure for Development and Remodeling Projects
    - LID and Hydromodification Control Outreach and Education
    - Public Education on the Restoration and Protection of Riparian and Wetland Areas
- ❖ Training and Education of City Staff

The program elements are described in more detail in the sections below. The selected BMPs are listed and described under each program element.

Legal Authority

Storm Water Ordinance

On April 28, 1998, the City adopted a Storm Water Ordinance, which became effective on May 28, 1998. The ordinance, entitled "Storm Water and Urban Runoff Pollution Control," is Chapter 16.19 of the City's Municipal Code. The ordinance established the legal authority to prohibit illicit connections and pollutant discharges to the storm drain system. The ordinance also provides the City with the legal authority to conduct inspections and sampling. In addition, the ordinance contains a provision requiring the implementation of mandatory BMPs, as published by the Public Works Department. The City has the authority to terminate illicit connections and discharges, and to initiate enforcement actions for violations of the code. Potential enforcement actions include written notices, citations, termination of discharge, and monetary penalties.

The City recently revised the Storm Water Ordinance in July 2003 in order to incorporate new Phase II storm water regulations, and to keep it comparable with the Sanitary Sewer Ordinance that was recently revised. The revisions included an increase in monetary penalties, to equivalent amounts specified in the Sewer Use Ordinance, for violations of the Municipal Code. For example, civil penalties were increased from a maximum of $1,000 per day to a maximum of $2,500 per day for each violation of the ordinance. The Storm Water Ordinance is included in Attachment 2.

Grading Ordinance

The Grading Ordinance, officially titled "Chapter 18.45 Excavation and Grading Regulations, is a subset of Municipal Code, Title 18, Buildings and Construction. The ordinance provides technical regulations on grading and excavation in order to:

- Safeguard life, health, safety and the public welfare.
- Protect fish and wildlife, riparian corridors and habitats, water supplies, and private and public property.
- Protect the environment from the effects of flooding, accelerated erosion and/or deposition of silt.

The ordinance accomplishes this by providing guidelines, regulations, and minimum standards for the following:

- Clearing, excavation, cuts, fills, earth moving, grading operations (including cumulative grading), water runoff and sediment control.
- Administrative procedures for issuance of permits
- Approval of plans and inspections during construction and subsequent maintenance.

The City revised the Grading Ordinance in order to strengthen the ordinance regarding implementation of BMPs, including those for erosion and sediment control. Modification of the Grading Ordinance included a requirement that all construction projects abide by the City's mandatory BMPs. In addition, the City included a provision that erosion and sediment control BMPs be in place and implemented, as appropriate, prior to commencing construction activity including grading or vegetation removal.

The Grading Ordinance was also modified to include a requirement that Post-Construction BMPs, in accordance with the City's mandatory BMPs for Development and Remodeling Projects, be in place upon completion of a construction project. The City modified the Grading Ordinance in April 2004. The Grading Ordinance is included in Attachment 3.

Enforcement of the Grading Ordinance is authorized and conducted in accordance with the Grading Ordinance and Title 4 of the City's Municipal Code. Enforcement of the Grading Ordinance is authorized and conducted in accordance with the Grading Ordinance and Title 4 of the City's Municipal Code. Title 4 of the Municipal Code is entitled "General Municipal Code Enforcement" and is further described below.

Zoning Ordinance

The Zoning Ordinance, Title 24 of the Municipal Code, currently contains provisions to ensure that new developments or remodeled sites are designed and constructed in a manner that limits alteration of drainage patterns, prevents erosion, and minimizes long-term impacts on water quality. For example, Chapter 24.14 of the ordinance, entitled "Environmental Resource Management," contains a section on Conservation Regulations that includes general provisions for drainage and erosion controls. Provisions pertaining to drainage control include requirements that a drainage plan be submitted for projects, both large and small, when existing drainage

patterns would be altered by new construction. A drainage plan must be submitted and reviewed as part of the project approval. In addition, if a proposed project includes the discharge of runoff into a natural watercourse, the drainage plan must include methods to safeguard or enhance the existing water quality. In addition, the ordinance requires that storm water runoff resulting from project development be minimized. To that end, devices such as detention basins, percolation ponds, or sediment traps may be required, where appropriate or as specified in an adopted plan or wetlands management plan.

Provisions pertaining to erosion control include requirements that a site development be fitted to the topography and soil in order to create the least potential for erosion. Vegetation removal is limited to the amount necessary and according to the project's approved erosion control plans. Temporary vegetation, sufficient to stabilize the soil, is required to be established on all disturbed areas and as each phase of grading is completed while the permanent vegetation is maturing.

The Zoning Ordinance also includes regulations for development in areas characterized by combustible vegetation and steep and/or unstable slopes. Such areas include canyons, arroyos, and slopes over thirty percent. The ordinance also addresses development near or adjacent to intermittent or perennial streams, wetlands, marshes, and seasonally flooded grasslands. For example, construction of main or accessory structures, grading or vegetation removal is not permitted in any designated riparian area or within one hundred feet of a watercourse or a wetland. Exceptions are allowed in certain circumstances, as specified in the ordinance, such as when necessary for protection against erosion, scouring, and for maintenance of flow. For wetlands, marshes and seasonally flooded grasslands, exceptions are also granted if a restoration and management plan has been submitted and approved, and any construction and/or use is consistent with the approved plan. The ordinance also requires that landscaping, grading, and building design ensure the ongoing viability of the remaining vegetation and, if any vegetation is removed, that it is replaced by vegetation of an equivalent kind, quality, and quantity.

The Zoning Ordinance, Title 24, is included, in Attachment 4.

Title 4 of the Municipal Code

Title 4 is entitled "General Municipal Code Enforcement." It is the chapter of the Municipal Code that was established in 2000 to provide a comprehensive code enforcement system for the City. In summary, Title 4 provides definitions, details, and specific procedures for a variety of code enforcement measures. For example, it provides for the issuance and recordation of Notices of Violation; the authority to inspect; the authority to issue a Notice to Appear and Release Citations, and the power to arrest. Title 4 also details the procedures regarding Judicial Remedies and Administrative Remedies available to the City for violations of the Municipal Code and applicable state codes. In addition, Title 4 details Summary Abatement and Administrative Abatement procedures for public nuisances and code violations. Lastly, Title 4 provides for the recovery of civil penalties and abatement costs. Please refer to Attachment 5 for a copy of Title 4.

Creeks and Wetlands Ordinance

The purpose of the Creeks and Wetlands Ordinance is to carry out the goals of the City-Wide Creeks and Wetlands Management Plan (*Management Plan*) by applying development standards to lands adjacent to watercourses within the City of Santa Cruz that will enhance and protect watercourse functions and values. The *Management Plan* was developed to identify and map the watercourses and known wetlands within the City limits, identify appropriate development setbacks, recommend management actions which promote the preservation of riparian and wetland resources, define development guidelines and standards for areas where development adjacent to watercourses may be appropriate, and provide a framework for permitting development adjacent to watercourses. The *Management Plan* presents a strategic approach to stream corridor management that is intended to result in better protection, enhancement, and management of the City's riparian and wetland resources and water quality, while providing consistency and predictability of the City's permitting process.

As part of development of the *Management Plan*, all City watercourses and known wetlands were identified and mapped. Resource characteristics were inventoried for each watercourse reach, including stream or channel type, habitat type, the extent of riparian vegetation, and wildlife considerations. The inventory was used to assess the existing habitat and hydrological values for each watercourse reach, as well as potential for habitat or water quality enhancement. The inventory was based on high resolution aerial photographs, a GIS database, review of existing resource studies, and biological and land use site inspections, where feasible. Land use patterns were also identified, including the average distance between the watercourse and existing development.

Based on an evaluation of biological, hydrological, and land use characteristics, the *Management Plan* recommends specific setbacks and establishes a process for obtaining a Watercourse Development Permit for development within setback areas. For wetlands and other unique areas of ponding water, the *Management Plan* identifies general acceptable uses and enhancement actions, but recommends further site-specific biotic review, since detailed analysis or wetland delineations were not conducted as part of the preparation of the *Management Plan*.

The *Management Plan* and the Creeks and Wetlands Ordinance were adopted by the City Council on February 28, 2006 and certified as a Local Coastal Program (LCP) amendment by the California Coastal Commission (CCC) in October of 2007. Modifications to the *Management Plan* requested by the CCC were approved by the City Council in March of 2008 and a final reading was approved by the City Council in April of 2008. The Creeks and Wetlands Ordinance is included in the City's Zoning Ordinance under Chapter 24.08 Part 21: Watercourse Development Permit. This part of the zoning title is also part of the Local Coastal Implementation Plan.

Protection of Riparian Areas, Wetlands, and Their Buffer Zones

As mentioned above, the City has a Creeks and Wetlands Ordinance and a newly developed City-Wide Creeks and Wetlands Management Plan (*Management Plan)* that are designed to protect riparian areas, wetlands, and their buffer zones. The Creeks and Wetlands Ordinance is described above and the *Management Plan,* which was approved by the City Council in February 2006, is described in the paragraphs below.

City-Wide Creeks and Wetlands Management Plan

In 2006, the City adopted the Creeks and Wetlands Management Plan (*Management Plan)* to protect riparian areas, wetlands, and their buffer zones as described above. A detailed description of how the *Management Plan* was developed is provided in the paragraphs below. Following the background information about the plan's development process, are details regarding the *Management Plan*'s strategic approach to stream corridor management and the riparian corridor and development setbacks.

Background:

Prior to adoption of the *Management Plan*, a 100-foot setback was required to be maintained from all riparian areas, wetland areas and streams unless a site-specific biotic report and management plan were prepared and implemented to protect riparian resources and water quality. Any approval to development within 100 feet was required to be processed as a Variance to the City's zoning regulations. This resulted in a process that was extremely difficult to administer, and was very time-consuming and costly to the affected property owners. As a result of discussions with California Coastal Commission staff, it was agreed that the City would undertake preparation of a *Management Plan* to begin to treat these resources as an integrated system. The *Management Plan* was also intended to better clarify the City's policies and procedures pertaining to development activities in proximity to such resources.

In February of 2000, the City Council approved the scope of services for the *Management Plan*, which was partially funded under a grant from the Coastal Commission. A scientific consultant team was hired, and work on the *Management Plan* progressed in accordance with the work program directed and authorized by City Council, and requested by the Coastal Commission. The project kick-off meeting was held in May of 2000. As a result of the initial public meeting, a contract amendment was requested (and approved) in July of 2000, to conduct additional public outreach meetings. After the first work products (classification system and maps) were prepared, three public meetings were held to update the hearing bodies and other interested members of the public on the status of the project, and to provide opportunities for input to the City.

An initial draft *Management Plan* was released for public review in April of 2002. A joint workshop was held in May of 2002 with the City Council and Planning Commission to provide information on the draft *Management Plan* recommendations and mapping system, and to provide an opportunity for comment. Four public hearings were then held with the Planning Commission in 2002. Many people were concerned with the setbacks that were proposed within such an urban area. At the final meeting in 2002, the Planning Commission recommended that modifications recommended by staff and others through public comment be made to the *Management Plan*, especially a re-evaluation of the recommended development setbacks. The Planning Commission also requested that the City Council provide support and resources for neighborhood workshops.

A public hearing with the City Council was held in January of 2003. At the hearing, the City Council directed staff to conduct a re-evaluation of the watercourses in the City, and, if appropriate, update the recommendations for setbacks to development. The City Council also

directed staff to conduct neighborhood workshops to go over the results of the re-evaluation and the recommendations developed by staff.

As part of the re-evaluation, staff utilized aerial photos enlarged to a greater scale than those originally used, and conducted a more detailed analysis of existing development. A field review of each segment (or reach) of all watercourses followed, reviewing as many private properties as possible to gain access to the reach areas that were not previously evaluated in any level of detail. In this manner, an appropriate level of field review was conducted to ensure that recommended riparian corridor and development setback areas are realistic and feasible, given the location of existing development and the intent to meet General Plan goals.

After the re-evaluation was completed, two public workshops were held in the spring of 2004. Although there were still some concerns expressed by the public and several decision-makers regarding the *Management Plan* permitting recommendations, in general it seemed that many peoples' concerns had been addressed. In an effort to try to address ongoing concerns regarding arduous permit requirements in urban areas, staff categorized each watercourse based on the type of watercourse, characteristics of surrounding habitat, and the proximity of existing development to allow certain types of development projects to be exempt from watercourse permit requirements in areas where little to no resource values exist or where the project clearly would not impact adjacent resources.

An updated Draft *Management Plan* was released for public review in the fall of 2005. Environmental review was conducted for the project and an Initial Study was prepared in accordance with the State California Environmental Quality Act (CEQA) Guidelines and the local City of Santa Cruz CEQA Guidelines and Procedures. The Initial Study found that the proposed project would have a less than significant impact on the environment. Consequently, a Negative Declaration was adopted.

In December of 2005 the Planning Commission conducted a two public hearing concerning the *Management Plan*, Negative Declaration and Zoning Ordinance amendments. Public testimony was taken from many people both for and against the *Management Plan*. After a period of discussion, the Planning Commission voted to recommend to the City Council adoption of the Negative Declaration and approval of the *Management Plan.*

The *Management Plan*, Negative Declaration and the Creeks and Wetlands Ordinance amendments were adopted by the City Council in February of 2006 and certified as a Local Coastal Program (LCP) amendment by the California Coastal Commission (CCC) in October of 2007. Modifications to the *Management Plan* requested by the CCC were approved by the City Council in March of 2008 and a final reading was approved by the City Council in April of 2008.

Management Plan Purpose and Content:
As stated previously, the purpose of the *Management Plan* is to identify and map the watercourses and known wetlands within the City limits; identify appropriate development setbacks based on evaluation of habitat, stream and land use characteristics; recommend management actions which promote the preservation of riparian and wetland resources, define development guidelines and standards for areas where development adjacent to watercourse may

be appropriate, and provide a framework for permitting development adjacent to watercourses. The *Management Plan* presents a strategic approach to stream corridor management that is intended to result in better protection, enhancement, and management of the City's riparian and wetland resources and water quality, while providing consistency and predictability of the City's permitting process.

The *Management Plan* is an extensive and detailed management plan which:

~ Summarizes key City policies and regulations regarding riparian and wetland protection;

~ Describes the methods used to prepare the *Management Plan*;

~ Summarizes key hydrological and habitat conditions for existing watercourse segments;

~ Presents recommended development setbacks;

~ Outlines a process for permitting development adjacent to watercourses; and

~ Maps City watercourses and wetland areas.

The primary long-term goals of the *Management Plan* are to:

- Reduce and/or eliminate pollutants discharged to aquatic bodies;
- Improve water quality;
- Improve and restore natural habitat;
- Increase biodiversity;
- Lower water temperatures; and
- Increase public awareness of the value of watershed quality.

The *Management Plan* provides specific setback requirements for watercourses based on an evaluation of biological, hydrological, and land use characteristics. For each section of a watercourse, the recommended setbacks include a management area, which is the area where watercourse regulations apply, and a riparian corridor and a development setback area, which are located within the management area. These setbacks are applied to all watercourse segments. However, setbacks for wetland areas would be subject to site-specific review. (Please see below for a discussion on wetlands.)

The *Management Plan* has already established in most cases a minimum buffer zone, which is 30-feet or substantially more, for watercourses in order to protect riparian areas. In developing recommendations for setbacks for the *Management Plan*, several factors were evaluated. For each watercourse, site features were ranked according to the level of the function provided. Where a watercourse was positive for a factor, such as the presence of special status species, that factor was ranked high. If the watercourse did not provide the feature, the factor was ranked low. A watercourse factor was scored medium if it partially provided a site feature. The following factors and ranking criteria were used in recommending watercourse classifications and evaluating setbacks:

- Factor A – Primary Habitat Ranking. The biological function of the watercourse, based on the type of primary habitat and its continuity to upstream or downstream habitats.

- Factor B – Special Status Species Ranking. The presence or potential presence of special status species along a watercourse or wetland.
- Factor C – Average Width of Riparian Corridor Ranking. The average width of vegetated area, as measured from centerline of watercourse.
- Factor D – Open Areas and Dispersal Ranking. The opportunity of riparian vegetation to grow outward from its existing area (i.e., expansion of existing tree canopy as trees grow and mature), the presence of an open area between the tree canopy and structures and the ability of the corridor to provide avenues for wildlife dispersal.
- Factor E – Enhancement and Restoration Potential Ranking. The opportunity for restoration and enhancement of the riparian corridor, including unearthing underground segments, removal of invasive, non-native plant species and re-vegetation of a diverse native riparian resource.

Development setbacks were proposed for each watercourse based on the ranking of these factors. A field review of the reach areas was included by a consultant team and City staff, visiting as many private properties as possible to gain access to the reach areas. In this manner, the existing average width of the riparian corridor (if any), as well as the average distance between the watercourse/wetland and existing development, was better ascertained. This level of review was conducted to ensure that the setbacks recommended by the *Management Plan* would be realistic and feasible, given the location of existing development.

For those watercourse segments that have limited setbacks (less than 30 feet), the total ranking of the factors described above was low. For these areas, the habitat is typically dominated by invasive, non-native plant species, a low potential for special status species exists due to lack of suitable habitat, the riparian corridor is significantly degraded or non-existent (e.g., in a culvert), the watercourse abuts developed areas and vegetation was typically confined to the narrow channel with little or no ability for wildlife movement out of the active channel, the watercourse segment is constrained by adjacent development and there is little room for restoration without significant land acquisition or easements. In addition, little opportunity exists for establishment of native riparian resources in these areas or to infill existing gaps in the corridor.

Management Area:
In the *Management Plan,* the designated management area is defined as the area adjacent to all watercourses. It includes a riparian corridor, a development setback area, and an additional 25 feet outward from the edge of the development setback. New development is allowed from the edge of the development setback area outward. Approval of Watercourse Development Permit may be required in this area. Development located outside of the management area would not be subject to watercourse regulations.

Riparian Corridor:
In the *Management Plan,* the riparian corridor (measured from the centerline of the watercourse) is defined as adjacent to the watercourse and is the width of riparian vegetation and/or immediate watercourse influence area, measured outward from the centerline of the watercourse. The

riparian corridor is intended to provide an adequate riparian width to maintain or enhance habitat and water quality values. Allowable uses with the riparian corridor are limited.

Development Setback Area:
The development setback area is defined as the area outward from the edge of the designated riparian corridor where development is restricted, and is measured from the centerline of the watercourse. The development setback width is intended to provide an appropriate water quality and habitat buffer between the riparian corridor and development with the remaining management area. New development is generally limited in this area to landscaping and limited pervious surfaces.

Watercourse Categories:
In order to determine the level of permit review required for the variety of watercourse types within the City, all watercourse reaches are categorized as either an "A", "B", or "C" watercourse. Category "A" includes watercourses and /or watercourse reaches that support high quality riparian habitat, with a vegetated corridor that is continuous and with few gaps. Category A" watercourses abut undeveloped lands or rural residential yard areas that provide ability for wildlife to utilize these adjacent areas, with some available area for riparian vegetation to expand within the corridor over time. This category generally has the known presence of or high potential for a special status species. The goals of this category include protecting and restoring existing vegetated watercourses as wildlife movement corridors through removal of invasive non-native plant species and restoration of native vegetation, as well as protection and improvement of water quality with implementation of proper erosion control and best management practices, and planting of appropriate species.

Category "B" includes watercourses and /or watercourse reaches that are located in urban areas and that function primarily as a drainage system. The category includes watercourses with limited riparian habitat that is generally confined by adjacent land uses which limits its ability for the corridor to expand. Water quality issues and flow conveyance are the focus of this category. The goals of this category include improving habitat by voluntary removal of invasive, non-native plant species, and improving water quality and flow with implementation of proper erosion control and best management practices, and planting of appropriate species.

Category "C" includes drainage channels that area concrete or man-made, and above or below ground culverts with very low to no habitat value. The corridor is fragmented or non-existent, with little to no room for restoration without significant land acquisition or easements. Category "C" watercourses are exempt from these watercourse regulations.

Watercourse Development Permit Procedures:
Chapter 4 of the *Management Plan*, entitled "Watercourse Development Permit Procedures," describes the overall watercourse management goals and outlines the categories of watercourses subject to the Watercourse Development Permit. Development projects and specified activities within the management area would be subject to City review to assure compliance with the *Management Plan* and zoning requirements, and to determine whether an activity is exempt or would require a Watercourse Development Permit. This would include review of some activities that are not subject to building, grading, or other permits, such as landscaping and installation of

decks and paving. Except for specified exempt projects, all development projects in the management area would be subject to administrative review and approval of a Watercourse Development Permit.

Generally, Watercourse Development Permits would be required for allowed uses within any zone of a Category A watercourse and for allowed uses within the riparian corridor and development setback areas of a Category B watercourse. Development activities within Category C watercourses are exempt. Development outside of the management area for any watercourse would not require a Watercourse Development Permit. The *Management Plan* recommends that certain activities would be exempt from watercourse regulations (exempt from a permit), where those activities clearly would not have an impact on watercourse resource values. A summary table, with the list of watercourses and each of their categories and the recommended setbacks, is provided as Attachment #26.

Allowable projects or activities would be required to comply with applicable Watercourse Development Standards, and management guidelines are identified that property owners would be encouraged to implement. The standards address the issues identified below:

- Use of permeable paving;
- Drainage and water quality protection;
- Use of suitable plant materials;
- Use of appropriate lighting;
- Habitat enhancement;
- Construction Best Management Practices;
- Management in High Fire Hazard Areas; and
- Erosion control and bank protection measures.

Chapter 4 of the *Management Plan* recommends a Variance procedure for projects that do not comply with development standards or projects requiring exceptions to the Watercourse Development Standards. Although a Variance is not expected to arise often, there may be limited situations in which a Variance may be requested. Lesser setbacks would be permitted only if application of the minimum setback standards would render the parcel physically unusable for a principal permitted use. In allowing a reduction in the minimum setbacks, the setback would be reduced only to the point at which a principal permitted use (as modified as much as is practical from a design standpoint) can be accommodated. The Variance request would be required to submit technical biological and hydrological studies that demonstrate no impacts would occur to the habitat and watercourse resources.

Watercourse and Wetland Setback Analysis:
Chapter 3 of the *Management Plan*, entitled "Watercourse and Wetland Setback Analysis," includes a description of the existing watercourses and wetlands within the City and the recommended riparian corridor width and development setbacks for each including any defined reaches. This chapter also describes the evaluation process that was used to rank watercourses and wetlands, which was then used to recommend appropriate development setbacks for each watercourse, consistent with physical features, habitat conditions and land uses.

Watercourse Development Permit Procedures:
Chapter 4 of the *Management Plan*, entitled "Watercourse Development Permit Procedures," describes the overall watercourse management goals and outlines the categories of watercourses subject to the Watercourse Development Permit. A summary table, with the list of watercourses and each of their categories and the recommended setbacks, is provided. In addition, the chapter outlines the watercourse permit process and variances, and details the development and activity types subject to permits and the uses permitted within the designated setback areas. Development standards to protect and/or enhance habitat conditions and water quality are also presented. Please refer to Attachment # 26 for a copy of this chapter which includes the watercourse summary tables.

Wetlands/Adopted Management Plans:
The *Management Plan* "maps" known wetland areas. For wetlands and other unique areas of ponding water, the *Management Plan* recommends further site-specific biotic review, since detailed analysis or formal wetland delineations using U.S. Amy Corps of Engineers, Coastal Commission, or other regulatory agency criteria were not conducted as part of the preparation of the *Management Plan*. These parcels have been delineated on the separate aerial maps as areas that may require further biotic review if the proposed development has the potential of impacting existing resources.

For these types of parcels with wetlands and other unique areas of ponding water subject to a setback, the setback area can encompass undeveloped lands such as the seasonal wetlands in Moore Creek Preserve. Some of the wetland setbacks, however, such as along Westlake Pond and Neary Lagoon encompass residentially developed areas, City streets and other infrastructure facilities. A standard minimum setback is not recommended as a requirement as it may not be appropriate in cases where existing development may make a standard 30-foot setback unfeasible. Instead, the City requests that site-specific biotic review be conducted to determine if the area of ponding water meets the definition of a wetland. If the area is determined to be a wetland, then a minimum 30-foot setback may be appropriate.

Lastly, lands that are within the boundary of an adopted management plan or within public lands that have pending management plans are subject to the requirements set in those plans. Most, if not all, of the management plans speak to the need to do detailed biotic studies to establish setbacks and development envelopes.

A summary of adopted or pending management plans, several of which contain wetland areas within the City, are included in Appendix H of the Creeks and Wetlands Plan. This summary is also included in Attachment 27 for easy reference. The management plans summarized in Appendix H of the *Management Plan* include the following:

- San Lorenzo Urban River Plan
- Neary Lagoon Management Plan
- Moore Creek Corridor Access and Management Plan
- Moore Creek Preserve Interim Management Plan
- Antonelli Pond Management Plan
- Jessie Street Marsh Management Plan
- Long Marine Laboratory Coastal Long Range Development Plan

- Younger Lagoon Natural Reserve Management Plan
- Lighthouse Field State Beach General Plan
- Arana Gulch Interim Management Plan
- Pogonip Master Plan
- Natural Bridges State Beach General Plan

For several of these areas, including Neary Lagoon and Moore Creek Preserve, setbacks from the wetland/pond are specified. For Neary Lagoon, the Neary Lagoon Management Plan specifies a 100 foot wide wetland buffer for development, such as parking and housing, adjacent to the lagoon. In the Moore Creek Preserve, there are two marsh/pond areas. For the salt water and brackish marsh located near Natural Bridges State Beach, the *Management Plan* specifies a riparian corridor of 100 feet and a development setback of 130 feet. Further upstream in the Preserve, just above Delaware Avenue, is Antonelli Pond for which the *Management Plan* also specifies a riparian corridor of 100 feet and a development setback of 130 feet.

For wetlands or areas of ponding water on private property, (these areas have been delineated by a green and yellow dot on the aerial photo maps), when the City receives an application for a development project, further site-specific review is required. For these parcels, if a property owner proposed development adjacent to the "dotted" area, the Planning Department requires site-specific review by a City approved biologist to determine appropriate setbacks and recommend measures to protect the resource during construction and provide long-term habitat and water quality protection. The biotic review would only be required if the area of ponding water would potentially be impacted (depending on the location of the development on the parcel in relation to the location of the pond or wetland). It should be noted that the "ponds" identified on the aerial photo maps include decorative, man-made ponds that may have little habitat value.

On City owned property, no new City development projects will be permitted within 30 feet of a wetland without an approved project-specific habitat management plan and a site-specific water quality management plan.

The *Management Plan*, creek maps, and other related information may be viewed on the City's website at http://www.cityofsantacruz.com/ (under the Planning and Community Development Department webpage).

BMP #PC-1: On City Owned Property, No New City Development Projects Shall Be Permitted Within 30 feet of a Wetland Without An Approved Project-specific Habitat Management Pan and a Site-specific Water Quality Management Plan.

Mandatory BMPs/Design Standards for Development and Remodel Projects

According to the General MS4 Storm Water Permit (General Permit), the City is required to ensure that all discretionary development and remodeling projects that fall into one of the following categories abide by the design standards contained in Attachment # 4 of the General Permit:

- Hillside Residences (includes single-family homes, apartments, condos, townhouses, and mobile homes)
- 100,000 Square Foot Commercial and Industrial Developments
- Automotive Repair Shops
- Retail Gasoline Outlets
- Restaurants and Food Processing/Manufacturing Facilities including Wineries
- Subdivisions with 10 or more housing units (includes single-family homes, apartments, condos, townhouses, and mobile homes)
- Parking lots 5,000 square feet or more in size, or with 25 or more parking spaces and potentially exposed to storm water runoff

Thus, in 2003, the City developed mandatory "Best Management Practices (BMPs) for Development and Remodeling Projects" in order to establish storm water design standards/BMPs based upon Attachment #4 of the General Permit. The City also determined that there were additional provisions that needed to be included in the City's mandatory BMPs/design standards in order to control post-construction runoff to the maximum extent practicable (MEP) and to address certain local issues of concern. For example, the City requires that trash enclosure areas have a roof, be paved and impervious to leaks and spills. The City also requires that trash enclosures have a drain to the sanitary sewer to ensure the proper disposal of cleaning wastewater. In January 2004, the City's mandatory "BMPs for Development and Remodeling Projects" was published as a brochure for easy distribution to contractors, architects, and other permit applicants.

As the City applied these BMPs/design standards to new project applications, staff saw the need for additional requirements in order to make the mandatory BMPs even more locally appropriate. For example, the Restaurant category was expanded to include food processing/manufacturing facilities and wineries because these facilities have similar issues as restaurants and they have the potential to discharge oil/grease or food waste to the storm drain system. The City also broadened the applicability of the BMPs to ensure that parking lots 1,000 square feet or more in size abide by the BMPs. Also, the City decided that the BMPs should be applied to Commercial and Industrial Developments equal to or greater than 1 acre in size rather than 100,000 square feet because the City rarely, if ever, has a commercial development that large. Thus, in March 2004, a revised mandatory "BMPs for Development and Remodeling Projects" was published.

The mandatory BMPs were revised again in March 2007 with minor changes and the BMP brochure republished. The BMP brochure will be revised again, as directed by the RWQCB, as follows: 1) to clarify that all development projects per the General Permit Attachment 4 will be subject to the BMP requirements; 2) to require more effective treatment BMPs that infiltrate runoff and reduce pollutant discharges for parking lots, rather than oil and sediment traps which are currently required; and 3) to include a process for project applicants to follow in order to identify structural or treatment control BMPs that will effective in removing a development project's pollutants of concern. The process is anticipated to be written guidelines or a matrix that will be included in the BMP brochure.

Lastly, the City will revise the mandatory storm water design standards/BMPs when Hydromodification Control Standards are developed and approved. Please refer to Attachment #15 for a copy of the current BMP brochure. Distribution of the brochure is discussed in the Education and Outreach section below.

BMP #PC-2: Revise Mandatory Storm Water BMPs/ Design Standards Brochure

Development and Implementation of Hydromodification Control Standards

Regional Joint Effort to Develop Hydromodification Control Criteria

On February 15, 2008, the Central Coast Regional Water Quality Control Board (RWQCB) notified MS4s that BMPs must be adopted for the development of hydromodification criteria to protect beneficial uses and promote the desired conditions of healthy watersheds to meet the MEP standard, including:

I. Maximize infiltration of clean storm water, and minimize runoff volume and rate
II. Protect riparian areas, wetlands, and their buffer zones
III. Minimize pollutant loading; and
IV. Provide long-term watershed protection.

On October 20, 2009, the RWQCB notified MS4s in the Central Coast region of the opportunity to participate in a Joint Effort to cooperatively develop hydromodification control criteria with other MS4s. The Joint Effort provides an alternative to the requirements for developing interim and long-term hydromodification criteria independently as outlined in the February 15, 2008 letter from the RWQCB. The Joint Effort is a two phase approach that is expected to span a period of two years. Phase I goals are to:

- Develop a methodology for the development of numeric hydromodification control criteria for new and redevelopment.

- Implement the initial steps of the methodology with the Central Coast Region, which will provide the foundation for watershed characterization and pre-process analysis that will be necessary to develop meaningful and effective hydromodification criteria.

In Phase II of the Joint Effort, the City will apply the methodology to determine its landscape-specific hydromodification control criteria based on compilation of data and information to implement the methodology. This will result in the development of criteria that can be used in site planning, design, and development process.

Participation in the Joint Effort will allow Water Board staff to replace the current requirements for developing interim and long-term hydromodification control criteria with new requirements for municipalities participating in the Joint Effort.

On November 23, 2009, the City chose to participate in the Joint Effort and has amended the Post-Construction MCM to include the BMPs and Measurable Goals required for all Joint Effort participants for Phase I of the Joint Effort. The BMPs will meet the February 2008 criteria except for protecting riparian areas, wetlands, and their buffer zones. A separate BMP, BMP# PC-1, is

included for this requirement. The RWQCB has determined a two year schedule which is broken into eight quarters for completion of the BMPs.

A copy of the RWQCB October 20, 2009 letter, which includes new BMPs, measurable goals and a timetable for the Joint Effort participants, is included in Attachment #28. The new BMPs, measurable goals, and a timetable for the Joint Effort are summarized in Table 1 within the letter and, for the purposes of this chapter, will be referred to as the "Joint Effort BMP Table."

In summary, this regional Joint Effort is planned to be a two-year process in which the methodology to develop municipality-specific hydromodification control criteria will be developed during the first year. During the second year, locale specific hydromodification control criteria will be developed using this methodology. Thus, in the Joint Effort BMP Table, the implementation schedule is delineated according to quarters and there are nine quarters in all (two years plus the first quarter of the following year). For example, "Q2" equals the Second Quarter of the Joint Effort process.

Hydromodification Control Criteria

The City will derive municipality-specific criteria for controlling hydromodification in new and redevelopment projects using Water Board-approved methodology developed through the Joint Effort. According to the Joint Effort BMP Table, the hydromodification control criteria are scheduled to be developed by or in Q8.

BMP #PC-3: Derive Municipality-Specific Criteria for Controlling Hydromodification in New and Redevelopment Projects Using Water Board-Approved Methodology Developed through the Joint Effort.

Applicability Thresholds

The City will select Applicability Thresholds for applying hydromodification control criteria to new and redevelopment projects. Applicability thresholds will be consistent with long-term watershed protection. According to the Joint Effort BMP Table, the Applicability Thresholds are scheduled to be developed by or in Q8. The City will include the applicability thresholds in the mandatory "Best Management Practices (BMPs) for Development and Remodeling Projects," which are included in Attachment 15.

BMP #PC-4: Select Applicability Thresholds for Applying Hydromodification Control Criteria to New and Redevelopment Projects. Applicability Thresholds Will Be Consistent with Long-Term Watershed Protection.

Implementation Strategy for LID and Hydromodification Control

In addition, the City will develop and enact a strategy for implementing LID and hydromodification control for new and redevelopment projects. The strategy will provide appropriate education and outreach for all applicable target audiences, and will include specific guidance for LID BMP design and for complying with hydromodification control criteria. The

strategy will also apply LID principles and features to new and redevelopment projects during the two-year period preceding adoption of hydromodification control criteria.

Guidance

1. Develop, advertise and make available LID BMP Design Guidance suitable for all stakeholders.

2. Specific guidance on how to achieve and demonstrate compliance with the hydromodification control criteria and LID requirements made available to new and redevelopment project applicants.

Education and Outreach

1. Documentation of goals, schedules, and target audiences for education and outreach the municipality will conduct in support of the following strategic objectives: enforceable mechanisms, hydromodification control criteria, applicability thresholds, LID BMP design, and compliance with LID and hydromodification control criteria.

2. Tracking Report indicating municipality's accomplishments in education and outreach supporting implementation of LID and hydromodification control for new and redevelopment projects.

Interim LID Implementation:

The City will conduct interim LID implementation will the following measurable goals:

1. Apply LID principles and features to all applicable new and redevelopment projects.

2. Tracking Report, for the period Q2 to Q8, identifying LID design principles and features incorporated into each applicable new and redevelopment project.

BMP #PC-5: Develop and Enact a Strategy for Implementing LID and Hydromodification Control for New and Redevelopment Projects.

Long-Term Watershed Protection

The City will review and evaluate its General Plan and other documents regarding watershed protection planning efforts. The City's General Plan is a comprehensive document that addresses future growth, including infrastructure and redevelopment in the context of long-term watershed protection. The General Plan will be reviewed to verify that long-term watershed protection and management efforts are being addressed. Based on the results of this review, the General Plan will be revised as appropriate in the next 5 year Permit cycle.

In addition, the City will also evaluate the existing watershed protection planning efforts, such as land use policies, plans, ordinances, and development review procedures. Based on the results of this review, revisions or adaptations will be made as appropriate in the next 5 year Permit cycle.

In conjunction with the review of the Plans and documents mentioned above, the City will also develop, where feasible, quantifiable measures that indicate how the City's watershed protection efforts related to storm water management achieve desired watershed conditions.

Lastly, to allow for the possible future restoration of streams where sections have been placed in underground culverts, the City will encourage the restoration of these sections to a continuous state, over the long term. Developed gaps along such corridors should be acquired and restored, when feasible.

BMP #PC-6: Review and Evaluate the City's General Plan and Other Watershed Protection Planning Efforts (i.e. land use policies, plans, ordinances, development review procedures, etc). In Conjunction, Develop Where Feasible Quantifiable Measures That Indicate How the City's Watershed Protection Efforts Related to Storm Water Management Achieve Desired Watershed Conditions.

Development Permits

In general, when plans are submitted for a development or redevelopment project, the Planning Department first determines if the project is exempt from permit requirements. If it is not exempt, then staff determines if an application for a Development permit, such as a Discretionary or Ministerial permit, must be submitted. Issuance of these permits is the responsibility of the Planning Department.

Discretionary permits cover the pre-construction phases of a project and, in general, are subject to subjective review by the Planning Department and public scrutiny. Discretionary approvals trigger California Environmental Quality Act (CEQA) compliance whereas administrative permits are categorically exempt under CEQA. Zoning permits are a type of Discretionary Permit and are described in more detail below.

Construction permits are ministerial permits that typically permit the activities conducted during the actual construction phase of a project. There are a variety of construction permits including permits for the following: grading, building, plumbing, electrical, and demolition.

<u>Plan Review and Permit Application Process</u>

The plan review and permit process provides the City with the opportunity to review a new development or a redevelopment project during its planning stages, and to direct its design in regards to erosion control and urban runoff issues. Even prior to adoption of the General Permit, it had been City policy to require a developer to minimize the amount of impervious surfaces, maximize infiltration capability, and, if possible, allow for on-site storm water detention. A developer is also required to control pollutants by eliminating or reducing potential new sources, or to install treatment controls as appropriate to the site.

In general, Planning Department staff holds a pre-application meeting with the project applicant for all discretionary projects. Large projects often involve pre-application meetings with both Planning and Public Works staff. At this time, staff informs the applicant of the City's General Plan policies and Municipal Code requirements regarding runoff quantity and quality. The

mandatory BMPs for Development and Redevelopment Projects are discussed in the pre-application meetings with discretionary permit applicants since it is preferable that BMPs and design standards be incorporated into a project's design during the initial planning phases. A copy of the BMP brochure is also given to all discretionary permit applicants subject to compliance with the BMPs.

Once an application is received, the Planning Department routes copies of all discretionary project plans to the appropriate City departments and divisions, such as Public Works and Water, for review and comment. Public Works/Engineering is an integral part of the review process. Among other things, staff reviews each project for its impact on the downstream drainage system. Public Works/Engineering is responsible for reviewing any runoff control or treatment systems included in the design plans. Staff may require, by conditioning a project's permit, that any proposed controls or treatment systems be modified or improved and, if none exist, require that they be added. Public Works/Engineering also evaluates a project for its proposed trash enclosure areas and parking lot design.

The Planning Department also reviews project plans for urban runoff issues. Unless the project is exempt from CEQA, staff uses a CEQA checklist to examine the project's potential to affect urban runoff quantity and quality. A portion of the City's CEQA checklist, pertaining to storm water quality and quantity as well as biological resources, is included in the following pages. Lastly, any Department routed the project plans may place conditions on a project.

Pertinent Sections of the City's CEQA checklist

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
1. BIOLOGICAL RESOURCES. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? (V.1-Map EQ-9)				
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
2. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements?				
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local ground water table level (for example, the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? (V.1, V.2)				
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.				
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.				
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?				
f) Otherwise substantially degrade water quality?				
g) Place housing within a 100-year flood-hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				
h) Place within a 100-year flood-hazard area structures which would impede or redirect flood flows? (V.1-Map S-7)				
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? (V.1-Map S-9)				
j) Inundation by seiche, tsunami, or mudflow? (V.1-Map S-8)				

Zoning Permits

The permit review process generally triggers the conditions that the Planning Department places on a project. Discretionary approvals typically include design review, subdivision or tentative map approval, a use permit, and a conditional use permit. For example, it may also be determined that an Environmental Initial Study must be conducted. At this stage, the City can require that certain conditions to be met such as implementation of erosion control practices. In addition, a zoning report can be required which can also be conditioned with requirements such as implementation of BMPs and site-specific measures.

A zoning permit may be conditioned to require the applicant to obtain additional permits. These permits include, but are not limited to, Administrative Use Permits, Coastal Permits, and Design Permits. Depending on the project, applications for a Zoning Permit may require a public hearing and approval by the Zoning Commission and City Council.

The City modified the zoning permit boilerplate conditions in 2004 by adding a condition that requires the applicant of a construction site equal to or greater than one acre, or less than one acre but part of a larger common plan of development or sale, to provide the City with proof of coverage under the state's Construction Activities Storm Water General Permit. Proof of coverage shall include a copy of the letter of receipt and Waste Discharger Identification (WDID) number issued by the State Water Quality Control Board (SWQCB) that acknowledges the property owner's submittal of a complete Notice of Intent (NOI) package.

Construction (Ministerial/Administrative) Permits

The most common administrative permits are building and grading permits. The Planning Department reviews these types of permit applications and ensures that they conform to the zoning requirements. Grading permits, in particular, are closely reviewed for compliance with the requirements to minimize soil disturbance and protect water quality. In addition, the Public Works Department, who also reviews construction project plans, may place conditions on the permit. Permits conditions can include a requirement that the project applicant submit engineered plans for the installation of BMPs at a development site.

Site Inspections

Site inspections are conducted throughout the phases of a construction project including a final inspection once the work is completed. Inspections are typically conducted by Planning Department Building Inspectors. During site inspections, each project is evaluated for compliance on a "case by case" basis. The Building Inspectors work from an approved plan set when conducting an inspection to ensure that all the requirements for project have been met. The approved plans for a development project include a list of the post-construction controls that were submitted by the applicant or required by the City during the permit process. All projects will be evaluated for the proper installation of any post-construction BMPs.

Depending on the project, Public Works Engineering Inspectors may also inspect a site or a portion of the work such as storm water treatment systems and paved areas. For example, Public Works Engineering staff will inspect the installation of post-construction treatment systems and storm water retention devices at development sites greater than or equal to one acre. In certain

cases, Public Works Environmental Compliance may also inspect work such as a mat wash area installation at a restaurant or a treatment system installation at an industry. For City projects, Water Department staff may also conduct an inspection of the site.

BMP #PC-7: PW Staff Will Inspect Installation of Post-construction Treatment Systems and Storm Water Retention Devices at Development Sites Greater Than or Equal to One Acre

Long-Term BMP Maintenance and Monitoring

One of the main problems with many development controls is the long-term operation and maintenance of post-construction controls. Most post-construction controls require maintenance and will fail if maintenance is inadequate or ceases. Often the project is built by one entity and then occupied or owned by another. Ownership may also change several times and this can result in the long-term maintenance responsibilities not being passed down to future owners or occupants. Also, future owners or occupants may also not wish to take on maintenance responsibilities or costs.

BMP Maintenance Agreements

The City is taking measures to ensure that post-construction BMP devices or systems used or installed at a development site will be adequately maintained in the long-term regardless of the property owner. If a project is subject to the *BMPs for Development and Remodeling Projects* and required to install a BMP, the City is requiring the property owner to agree to the following conditions in a signed and notarized statement, entitled "Maintenance Agreement:"

1. To inspect and maintain the BMP on a schedule, at a minimum of once per year, by **October 1st**, or more as necessary in order to retain the required capacity.
2. For residential properties, if the BMP is located in a common area that will be maintained by a homeowner's association, the homeowner's association shall be responsible for the inspection and maintenance.
3. To provide proof of inspection and maintenance to the City of Santa Cruz, Department of Public Works, Engineering Division, at 809 Center Street, Room 201, Santa Cruz, CA 95060. Proof of inspection and maintenance shall be submitted by **December 1st** annually.
4. To ensure that, if the property is sold, transferred, or leased to another person or entity, the sales, transfer, or lease agreement is conditioned so that the recipient assumes responsibility for Conditions 1-5. The first deed transfer or any lease agreements shall include the details of these requirements and information about the BMP such as the following: a) BMP location; b) how and when to perform the necessary inspections and maintenance; and c) how to send proof of inspection and maintenance to the City. The transfer of this information shall also be required with any subsequent sale of the property.

A copy of the maintenance agreement in its entirety is included in the City's Best Management Practices (BMPs) for Development and Remodeling Projects (please refer to Attachment 15).

In order to ensure that all applicable development projects submit a signed Maintenance Agreement, the City is instituting a policy that return of the signed maintenance agreement is a condition of approval for the project's building permit. The condition of approval will be placed on the project by the Department of Public Works. The Building Permit will not be issued until this signed maintenance agreement is received by the Public Works and the condition removed from the project's permit application (by Public Works).

The City currently tracks the submitted signed maintenance agreements. The City will develop an electronic database or spreadsheet to better assess property owner's BMP maintenance over time.

The City will enforce the annual proof of BMP inspection and maintenance requirement for those sites (once built) that do not submit proof to the City by December 1st annually. The City will mail each non-compliant site a warning letter with a response due date and a notice of potential fines if this date is not met. In addition, the City will implement a spot inspection program to assess and ensure that property owners are annually maintaining their BMPs as required.

For municipal projects, the City conducts maintenance on any installed BMP devices or systems. The City accomplishes this by establishing a maintenance plan and assigning the task to the department or division responsible for the general maintenance of the site.

BMP #PC-8: Implement Program to Ensure Long-term BMP Inspection and Maintenance. Spot Inspections Will Be Conducted.

Corrective Measures and Enforcement Procedures

Corrective Measures and Enforcement Procedures in Accordance with the Storm Water Ordinance

Currently, corrective measures and enforcement procedures for violations will be implemented in accordance with the Storm Water Ordinance. The City has the authority to terminate illicit connections and discharges, and to initiate enforcement actions for violations of the code. Potential enforcement actions include written notices, citations, termination of discharge, and monetary penalties. Enforcement actions and the degree to which enforcement actions are escalated usually depend upon the severity of the violation and the timeline of correction. The potential enforcement actions are detailed in the Storm Water Ordinance, Attachment 2, under "Administrative Remedies (Section 16.19.190)" and "Judicial Remedies-Civil/Criminal (Section 16.19. 200)."

Corrective Measures and Enforcement Procedures in Accordance with Title 4

In addition, the City may use Title 4 of the Municipal Code to implement corrective measures and enforcement procedures for violations of the code. Title 4 provides for the issuance and recordation of Notices of Violation; the authority to inspect; the authority to issue a Notice to Appear and Release Citations, and the power to arrest. Title 4 also details the procedures regarding Judicial Remedies and Administrative Remedies available to the City for violations of the Municipal Code and applicable state codes. In addition, Title 4 details Summary Abatement

and Administrative Abatement procedures for public nuisances and code violations. Lastly, Title 4 provides for the recovery of civil penalties and abatement costs. Please refer to Attachment 5 for a copy of complete Title 4 chapter.

Corrective Measures and Enforcement Procedures in Accordance with the Grading Ordinance
The corrective measures and enforcement procedures authorized by the Grading Ordinance are detailed in the "Corrective Measures and Enforcement Procedures" section of the Construction Site Storm Water Runoff Control Program.

Enforceable Mechanisms Per the Joint Effort to Develop Hydromodification Control Criteria
In addition, since the City is participating in the Joint Effort to develop hydromodification control criteria, additional enforceable mechanisms may need to be developed so that the City may effectively implement hydromodification controls and LID. Enforceable mechanisms may include municipal codes, regulations, standards, and specifications. Per the Joint Effort BMP Table, the measurable goals are as follows:

1. An analysis of all applicable codes, regulations, standards, and/or specifications that identifies modifications and/or additions necessary to effectively implement hydromodification controls and LID.

2. Approved new and/or modified enforceable mechanisms that effectively resolve regulatory conflicts and implement hydromodification controls and LID in new and redevelopment projects.

3. Apply new and/or modified enforceable mechanisms to all applicable new and redevelopment projects.

BMP #PC-9: Implement Corrective Measures and Enforcement Procedures As Needed in Accordance with the City Municipal Code

BMP #PC-10: Develop and/or Modify Enforceable Mechanisms That Will Effectively Implement Hydromodification Controls and LID. Enforceable Mechanisms May Include Municipal Codes, Regulations, Standards, and Specifications.

Education and Outreach

The City will conduct education and outreach to the development community, including developers, engineers, architects and other contractors, so that they will be more informed when planning projects or filing for permits. Materials will also be provided to the general public. The City will also develop an education program to encourage landowner participation in restoring and enhancing riparian and wetland resources as described below. Lastly, City staff will also be educated.

Mandatory BMPs for Development and Remodeling Projects
As previously mentioned, in January 2004 the "BMPs for Development and Remodeling Projects" was published as a brochure for easy distribution to contractors and other permit

applicants. In March 2004, the brochure was revised to reflect staff additions to the mandatory BMPs. The mandatory BMPs were revised again in March 2007 and the BMP brochure republished.

The BMP brochures have been available at the public counters of both the Planning and Public Works Departments since 2004 and are distributed to all discretionary project applicants. Staff periodically checks the stock available at both public counters to ensure that there is a continual supply. In addition, the "BMPs for Development and Remodeling Projects" are posted on the City's website.

BMP # PC-11: Distribute BMP Brochure

LID and Hydromodification Control Outreach and Education

In correlation with the Joint Effort process, the City will conduct outreach and education on LID and hydromodification control. As mentioned in the "Development and Implementation of Hydromodification Control Standards" section above, the City will provide appropriate education and outreach for all applicable target audiences, and will include specific guidance for LID BMP design and for complying with hydromodification control criteria.

Once the Joint Effort process has been completed and hydromodification control standards have been developed for the City, it is anticipated that the new control standards and LID design will be included in the "BMPs for Development and Remodeling Projects" mentioned above although it is possible that an alternative or additional publication will be developed. This will be determined as part of the strategy that the City will develop to implement LID and hydromodification control for new and redevelopment projects (see BMP #PC-5). The City will hold an educational workshop for local contractors, developers, architects, and the general public on the new requirements.

BMP # PC-12: Hold Educational Workshop on LID and Hydromodification Control Requirements

Public Education on the Restoration and Protection of Riparian and Wetland Areas

The City-Wide Creeks and Wetlands Management Plan (*Management Plan),* which is described earlier in this chapter, includes a habitat enhancement and restoration component. One of the major goals of this component is to restore and manage native riparian and wetland habitats so they provide suitable and sustainable habitat for native plant and animal species, and require little maintenance in the long-term. Several other goals for the project involve minimizing maintenance efforts and minimizing opportunities for the establishment of invasive, non-native plant species.

Significant opportunities exist to improve, enhance, and manage riparian and wetland resources within the City's watercourses and wetlands. Improvements to these resources will benefit the overall biodiversity of the City, conserve native plant communities, protect and manage rare species and their habitat, contribute to improved water quality in the watercourses, and

contribute to the aesthetic resources of the City. These opportunities are present throughout the City's watercourses and wetlands; actions will vary depending on the vegetation type and its location in the City. With the exception of actions required as part of a development permit, most restoration and enhancement actions will require the participation of willing landowners.

Landowners should be encouraged to preserve and manage native habitats on their properties. The City is working to establish an incentive program to encourage landowner participation in restoring and enhancing riparian and wetland resources. One option is for the City to collaborate with the Santa Cruz Resource Conservation District (RCD) or other watershed groups to identify potential partnerships for restoration projects. These groups may also be able to assist the City in sponsoring public workshops on restoration planning and techniques.

The *Management Plan* recommends that the City, in conjunction with other agencies or non-profit groups, provide information to landowners and residents on ways to restore and enhance riparian habitats and wetlands. Thus, as detailed in Chapter 4: Public Education, the City will develop education materials such as a brochure or one-day workshops to educate residents on specific actions such as:

- How to remove non-native invasive plant species;
- How to install and maintain native landscaping, including habitat restoration;
- How to control erosion and repair eroded stream banks;
- How to encourage wildlife into your backyard; and
- How to decrease non-point source pollution.

BMP PC #13: Develop and Implement an Education Program Addressing the Restoration and Protection of Riparian and Wetland Areas

Training and Education of City Staff

Training and education of City staff will be an important component of this program. In particular, City Planners, Building Inspectors, and Public Works Engineering staff will be trained on the new requirements and the City's Best Management Practices. Training materials will include information published by the EPA, the State of California, or other sources.

The City has provided training classes for employees on post-construction issues and implementation of BMPs/design standards. In May 2003, the City brought in an outside contractor, courtesy of the Monterey Bay National Marine Sanctuary, to give a 90 minute class to City Planners and Public Works Engineering staff with specific focus on the Post Construction Storm Water Management Program and Design Standards requirements of the General Permit.

The City will provide training to all appropriate Planning and Public Works staff (i.e. plan reviewers and storm water staff) every two years. New staff will be trained within 3 months of the beginning of employment. Additional training on new or changed BMPS will take place as needed. For example, the City anticipates a potential need for additional training in the future on

LID design. Training may include presentations at staff meetings, on-site classes, off-site workshops, and other appropriate methods. The City anticipates that, especially in the first few years of the Permit, staff training will focus on the mandatory BMPs/Design Standards, Low Impact Development, and Hydromodification Controls. Both the Planning and Public Works departments will ensure that the appropriate personnel (e.g. Planners and PW Engineers) are trained and familiar with the BMPs applicable to their activities or areas of responsibility.

BMP # PC-14: Provide Training to Appropriate Planning & Public Works Staff

IV. Program Implementation

City Personnel

The Planning and Public Works Departments will be primarily responsible for implementation of the Post Construction Storm Water Management Program. The primary personnel needed to implement this program include Planning Department Planners and Public Works Department Engineers. The appropriate staff from both departments will be trained to evaluate permit applications and apply permit conditions according to the new construction site regulations and City BMPs. Table 6-1 below itemizes the each BMP and the responsible department/division.

Implementation Timetable and Measurable Goals

The City has established a timetable for implementation of the Post Construction Storm Water Management Program. Measurable goals will be used to assess the City's efforts to reduce urban runoff pollution and to evaluate the success of the BMPs each year. A list of the BMPS, measurable goals, and the implementation schedule are detailed in Table 6-1 below.

In Table 6-1, for BMPs that are part of the regional Joint Effort to develop hydromodification control criteria, the implementation schedule corresponds to the Joint Effort implementation quarters as defined by the RWQCB. The implementation schedule is subject to change by the RWQCB if the Joint Effort process incurs significant delays. Currently, the implementation quarters are assigned as follows:

Joint Effort Year 1: Q1, Q2, Q3, Q4

Joint Effort Year 2: Q5, Q6, Q7, Q8

Joint Effort Year 3: Q9

As of March 2, 2010, per the RWQCB, the Joint Effort schedule and reporting is as follows:

Start Date: The schedule for BMP implementation refers to the eight three month quarters (e.g., Q2, Q4, etc.) of the two-year Joint Effort and the first quarter following (Q9). For purposes of implementing and tracking Joint Effort BMPs, Quarter 1 will begin upon notification from the Central Coast Water Board. Water Board staff will notify City of Santa Cruz by electronic mail of the date that will serve as the start date for Quarter 1.

Reporting Requirements: The City of Santa Cruz will achieve Joint Effort Measurable Goals by the end of Q2, Q4, Q8, and Q9. City of Santa Cruz must report to the Water Board on

completion of Measurable Goals within 30 days of the end of the quarter in which the Measurable Goal is scheduled for completion. Reporting must include evidence of adequate detail and substance for Water Board staff to determine whether the Measurable Goal is complete.

Table 6-1

BMPs, Measurable Goals, and Implementation Schedule

BMP #	BMPs	Measurable Goals	Responsible Dept. or Division	Implementation Schedule*
	Protection of Riparian Areas, Wetlands, and Their Buffer Zones			
PC-1	On City Owned Property, No New City Development Projects Shall Be Permitted Within 30 Feet of a Wetland Without an Approved Project-specific Habitat Management Plan and a Site-specific Water Quality Management Plan.	Formalize and implement strategy	Planning Public Works	Year 1
	Mandatory BMPs/Design Standards for Development and Remodel Projects			
PC-2	Revise Mandatory Storm Water BMPs/	1. Revision to require more effective BMPs to treat parking lot runoff	Public Works	1. Year 2 2. Year 2

BMP #	BMPs	Measurable Goals	Responsible Dept. or Division	Implementation Schedule*
	Design Standards Brochure	2. Revision to clarify that all development projects per General Permit Attachment 4 will be subject to structural or treatment control BMP requirements 3. A process for project applicants to follow to identify structural or treatment control BMPs that will effective in removing a development project's pollutants of concern		3. Year 2
	Development and Implementation Hydromodification Control Standards			
PC-3	Derive Municipality-Specific Criteria for Controlling Hydromodification in New and Redevelopment Projects Using Water Board-Approved Methodology Developed through the Joint Effort	Hydromodification Control Criteria	Public Works Planning	Joint Effort Q8
PC-4	Select Applicability Thresholds for applying Hydromodification Control Criteria to New	Applicability Thresholds	Public Works Planning	Joint Effort Q8

BMP #	BMPs	Measurable Goals	Responsible Dept. or Division	Implementation Schedule*
	and Redevelopment Projects. Applicability Thresholds will be Consistent with Long-Term Watershed Protection.			
BMP #PC-5	Develop and Enact A Strategy for Implementing LID and Hydromodification Control for New and Redevelopment Projects.	Implementation Strategy for LID and Hydromodification Control: *Guidance* 1. Develop, advertise and make available LID BMP Design Guidance suitable for all stakeholders 2. Specific guidance on how to achieve and demonstrate compliance with the hydromodification control criteria and LID requirements made available to new and redevelopment project applicants *Education and Outreach* 1. Documentation of goals, schedules, and target audiences for education and outreach the municipality will conduct in support of the following strategic objectives: enforceable mechanisms, hydromodification control criteria, applicability thresholds, LID BMP design, and compliance with LID and hydromodification control criteria		*Guidance* 1. Joint Effort Q4 2. Joint Effort Q8 *Education and Outreach* 1. Joint Effort Q2 2. Joint Effort Q8

BMP #	BMPs	Measurable Goals	Responsible Dept. or Division	Implementation Schedule*
		2. Tracking Report indicating municipality's accomplishments in education and outreach supporting implementation of LID and hydromodification control for new and redevelopment projects (Q8) *Interim LID Implementation* 1. Apply LID principles and features to all applicable new and redevelopment projects. 2. Tracking Report, for the period Q2 to Q8, identifying LID design principles and features incorporated into each applicable new and redevelopment project.		*Interim LID Implementation* 1. Joint Effort Q2-8 2. Joint Effort Q9
	Long-Term Watershed Protection			
PC-6	Review and Evaluate the City's General Plan and Other Watershed Protection Planning Efforts (i.e. land use policies, plans, ordinances, development review procedures, etc). In Conjunction, Develop Where Feasible	1. Determination if long-term watershed management and protection efforts are addressed and, if not, identification of sections needing revisions. 2. Quantifiable Measures	Public Works Planning	Year 4-5

BMP #	BMPs	Measurable Goals	Responsible Dept. or Division	Implementation Schedule*
	Quantifiable Measures That Indicate How the City's Watershed Protection Efforts Related to Storm Water Management Achieve Desired Watershed Conditions.			
	Site Inspections			
PC-7	PW Staff will Inspect Installation of Post-construction Treatment Systems and Storm Water Retention Devices at Development Sites Greater Than or Equal to One Acre	Inspect100% of development sites greater than or equal to one acre	Public Works Planning	Year 1-5
	Long-Term BMP Maintenance and Monitoring			
PC-8	Implement Program to Ensure Long-term BMP Inspection and Maintenance. Spot Inspections Will Be Conducted	1. Develop an electronic database or spreadsheet to better track & assess sites over time 2. Enforce the proof of annual BMP inspection and maintenance requirement at 100% of sites 3. Implement a spot inspection program at	Public Works: Engineering	1. Year 1 2. Year 1-5 3. Year 2-5

BMP #	BMPs	Measurable Goals	Responsible Dept. or Division	Implementation Schedule*
		10% of sites annually		
	Corrective Measures and Enforcement Procedures			
PC-9	Implement Corrective Measures and Enforcement Procedures As Needed in Accordance with the Municipal Code	Implement corrective actions, as appropriate, for 100% of sites where a violation is detected	Planning: Building Planning: Current Planning	Year 1-5
PC-10	Develop and/or Modify Enforceable Mechanisms That Will Effectively Implement Hydromodification Controls and LID. Enforceable Mechanisms May Include Municipal Codes**,** Regulations, Standards, and Specifications.	1. An analysis of all applicable codes, regulations, standards, and/or specifications that identifies modifications and/or additions necessary to effectively implement hydromodification controls and LID 2. Approved new and/or modified enforceable mechanisms that effectively resolve regulatory conflicts and implement hydromodification controls and LID in new and redevelopment projects 3. Apply new and/or modified enforceable mechanisms to all applicable new and redevelopment projects.		1. Joint Effort Q2 2. Joint Effort Q8 3. Joint Effort Q9

BMP #	BMPs	Measurable Goals	Responsible Dept. or Division	Implementation Schedule*
	Education and Outreach			
PC-11	Distribute BMP Brochure for Development and Remodeling Projects	Distribute to 100% of discretionary project applicants	Planning Public Works: Engineering	Year 1-5
PC-12	Hold Educational Workshop on LID and Hydromodification Control Requirements	One educational workshop after the hydromodification control criteria have been developed	Public Works: Engineering Planning	Approx. Joint Effort Q8
PC-13	Develop and Implement an Education Program Addressing the Restoration and Protection of Riparian and Wetland Areas	1. Complete development of program plan 2. Implementation of educational measures, i.e. hold workshops, distribute brochures	Planning Public Works: Engineering	Year 4 Year 5
	Training & Education of City Staff			
PC-14	Provide Training to Appropriate Planning & Public Works Staff	1. Train 100% of appropriate staff every two years. 2. Train new Inspectors and Plan Reviewers within 3 months of the beginning of employment. 3. Additional training on new or changed BMPS as needed	Planning Public Works: Engineering	Year 1-5

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Table 6-1: Responsible Department or Division Contact Information

Public Works Department: Engineering
Associate Civil Engineer, (831) 420-5428

Planning Department: Building
Chief Building Official, (831) 420-5127

Planning Department: Current Planning
Principal Planner, (831) 420-5100

V. Program Documentation and Reporting

The City will maintain records to document program implementation and annual progress. The City will report the results of the program in the annual SWMP report to the Regional Water Quality Control Board. The report will include information and a summary of the progress made relative to the measurable goals.