



Agenda Item # _____

Staff Report

City of Manhattan Beach

TO: Honorable Mayor Tell and Members of the City Council

THROUGH: Geoff Dolan, City Manager

FROM: Neil Miller, Director of Public Works
Richard Thompson, Director of Community Development
Lindy Coe-Juell, Assistant to the City Manager

DATE: January 16, 2007

SUBJECT: Presentation of Information Regarding the Council Work Plan Item to Minimize Stormwater Run-Off

RECOMMENDATION:

Staff recommends that City Council discuss and provide direction.

FISCAL IMPLICATION:

Implementing a new development requirement to minimize runoff would demand additional resources from the City to successfully communicate the new program to the development community, to review and approve structural designs and to track maintenance agreements. Staff will await City Council direction before conducting a thorough analysis of expected costs of program implementation. However, based on preliminary research, we do not think that the amount of work required for this program can be absorbed at current staff levels.

BACKGROUND:

One of the items on the City Council's 2005-2007 Work Plan is to consider implementing new development requirements such as on-site retention techniques and requiring permeable surfaces in order to reduce stormwater runoff and to help prevent flooding. This report 1) provides regulatory background information, 2) presents current City stormwater related development requirements, and 3) discusses a possible course of action that the City could take to minimize the amount of stormwater runoff in our jurisdiction.

Regulatory Background

The current stormwater development regulations and other stormwater programs implemented by the City are an outgrowth of 1987 amendments to the federal Clean Water Act. These amendments require regulation of discharge from municipal stormwater systems. They were passed because the US Environmental Protection Agency recognized that development and urbanization increases

pollutant loads as permeable surface is converted to paved surfaces that cannot absorb or purify rainwater and increased population density brings higher levels of anthropogenic pollutants such as pesticides, vehicle maintenance waste and trash. Although storm drains were originally constructed for the purpose of channeling rainwater to the ocean, they have also become channels for carrying urban pollution to the ocean. Storm drains channel rain during storm events and other flows known as “urban runoff” from activities such as sidewalk rinsing, car washing and landscape irrigation.

Per the requirements of the Clean Water Act, the Los Angeles Regional Water Quality Control Board (Regional Board) issues a municipal 5-year National Pollutant Discharge Elimination System (NPDES) permit to Los Angeles County and municipalities within the County which lays out pollution prevention programs that must be implemented. The first 5-year NPDES permit for the Los Angeles Region was issued in 1991. We are currently under the 2001 NPDES permit, which expired in December 2006. The Regional Board will likely not issue a renewed permit until the summer or fall of 2007. Until that time, we will continue to implement the programs required under the 2001 NPDES permit.

The 2001 NPDES programs fall under 6 main categories: 1) Public Education and Outreach, 2) Commercial Inspections, 3) Development Planning, 4) Construction Requirements, 5) Public Agency Good House Keeping Practices, and 6) Illicit Discharge Elimination Programs. The City of Manhattan Beach implements a suite of NPDES programs under each of the 6 categories. The Development Planning Program requires that the City ensure that certain categories of development install devices or construct permeable surfaces that will treat, filter or infiltrate stormwater runoff at the site after the development project is completed.¹ The possibility of enhancing this program, in order to minimize the volume of stormwater and urban runoff is the focus of this report.

Current Development Requirements

The City of Manhattan Beach follows the requirements of the NPDES permit as it relates to regulating certain categories of development for stormwater runoff. The Building Division and the Public Works Department review all design plans as they are submitted to the City and one element of the review is to determine whether the project meets any of the NPDES threshold criteria. If the criteria apply, the developer must submit a Standard Urban Storm Water Mitigation Plan (SUSMP), which shows what treatment control devices or permeable surfaces (collectively referred to as SUSMP best management practices or BMPs) will be constructed and installed to treat, filter, or infiltrate runoff.²

¹ There is a distinct difference between the NPDES program categories of “Development Planning” and “Construction Activity Requirements” that is not immediately apparent in the category names. “Construction Activity Requirements” consist of best management practices that should be followed during construction to prevent runoff from the construction site. An example Construction Activity best management practice is stacking sand bags around the site to prevent sediment laden water from escaping the site. Whereas the Development Planning program requires certain categories of development to include stormwater mitigation devices or pervious surfaces as a part of the design plans that will treat, filter or infiltrate runoff from the site after construction has been completed.

² The NPDES permit requires that the SUSMP BMP(s) selected by the developer will incorporate either a volumetric or flow based treatment to mitigate (infiltrate, filter or treat) defined amounts of runoff volume or flow. These NPDES defined volume

The following criteria make a development projects subject to SUSMP:

- Single family hillside (grading on natural slope of 25% or greater) developments
- Projects consisting of ten or more unit homes
- Commercial projects that will create 100,000 or more square feet of impervious surface area
- Automotive service facilities
- Retail gasoline outlets
- Parking lots of 5,000 square feet or more surface area or with 25 or more parking spaces
- Redevelopment - defined as projects with land-disturbing activity that results in the creation, addition, or replacement of 5,000 square feet or more of impervious surface area
- Commercial projects that disturb one acre or more of surface area

Under the 2001 NPDES permit, the City is responsible for ensuring that these projects include BMP(s) in the project design and that the developers sign a maintenance agreement that will transfer maintenance responsibility to future property owners.³ Currently, the City is not responsible for approving the developer selected BMPs or for checking design calculations. However, based on communication from the Regional Board, the permittee community expects that several elements of the current NPDES permit will become more tightly regulated under the 2007 permit. Specifically related to the Development Planning program, the next permit will likely put more responsibility on Cities for approving the BMP(s) the developers select, reviewing the developers' SUSMP calculations and conducting regular on-site BMP maintenance inspections.

To date, 7 development projects in Manhattan Beach have required SUSMP BMPs. Attachment A shows the location and type of the 7 SUSMP commercial development BMPs and the title of the facility or project. Most development projects in our City do not meet the NPDES criteria for requiring SUSMP. For example, most commercial projects in our City are smaller than one acre. And to date, no residential project has triggered the SUSMP requirement. Attachment A also shows additional BMPs that have been installed by the City and County of Los Angeles.

DISCUSSION:

As discussed above, the majority of development projects in Manhattan Beach do not meet the

and flow amounts are referred to as the numerical design criteria. Volumetric Treatment Control BMPs must mitigate the following NPDES permit numerically defined volumes of stormwater runoff: 1) the 85th percentile 24-hour runoff event, or 2) The volume of annual runoff based on unit basin storage water quality volume to achieve 80 percent of more volume treatment, or 3) the volume of runoff produced from a 0.75 inch storm event, or 4) the volume of runoff produced from a historical-record based reference 24-hour rainfall (0.75 inch average for the Los Angeles County area). Flow Based Treatment Control BMPs must mitigate the following NPDES permit numerically defined flow amounts of stormwater runoff: 1) the flow of runoff produced from a rain event equal to at least 0.2 inches per hour intensity, or 2) the flow of runoff produced from a rain event equal to at least two times the 85th percentile hourly rainfall intensity for Los Angeles County, or 3) the flow of runoff produced from a rain event that will result in treatment of the same portion of runoff as treated using volumetric standard above.

³ The City of Manhattan Beach has a SUSMP maintenance agreement form that covers the NPDES requirements. Each SUSMP developer must notarize and record the maintenance agreement form with the County Recorder so that the maintenance requirements transfer with any future sale of the property. Our SUSMP maintenance agreement form also requires the property owner to submit proof of the annual maintenance inspection to the City, which we track and file.

criteria that trigger SUSMP. However, both private and public development projects can contribute to the reduction of permeable area in the City if the footprint of the structure increases or if more paved surfaces are added. For example, most new houses and substantial residential remodel projects result in bigger houses, more paved areas and a reduction in landscaped surfaces. Attachment B shows two neighboring properties on the same size lot. The house on the left was remodeled in 2004 and has 3578 square feet of living space. The house on the right was built in 1947 and has 1043 feet of living space. This comparison shows the increased footprint of a house post-construction, which was accompanied by a loss in permeable space.

In order to minimize stormwater and urban runoff, City Council could take action to require that private (residential and commercial) and public development projects incorporate BMPs that will ensure that the volume of runoff from the property *will not increase* post-construction. The goal of this requirement would be to contribute to the reduction of polluted storm drain flow to the ocean and to help to prevent local flooding. BMPs that could be incorporated into development projects include, but are not limited, to the following (Attachment C pictures some of these BMPs):

- Permeable pavement for driveways and sidewalks
- Pavers for driveways and sidewalks rather than solid concrete areas
- Downspouts that direct runoff to permeable areas
- “Green roofs”
- Infiltration trench/basin
- Plant selection to maximize infiltration
- Vegetated swales/buffer strips
- Biofilter cells
- Cisterns

Requiring BMPs of all development would go beyond the current NPDES permit regulations. However, similar actions have been taken by several Cities in our area. For example, the City of Santa Monica requires that all private and public new development projects *reduce* the amount of runoff from the property. The City of Redondo Beach requires that all private and public development in their coastal zone implement SUSMP BMPs regardless of the size of the project.

Implementing a new development requirement to minimize runoff would demand additional resources from the City to successfully communicate the new program to the development community and the public, to review and approve the BMP designs submitted, to track maintenance agreements and to conduct field inspections to ensure that property owners are correctly maintaining the BMPs that were installed. Staff will await City Council direction before conducting a thorough analysis of expected costs of program implementation. However, based on discussions with colleagues in Santa Monica and Redondo Beach, we don’t think that the amount of work required for this program could be absorbed at current staff levels.

ALTERNATIVES:

- A. Direct staff to draft an ordinance with the objective of minimizing stormwater and urban runoff from properties post-construction, and develop an estimate of the resources and costs required to implement the proposed program.

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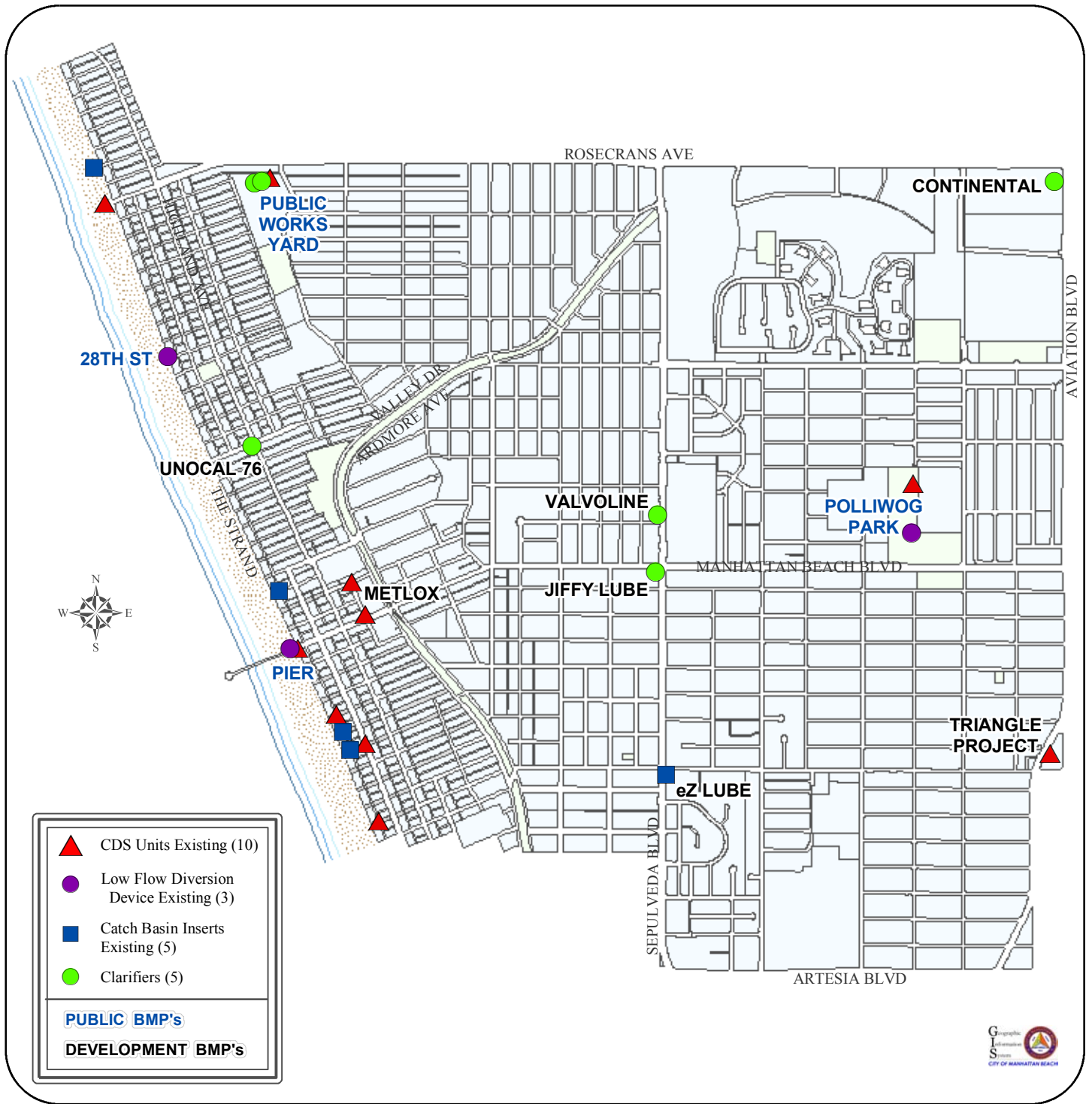
B. Direct staff to bring this item back for discussion once the 2007 NPDES permit has been issued.

C. Provide other direction.

Attachments: A. Development and Public Stormwater BMPs
B. Aerial Photo Comparing Residential Home Permeable Area
C. Example BMPs

City of Manhattan Beach

Storm Water Best Management Practices



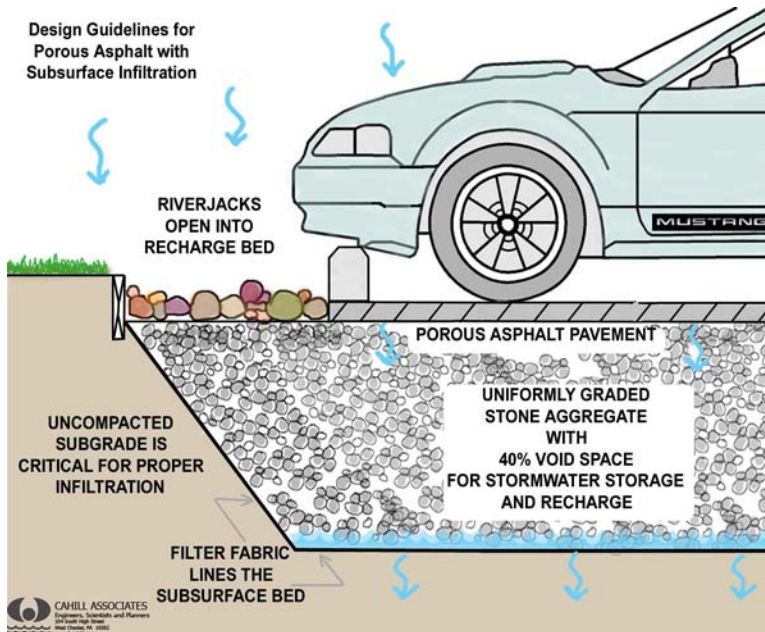
Attachment B



Attachment C

Examples of Stormwater Development Best Management Practices

Pervious Pavement



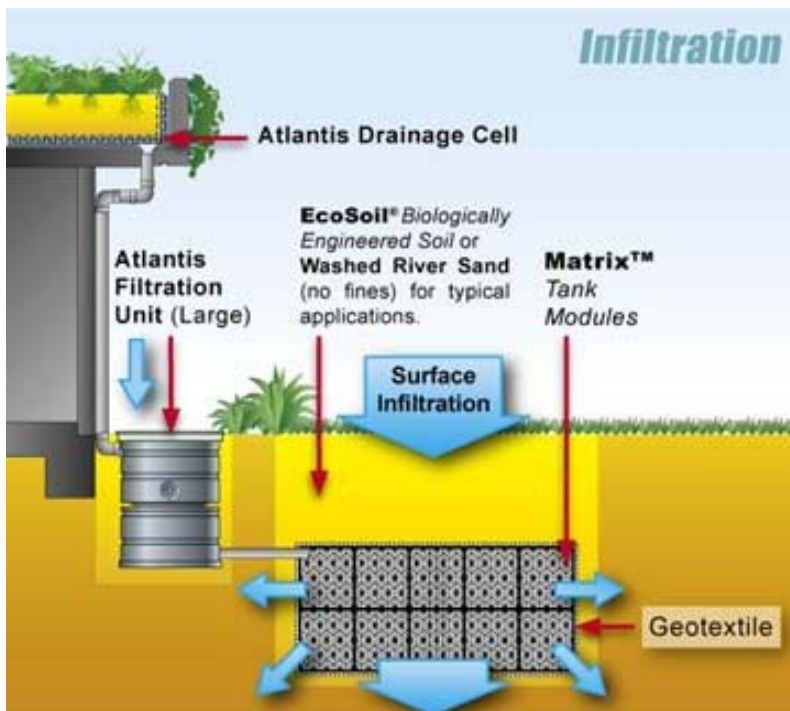
Biofilter (gravel) for Driveway and Roof Runoff



Driveway Pavers



Infiltration Device



Green Roof

