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THE CITY OF SAN DIEGO

November 2, 2004

HAND DELIVERY

Mr. John Robertus, Executive Director
San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA 92123

Dear Mr. Robertus:

Subject: Technical Report: Addressing Floating Material in Paleta and Chollas Creeks

The City of San Diego is submitting the attached supplemental document entitled Paleta and Chollas Creek Refuse Assessment Program Dry Weather Monitoring Season 2004. This document is additional information for the Regional Board updating the Paleta Creek and Chollas Creek September 2004 semi-annual report, Creek Refuse Assessment Program component. We stated in the September 2004 report that this information would be submitted the beginning of November 2004.

If you have any questions or require more information, please don't hesitate to contact Storm Water Specialist Ruth Kolb at (619) 525-8636.

Sincerely,


Karen Henry
Deputy Director

KHrk

Enclosure: Paleta and Chollas Creek Refuse Assessment Program Dry Weather Monitoring Season 2004

cc: File



Storm Water Pollution Prevention Program

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Paleta and Chollas Creeks Refuse Assessment Program Dry Weather Monitoring Season 2004

Introduction

The City of San Diego Storm Water Pollution Prevention Program added and implemented a Creek Refuse Assessment Program component to the Dry Weather Monitoring Program in the Chollas and Paleta Creeks watershed areas, commencing in 2003. Currently, under the Dry Weather Monitoring Program, trash monitoring procedures only require identifying the presence or absence of trash at storm drain "discharge areas" or the general vicinity around a monitoring site. These sites are located at storm drain outlets, open channels, or manholes within the storm water conveyance system. A drain "discharge area" has been defined as approximately 10-20 yards (30-60 feet) upstream and downstream of the storm drain outlet, with consideration given to the actual area impacted by flow. Trash monitoring within open conveyance channels and manholes/catch basins used similar criteria; staff noted the presence/absence of trash conditions within a 20 yard diameter circle in channels and in the visible areas within manholes/catch basins.

Scope

Dry Weather Monitoring procedures do not collect appropriate information to characterize and quantify trash. For the Creek Refuse Assessment Program, the trash monitoring methods provide quantifiable trash data that can be used as a baseline and to evaluate the effectiveness of Best Management Practices (BMP's). For this assessment, trash quantification and characterization was performed by determining and calculating the survey area, depth of trash, and estimated percentage of ground covered by trash/floatables within the survey area. The survey area was determined as described below:

- Manholes/Catchbasins: estimated visible bottom area
- Channels: an estimate of twenty yards downstream of the monitoring point times the estimated width of the channel
- Storm Drain Outlets: an estimated twenty yards downstream times the estimated width of the channel. For flat bottomed channels, the estimated width was determined by the high water mark and for more incised channels the width was estimated between the vertical banks.

Paleta and Chollas Creeks Refuse Assessment Program

Dry Weather Monitoring Season 2004

A total of 38 dry weather monitoring sites in Chollas and Paleta Creeks were visited and photographed. Two new sites in Paleta Creek watershed were added to 2004. Trash characterizations and quantifications were noted on a refuse assessment field form. In addition to collecting quantitative data, staff classified trash and its relative percent makeup at each site as described in Table 1.

Table 1. A description of the types of trash in each classification.

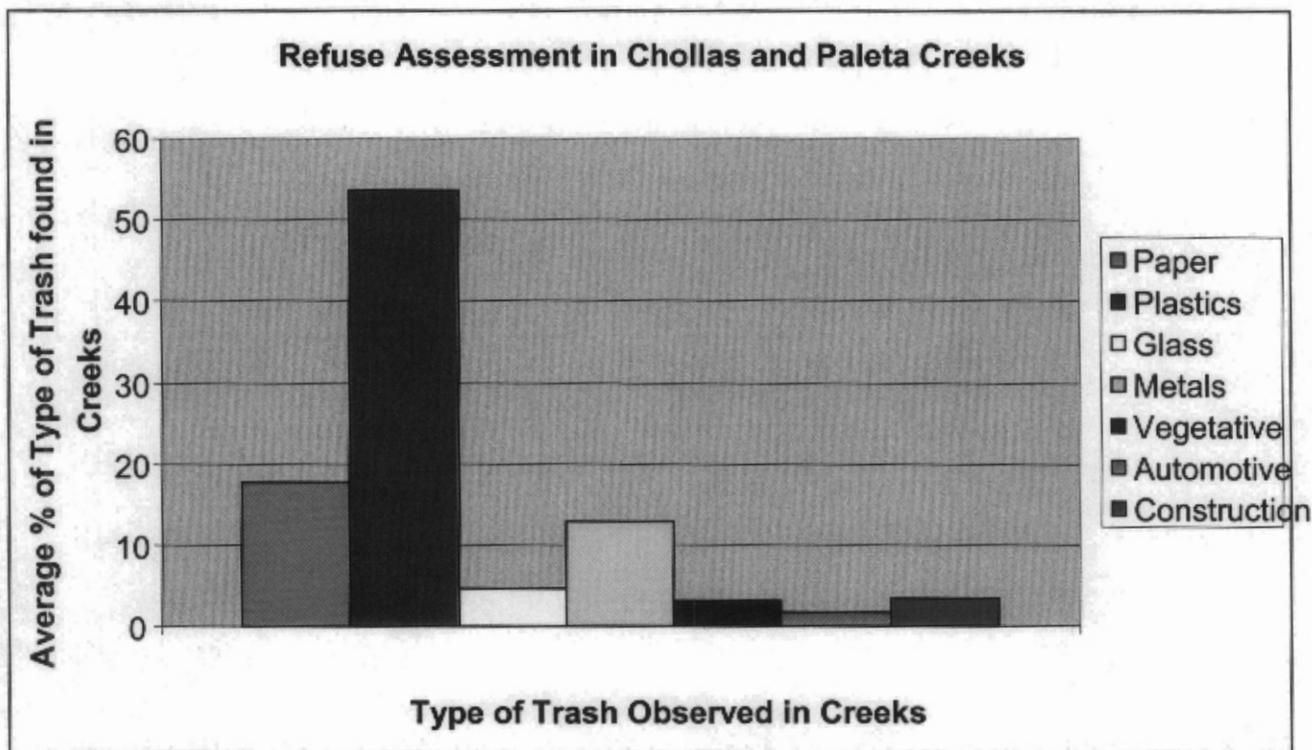
Paper	Writing paper, newspaper, cup, cigarette butts, etc
Plastic	Soft drink/juice bottles, Styrofoam, juice box, snack food wrappers, etc
Glass	Drink/food container, etc
Metals	Soda cans, soup cans, steel containers, etc
Vegetative	Landscaping debris, grass clippings, etc
Automotive	Vehicle parts and fluids, batteries, etc
Construction	Concrete debris, rebar, paint, solvents, gravel, dirt, lumber, roofing, etc

Findings

Analysis of data and photographs showed that trash was not necessarily visible from a typical vantage point such as a sidewalk or dirt path, though trash was found at every site upon closer inspection. As shown in Figure 1, trash primarily consisted of paper and plastics. When analyzed in combination with observations, the data showed that most paper and plastics consisted of recyclable drink containers, paper or Styrofoam cups, and snack packaging. The least common types of trash were vegetative waste, automotive parts, and construction debris. The total quantity of trash found at the 38 sites approached 20.0 cubic feet. The geometric mean sample area was 31 square yards and the geometric mean trash volume was 0.07 cubic yards of trash. Based upon the types of trash and disposal characteristics observed, commercial and illegal dumping contributed minimally to trash documented at the monitoring sites. The majority of trash appeared to be typical household items, including drink and snack packaging. In some instances, trash clearly originated from homeless encampments near the assessment site.

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Figure 1. Average percentages of types of trash found at assessment sites. The percentages do not add up to 100; this chart should be used to compare types of trash on a relative scale.



Comparison of results

Creek Refuse Assessment monitoring during 2003 surveyed trash over a total area of 3784 square yards. In 2004 a total of 2767 square yards were surveyed for trash, a 27 percent decrease in drainage area surveyed. Total area surveyed can be expected to vary year-to-year based on a number of factors, including changes in drainage patterns due to different flows in the conveyance system, and differences in how the observer defines the drainage area. In order to maintain consistency, drainage areas are defined in the Introduction of this report.

In 2003, a total of 19.13 cubic yards of trash was observed in the survey area. In 2004, a total of 19.90 cubic yards of trash was observed. The amount of trash observed was four percent greater in 2004 than in 2003. The overall survey area was smaller in 2004 than in 2003. In 2003 there were 0.005 cubic yards of trash per square yard of area surveyed, and in 2004 there were 0.007 cubic yards of trash per square yard of area surveyed. This is a 40 percent increase of trash per square yard.

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When evaluating the amount of trash in the creeks, multiple routes of entry were observed. A breakdown of trash origin is shown in Table 2. Observed routes of entry are subject to change from year-to-year depending on factors such as public behavior/trash disposal habits, BMP effectiveness, rainfall events, and what the observer determines the route of entry to be. When determining the route of entry, observers consider a number of factors. Factors that are considered when determining routes of entry: evidence of trash on slopes, bags that may have been tossed, or if the trash is under a bridge or some other place that would make it easy for someone to illegally dump there. Homeless encampments in or alongside creeks also contribute to dumped trash. When determining if trash is solely from the storm drain outlet, observers may look inside the drain to compare types of trash, or at the drain discharge pattern. Comparisons of trash just upstream of outlets to what is seen at the storm drain are also helpful in determining if the outlet is the main source of the trash, or if the majority of the trash near an outlet is originating from other sources. In tidally influenced areas trash from all sources may be redistributed in the creek making trash entry route determinations difficult.

Table 2: Trash routes of entry into Chollas and Paleta Creeks in 2003 and 2004.

Route of Entry	% of Trash Originating from Route of Entry	
	2003	2004
Upstream Source Only	0	<1
Dumping Only	0	1
Dumping/ Storm Drain/Upstream Combination	12	4 ✓
Dumping/Upstream Source Combination	0	5
Storm Drain Only	65	12 ✓
Storm Drain/Upstream Combination	4	29 ✓
Dumping/Storm Drain	19	49 ✓

94% = SD associated

Future Considerations

Differences in the total area surveyed from one year to the next make data analysis difficult. The current field sheet, while it does ask for routes of entry, does not break down quantity of trash by route. This makes data analysis difficult and may yield an unclear conclusion of trash sources. Based on the current manner of source classification only four categories can be positively evaluated: Upstream only, Storm Drain only, Dumping only, or a combination of any of the above. In order to maintain consistency and better evaluate the effect of BMP's, an effort needs to be made to quantify the area of observation for each site, break down percentages of trash by route of entry, and break down percentages of trash type by route of entry.