

**Review and Analysis of Budget Data  
Submitted by the Permittees  
for  
Fiscal Years 2000 – 2003**

**Los Angeles County Municipal Storm Water Permit**

**A Report to the  
California Regional Water Quality Control Board  
Los Angeles Region**

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## EXECUTIVE SUMMARY

There has been considerable controversy over the costs associated with compliance of the 2001 Los Angeles County Municipal Storm Water Permit (LA County MS4 Permit). This report is intended to provide the Regional Board with an analysis, performed by Regional Board staff, of the cost of compliance submitted to the Regional Board as part of Annual Report submissions by the municipal storm water permittees. Additionally, this report provides some additional information on expected costs of compliance over the life of the current permit, i.e., five years from date of adoption.

The review comes to several key conclusions. These are:

1. A substantial portion of the reported cost of compliance can be attributed to longstanding programs, e.g., street sweeping, that have been conducted by cities for many years preceding the adoption of the earliest storm water permit in 1990. The pre-existing costs are, by far, the largest component of cost for most permittees.
2. Regional Board staff cost assessments appear to validate U.S. EPA estimates for permit compliance.
3. Reported costs of compliance for the same program element vary widely from city to city and by a very great margin that cannot be explained. Attempts made by staff to validate what appear to be grossly inflated numbers were unsuccessful. Selected audits of these permittees are recommended to obtain numbers that reflect actual expenditures. If, as a result of an audit, reported numbers are found to be wholly without foundation, enforcement action may be appropriate.
4. Reports of costs of compliance not tied to specific permit requirements are being widely reported. The reports are based on assumptions that are invalid and which do not comport with the provisions of the storm water permit which is Best Management Practices (BMP)-based and which does not contain numerical effluent limits. Costs for the implementation of the least expensive BMPs that will meet water quality requirements are not well developed, if at all.

Neither the Governmental Accounting Standards Board (GASB) nor the Federal Accounting Standards Advisory Board (FASAB) has established Generally Accepted Accounting Principles (GAAP) guidelines for reporting storm water budgets.<sup>1</sup> Thus, the development of a standard protocol for program budget reporting in partnership with municipalities appears to be necessary to ensure that cost figures, reported to the LA Regional Board, are provided in a consistent and comparable format.

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<sup>1</sup> The two accounting rule-making authorities for government bodies in the U.S. are the GASB for local and State government, and the FASAB for the Federal government.

## 1.0 INTRODUCTION

The LA County MS4 Permit covers the County of Los Angeles and 84 cities within LA County except for the City of Long Beach. The Los Angeles Regional Water Quality Control Board reissued the LA County MS4 Permit on December 13, 2001.

The Regional Board (RB) staff considered costs in crafting the 2001 LA County MS4 Permit and the requirements therein.<sup>2</sup> While cost is a factor, the Regional Water Board is not required to perform a detailed cost-benefit analysis. In performing the cost analysis, the RB staff relied on a number of documents: (1) *Report to Congress on the Phase II Storm Water Regulations*, EPA 833-R-99-001 (1999); (2) *NPDES Report to Congress on the Phase II Storm Water Regulations; 64 Fed. Reg. 68791-68796*; (3) *Workbook: Designing and Implementing an Effective Storm Water Management Program - Storm Water NPDES Phase II Regulations* – American Public Works Association, Kansas City, MO (2000); (4) a cost estimate document<sup>3</sup> submitted by the City of Los Angeles as part as its formal comment on the first draft of the LA County MS4 Permit; and, (5) other documents listed in the Administrative Record.

The U.S. EPA performed a full cost/benefit analysis before promulgating Phase II regulations. In its cost/benefit analysis, the federal agency reviewed costs data from Phase I municipalities implementing similar programs as required by the LA County MS4 permit, in order to determine the budget burden for implementation on Phase II municipalities. Costs estimates from Phase I municipalities were considered valuable since many of the cities were implementing the first or second generation permits for some time and had the opportunity to fine tune their cost expenditures for program implementation. It is important to mention that the same survey of cost implementation performed by the U.S. EPA included a Southern California MS4 program (Orange County and Cities), where three-fourths of the co-permittees have populations less than 100,000 people. It is also significant to mention that the fiscal analysis required in the Orange County MS4 Program requires that budgets be accounted for as pre-existing costs for activities performed prior to the promulgation of the storm water regulations, and new costs thereafter.

## 2.0 METHOD

RB staff used several methods to estimate the cost per household for implementation of the LA County MS4 Storm Water Permit.

These are:

- A. Extrapolation from U.S. EPA estimates for implementation of Phase II: National average per household estimates were adjusted for inflation and then an increment of 25 percent added to account for the cost of new programs under the 2001 permit.

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<sup>2</sup> See Response of the LA Regional Board to the LA County MS4 Petition for Stay (2002) at: [http://www.swrcb.ca.gov/~rwqcb4/html/programs/stormwater/la\\_ms4\\_final/petition\\_for\\_stay/02\\_0402\\_LARWQCB\\_LA\\_MS4\\_Response.pdf](http://www.swrcb.ca.gov/~rwqcb4/html/programs/stormwater/la_ms4_final/petition_for_stay/02_0402_LARWQCB_LA_MS4_Response.pdf)  
<sup>3</sup> Storm Water Pollution Abatement Charge - Budget Estimate for 2001-2002, 2002-2003 and Actual Budget Estimate for 2000-2001 (dated June 18, 2001)

B. Computation from budget estimates submitted by permittees: The budget-cost estimates submitted by permittees were divided by the number of households in the municipality based on the 2000 U.S. Census. The cost estimate divided by the number of households provided the estimated per household cost of implementation for each permittee. A second computation was performed dividing the countywide cost estimate by the number of households countywide to derive the mean estimated per household cost for LA County.

C. Extrapolation from City of LA Budget: The City of LA provided a budget based on a dedicated special fund, which was considered reliable because its sole purpose was to pay for the storm water program. Pre-existing program costs such as trash collection and street sweeping were excluded from this budget. RB staff then compared budget breakdown for implementation of the 1996 permit and the 2001 permit provided by the City of LA. The increase in cost for each program element was then taken to be the cost increment associated with the implementation of the 2001 permit for that program.

### **3.0 RESULTS AND ANALYSIS**

#### **3.1 Implementation Cost Estimates**

The U.S. EPA, in its survey, determined that costs for Phase I municipalities averaged \$9.08 (1998 dollars) per household per year to implement the requirements of the MS4 permits, with a median value of \$2.86. U.S. EPA's cost benefit analysis identified a range of annual costs from \$0.62 to \$60.43 per household for the communities it surveyed.

The estimated average cost of implementation for the specific requirements of the 2001 permit lies somewhere between the U.S. EPA's estimated national cost for Phase 1, at \$9.64 (adjusted for inflation), and the extrapolated figure of \$17.21 per household per year from the City of LA budget data. If one were to use the budget data reported by permittees on face value, the mean household cost of compliance is between \$50 and \$63 per year<sup>4</sup>, and the median cost of compliance is about \$28.

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<sup>4</sup> The difference arises based on the way the countywide per household cost is computed. Whether it is averaged based on the countywide total budget or it is averaged after summing each municipalities per household cost.

Table 1. Household cost for implementation of the LA County MS4 Permit using a selection of methods.

	Costs per Household
Computation with U.S. EPA Assumption <sup>5</sup>	\$9.64
Assuming 25% Incremental cost <sup>6</sup>	\$12.00
Computation with Orange County's Estimate <sup>6</sup>	\$12.50
Extrapolation from City of LA Data <sup>7</sup>	\$17.21
Reported Mean for LA County MS4 permittees <sup>7</sup>	\$50.00 - \$ 63.00
Reported Median for LA County MS4 permittees <sup>7</sup>	\$28.00
CALTRANS Study <sup>8</sup>	\$1509.00

A cursory review of the Orange County MS4 Permit Annual Report<sup>9</sup> budget section reveals that the amount attributable to implement the Drainage Area Management Plan (DAMP similar to Storm Water Quality Management Plan [SQMP] in the LA County MS4 Permit) is 20% of the total budget. The rest, 80% is attributable to pre-existing programs costs. Thus if we assume that cost per household is \$50 and that one fifth of the sum is new cost because of the storm water program, then \$10 per household is a reasonable cost estimate per household for implementation of storm water requirements. Assuming that the 2001 permit imposed a 25% incremental cost in new programs, the average cost per household cost becomes \$12.50, which is very close to U.S. EPA's figure of \$12.

### 3.2 Wide Ranging Inconsistencies

In the storm water budgets reported by LA County MS4 permittees, there was no consistency in program costs when one considers average costs, similar counts of population and similar land use. Very dissimilar costs per household with orders of magnitude differences for similar population counts were noted. Average cost per household varies from \$1 to 515.<sup>10</sup> The median value is \$28. The City of Los Angeles estimated expenditure per household at \$18, which is about twice the value reported (\$9.08 in 1998 dollars) by U.S. EPA for Phase I cities in its cost/benefit analysis for Phase II. Overall county average cost per household is \$50 to \$63 depending on the method of calculation.<sup>11</sup> This figure is five times the average household cost estimated in U.S. EPA's cost survey.

<sup>5</sup> 1998 dollars adjusted for inflation at 2% annually.

<sup>6</sup> Segregating pre-existing program expenditures and new costs to implement the storm water program.

<sup>7</sup> Not segregating between pre-existing program expenditures and new costs to implement the storm water program.

<sup>8</sup> Annualized cost.

<sup>9</sup> [http://www.ocwatersheds.com/StormWater/swp\\_documents\\_annual.asp](http://www.ocwatersheds.com/StormWater/swp_documents_annual.asp) (accessed August 2002)

<sup>10</sup> As explained before, Vernon and City of Industry where not considered in the analysis due to their very low resident population.

<sup>11</sup> *Supra* footnote 4.

For example, the City of Glendale reported costs eleven times more, on average cost per household, than the City of Los Angeles<sup>12</sup> to implement the same permit requirements. Another example is the City of Rolling Hills when compared to the City of Hidden Hills: they have similar population and land uses, but Hidden Hills seems to spend one and a half times more than Rolling Hills does. A few additional examples follow.

Table 2. Cost per Household estimates for selected cities with similar characteristics.

<b>City</b>	<b>Reported Cost per Household</b>	<b>Population</b>	<b>Households</b>
Rolling Hills	\$66	1,871	624
Hidden Hills	\$109	1,875	625
San Marino	\$22	12,945	4,315
Palos Verdes Estates	\$300	13,340	4,447
Artesia	\$5	16,380	5,460
Santa Fe Springs	\$136	17,438	5,813
Culver City	\$434	38,816	12,939
West Hollywood	\$144	38,900	12,967
San Gabriel	\$46	39,804	13,268

Some times differences among cities may be appropriate if they can be explained. Such examples are the City of Vernon and the City of Industry. These cities are unique because they are heavily industrialized with low resident populations. The annual per household cost in these cities would appear very high as a result. But in most cases the reason for differences in per household costs among cities are difficult to discern.

### **3.3 Incremental Cost of Permit Compliance**

The 2001 permit contains a number of specific provisions that are new and will require an additional expenditure to achieve compliance. These specific provisions are identified below and an estimate of compliance cost increase is provided for each program area:

- Public Information and Involvement (Pollutant specific outreach)
- Industrial/ Commercial Inspection
- Illicit connection/ discharge elimination (Proactive identification and MS4 system mapping)

<sup>12</sup> City of Los Angeles has a dedicated special fund called the storm water pollution abatement charge.

- Development Planning (Standard Urban Stormwater Mitigation Plans for ministerial and discretionary projects)
- Development Construction (Local Storm Water Pollution Plans for projects 1 acre or larger)
- Public Agency (Catch-basin cleaning and trash receptacles at transit shelters)
- Monitoring (Expanded monitoring)

Table 3. Incremental cost of compliance from the 1996 permit to the 2001 permit.

<b>LA County MS4 Storm Water Programs</b>	<b>2001 Permit Cost per household</b>	<b>1996 Permit Cost per household</b>	<b>Percent increase</b>
Program Management	\$1.66	\$1.56	6%
Public Information and Participation	\$1.38	\$1.30	6%
Industrial/ Commercial Inspection	\$0.99	\$0.90	9%
Development Planning	\$0.84	\$0.79	6%
Development Construction	\$0.05	\$0.05	6%
Public Agency Activities	\$11.50	\$10.82	6%
Illicit Connection/ Discharge Elimination	\$0.80	\$0.75	6%
<b>Total Cost per Household</b>	<b>\$17.21</b>	<b>\$16.18</b>	<b>6%</b>

\*The incremental costs to LA County municipalities were computed by extrapolation using the City of Los Angeles' budget information provided for 2000/2001 (1996 permit) and 2001/ 2002 (2001 permit). The City of Los Angeles has a dedicated special fund (storm water pollution abatement charge). Costs reported by the City of Los Angeles were considered most reliable.

\* Costs of the monitoring program are not included because the County of Los Angeles as Principal Permittee almost exclusively conducts monitoring on behalf of the cities. If computed on a countywide basis, the cost of annual monitoring as reported by the County of Los Angeles increased from \$ 0.16 to \$0.24 per household.

The incremental cost of compliance under the 2001 permit was estimated to be less than ten percent, if City of LA data is extrapolated to be indicative of compliance cost to other permittees.

## 4.0 DISCUSSION

### 4.1 Overview of Budget Estimates

Permittees have provided annual budget estimates for implementing the 1996 permit, as required under the monitoring and reporting program for that permit. The estimates aggregated to \$142 million and \$145 million for fiscal years 2000/01 and 2001/02 respectively. Overall, the total estimated cost for compliance with 1996 permit is close to five hundred million dollars over a five-year period. However, the permittees included questionable estimates and creative accounting. For example, for the fiscal year 2000/01, the City of Glendale reported \$5.6 million for public agency activities, the City of Downey reported \$1.6 million for monitoring, and the City of Hermosa Beach reported \$2.8 million for elimination of illicit discharges and

connections. On follow-up inquiry, City staff was unable or did not substantiate these reported expenditures.

With few exceptions, permittees failed to provide additional data regarding program costs during the permit reissuance process. One exception was a cost estimate, dated June 18, 2001, that the City of Los Angeles<sup>13</sup> submitted as part of its formal comments on the first draft permit. The Regional Board considered these comments, and made substantial reductions in certain requirements in the third draft, such as the frequency of sweeping streets.

Permittees' cost estimates range widely (from zero to \$4.2 million) as reported for the program to eliminate illicit discharges and connections in 2000/01, vis-à-vis the illicit discharges and connections elimination activity actually reported by the permittees to have been completed. The expenditures do not appear to bear any rational relationship to illicit discharges and connections elimination efforts.

RB staff review and inquiry of municipal staff, indicates that some cities are computing their storm water budgets by estimating a percentage of each of the city's line item budget that seems to be related to MS4 permit compliance. In other words it is only a rough "guess estimate". Sometimes costs associated with complying with the general industrial storm water permit, a separate program, appear to have been included under the MS4 permit expenditures.

#### **4.2 Pre-existing Programs**

Many jurisdictions have ongoing programs and activities that are related, to some degree, to improving storm water quality. These ongoing or pre-existing programs, such as hazardous waste permitting and inspection, recycling programs, road and street maintenance, sanitary sewer maintenance, flood control channel maintenance, catch basin clean-up, street sweeping, to name a few, are already in place due to other regulatory requirements or pre-existing programs. Even for cities that were incorporated after the promulgation of storm water regulations (1990) such as Calabasas and Malibu, it cannot be claimed that the expenditures for these types of activities are due to storm water regulations in their entirety. These services were performed prior to the existence of a storm water permit under a contract with the county or another administrative entity.

Inclusion of pre-existing programs (e.g. street sweeping) cause exaggeration of permit compliance costs, possibly representing more than 50% of the estimated reported budgets in many cases. Such costs should be listed separately since they are not a true new expenditure to comply with the MS4 permit requirements. The actual new expenditures for the implementation of the storm water requirements, in excess of what cities were already spending before the introduction of storm water regulations, may be much less than 50% of the currently estimated budgets reported to the Regional Board. Street Sweeping and Trash Collection costs account for most of the Public Agency Activities Program implementation expenditures, up to 98% of a program's budget in some cases, and up to 90% of the total storm water program implementation

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<sup>13</sup> This cost estimate includes \$0.8 million for implementation of trash TMDL and \$3.3 million to implement the pathogen TMDL.

expenditures for some cities. Overall, Public Agency Activities Program implementation costs amount to \$122 million (including street sweeping and trash collection which are the major portion of costs in this program) and account for 85% of the total budget expenditures of \$143 million. One may conclude that the permittees are spending on average \$41 per household for the Public Agencies Activities alone. To implement the rest of the storm water program, cities spend no more than 15% of their reported budgets, which is around \$22 million or \$9 on average per household. This figure of \$9 is almost identical to the U.S. EPA's cost estimate (See Table 1).

Program cost exaggeration may be a problem with other MS4 programs in the LA region as well such as the City of Long Beach and the Ventura County MS4 Program. Consider the case of the City of Long Beach (which is covered by its own MS4 permit). A review of its budget estimate indicates that street sweeping costs \$10 million, which corresponds to half of the reported budget of \$19 million. However, this is not a new expenditure for the City of Long Beach attributable to the storm water regulations. Street sweeping pre-dates the storm water regulations, so it cannot be considered an extra burden on the city's budget. It is not a new expense. The only instance that may qualify as a new expenditure is an increase in frequency of street sweeping due to storm water requirements in excess of normal frequencies, e.g. the increase from an existing one time per month to two times per month street sweeping in commercial areas. A closer look may reveal that several other pre-existing programs are being claimed as new expenditures to comply with the 2001 permit requirements. These may include, flood control maintenance, sewer maintenance activities, storm drain reconstruction, road maintenance, hazardous waste collection, and solid waste recycling programs. This pattern of accounting appears to be repeated in the FY 2002/03 estimated budgets. The Public Agency Activities Program estimates provided at \$210 million (including street sweeping and trash collection) account for 73% of the total budget of \$288 million<sup>14</sup>, while only 27% or \$78 million accounts for the cost of all the other programs combined.

The primary issue is what is the true additional financial burden for the implementation of the storm water regulations. Many of the activities performed by the cities can be listed as costs under the storm water costs budget, but they were incurred by the city before the storm water regulations, therefore they are not a true new expenditure or new burden on city revenues. In order to be accurate, only that portion of cost increase due to a new permit requirement and not otherwise already pre-existing should be identified as a new incremental in cost for the municipality. It is imperative to separate the budgets reported under the storm water requirements under pre-existing and new costs of compliance with the specific MS4 permit requirements to have a clear picture of what the true cost and burden of the storm water regulations are. Otherwise, the impression is given that the cost of compliance is huge and everything is a new burden, which is misleading. Costs to be attributed toward implementation of the MS4 permit requirements must be strictly attributable to new tasks specified in the Storm Water Management Plan.

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<sup>14</sup> The estimated budgets for FY 2002/03 are incomplete since a number of cities reported that they were unable to estimate the costs of implementation of the new permit requirements. The data may be reconciled when cities report the expenditures actually incurred in the 2003-2004 Annual Report.

### **4.3 Municipal Cost Sharing.**

Another problem area appears to be how the County of Los Angeles and the LA County Flood Control District budget fits into the overall cost picture. The County of Los Angeles' budget accounts for nearly 40% of the total estimated costs for all permittees combined, but it is not clear how this supports activities for all cities and how the cost is being accounted for (raising the possibility of double counting). For example, the County of Los Angeles does almost all of the monitoring required by the LA County MS4 Permit but other cities also report monitoring expenses. If these cities participate in the funding of this effort or on special projects, that may be appropriate, otherwise the cost estimate is dubious.

### **4.4 Comparison of Estimates with Expenditures**

A review of the Annual Report for 2001/02, which covers the last six months of the 1996 permit and the first six months of the new permit, indicates that a number of cities revised upward the expenditure figures by orders of magnitude relative to the estimated budget figures provided in the previous year's fiscal analysis. Other cities reported that the amount budgeted for was the exact amount spent, and some others reported a slight decrease in expenditures versus estimated budget.

Upon closer review of the status of implementation of specific programs under the 2001 permit, it becomes apparent that most of the permittees continued to implement the 1996 permit requirements, because updated Model Programs were not available until July 2002. Therefore, the apparent significant increase in expenditures for some cities versus estimated budgets, is likely due to changes in accounting practices and not due to any new activity.

### **4.5 Site Education Program**

Another example of accounting irregularity is the Site Visit Education program. The County of Los Angeles performed site education activities for 37 contract cities, paid for through existing funds, and as a consequence, some of the cities reported \$0 expense for this task. Other cities reported an additional separate expense. Some of the cities performed the site education visits themselves, and the County of Los Angeles reimbursed them a standard amount. In some cases, it appears that these cities did not subtract the reimbursed amount from their own estimated budget cost that they reported to the Regional Board.

Furthermore, an examination of the fiscal analysis in the 2001/02 Annual Report for expenditures for the site visit program for the last six months of the 1996 permit reveal more irregularities. For the first six months of the new inspection program of the 2001 permit, no site visits or inspections have been reported as completed in the Annual Report but significant amounts of expenditures are being reported as having been incurred. It is highly unlikely that the high costs

were incurred for logistics – such as setting up a critical source database or other administrative activities without any fieldwork. Therefore, the reported expenditures are questionable.

A RB staff brief review of the Site Visit Education Program under the 1996 permit, for six cities, revealed a \$2 million difference between the estimated budgets and the actual amount spent to conduct the site visit. For example, City of Glendale reported an estimated budget of \$1.86 million to perform the site visits, but the actual amount spent was about \$100,000. Similarly the City of Industry, for the same task, estimated a budget of \$276,280 but actually spent just \$35,618.

#### **4.6 Cost of the Inspection Program**

The 2001 permit upgraded the site visit program to a facility inspection. Based on RB staff review, the inspection program at industrial/commercial facilities can be performed within the existing reported budget estimates. In reality there may be a moderate increase in expenditure.

The average cost per site visit for the Site Visit Program ranged from \$50 to \$100 (the County of Los Angeles' reimbursement rate was \$50 for industrial/commercial sites and \$34 for restaurants). The time spent on each site ranged from 30 minutes to an hour (data reported by permittees). Assuming that the average cost of a site education visit was \$100 per site and multiplying this figure with the total number of site visits reported during the five year permit term, the total cost of implementation of this task equals \$6.5 million. Therefore, the projected budget of \$8 million for inspections is only a 23% incremental cost added to the existing budget. Further, assuming that a site inspection will involve twice as much effort as a site education visit, the average unit cost per site inspection can be reasonably estimated to be in the range of \$100 to \$200. This new requirement to elevate the site visit education program to an inspection program at industrial/commercial facilities in the 2001 permit appears not to have been so burdensome after all.

The County of Los Angeles, the principal permittee, has estimated the cost for the industrial and commercial inspection. The inspection program was generally claimed by many permittees to be the most cost-prohibitive element of the 2001 permit. As documented in memoranda prepared by the County of Los Angeles, dated December 5, 2001 and January 3, 2002, these inspections would cost the County and the cities an estimated \$8 million over the 5-year permit term. This \$8 million cost annualizes to \$1.6 million, and can be spread among all 84 permittees. In comparison with the estimated \$15.5 million spent during the previous permit term to implement the site education visit program, the inspection cost as determined constitutes a nearly 50 percent savings. Perhaps this is so because the logistical aspects were worked out during the site visit phase and that the inspection step-up imposes only a slight increase in burden.

Noteworthy is the fact that the inspection program is estimated to cost \$3.1 million (this may be the most expensive year due to start-up costs), in the FY 2002/03 fiscal analysis. The inspection requirement was identified as one of the more onerous provisions of the 2001 permit, but the cost appears to represent only 1.1% of the total estimated budget of \$288 million as reported by permittees.<sup>14</sup> The apparent marginal cost burden to the majority of the permittees to conduct

industrial and commercial inspections might be so because the City of LA and the County of Los Angeles carry the predominant share. The City of Los Angeles has its own inspection program and accounts for approximately 50% of all industrial/commercial facilities in Los Angeles County. The County of Los Angeles covers another significant portion of the industrial/commercial base. Thus, the other 83 permittees combined have jurisdiction over no more than the remaining 20% to 30%. Many cities can and have effectively used existing inspection programs such as pretreatment, code enforcement, public works, fire department, Certified Unified Public Agencies (CUPAs) to integrate the storm water inspection requirements.

#### **4.7 Misuse of Program Cost Estimates**

Some permittees' extensive use of circumspect estimates to demonstrate how financially burdensome the implementation of the LA County MS4 Permit is disingenuous. In order to establish credibility of program costs, permittees must thoroughly review the way the budgets are built, and the relationship between budget projections and actual expenditures of activities directly related to the implementation of the LA County MS4 Permit requirements.

Also the \$54 billion cost estimate cited by the California Department of Transportation (Caltrans) in June 1998 bears no relationship to the LA County MS4 permit provisions. Several municipal officials have widely cited this estimate as an annual cost that permittees will bear over the next 10 years. This is misleading because the Caltrans estimate was not prepared to meet the requirements that are specific to the LA County MS4 permit. The Caltrans estimate is invalid because of several erroneous assumptions. These include, namely that permittees are required to shift their strategy from BMPs that focus on preventing pollution at its source, to a regional treatment facility. Such a strategy would call for substantial land acquisition and capital costs to: (a) capture runoff from 1.2 inches of precipitation; and (b) construct 6 plants to treat all pollutants in the runoff, at a rate of 500 million gallons per day. This is clearly not the requirement reflected in the LA County MS4 permit, which relies upon, and provides flexibility for permittees to devise cost-effective BMPs to prevent pollutants from coming into contact with storm water and to reduce pollutants discharged in the storm water.

#### **4.8 Comparison with Palm Beach County, FL MS4 Program**

A comparison with the budget analysis of another Phase I MS4 Permit, Palm Beach County, Florida, shows similar accounting difficulties as for LA County, in the absence of clear guidelines from the U.S. EPA.

In the Palm Beach County Annual Report however, the costs under pre-existing programs is recognized. The first term Palm Beach County MS4 Permit includes the federally required inspection program at high-risk industrial/commercial sites. Looking at a comparison of scales, the population of Palm Beach County is one eighth of the population of LA County. The Palm Beach County MS4 program is funded by a combination of general funds and utility fee assessment.

Table 4. Comparison of MS4 program costs between Los Angeles County, CA and Palm Beach County, FL.

	Los Angeles County, CA	Palm Beach County, FL
Median cost per household <sup>15</sup>	\$30	\$32
Average cost per household	\$50	\$48
Range of cost per household	\$1 to \$515 <sup>16</sup>	\$3 to \$526
Population	9,335,522	1,131,184
Estimated budget	\$149,166,730	\$23,382,702
Average cost per household largest city <sup>17</sup>	\$18	\$130

#### 4.9 Comparison with MS4 Programs in Other U.S. Communities

There are few studies to date to provide a thorough analysis of the cost estimates for the implementation of the municipal storm water programs. The U.S. EPA performed a cost/ benefit analysis for the promulgation of Phase II Storm Water Regulations. A recent article<sup>18</sup> discusses the evaluation of cost estimates for the implementation of the six minimum control elements for small municipalities under Phase II rules. The author investigated two scenarios: one for a small community of 10,000 people and another for a medium sized urban area of 50,000 people. It is interesting to note that the small community scenario assumes it is adjacent to a larger city that has obtained a Phase I permit and can assist it in many of its permit responsibilities. This scenario resembles the situation in LA County urban area for many small cities.

The author concludes that the range of costs is similar to those identified by U.S. EPA in its estimate. The cost per capita was \$5.63 for the medium sized city (population of 100,000 or more) for the implementation of the municipal storm water in a five-year permit term following the first permit term and \$1.11 for the smaller city.

Extrapolating these figures by multiplying the per capita cost with the average number of 2.92 persons per household in Los Angeles County, we obtain a range between \$3.24 and \$16.43 per household for small to mid-sized cities. These findings tend to validate City of Los Angeles' average estimated cost of \$18 per household as a credible estimate noting that these costs are incurred by a significantly larger municipality implementing additional elements required by Phase I regulations.

<sup>15</sup> Household in LA County is defined as 3 persons, in PB County is 2.34 persons

<sup>16</sup> Excluding cities of Vernon and Industry

<sup>17</sup> Los Angeles, West Palm Beach

<sup>18</sup> NPDES Phase II Cost Estimates by Andrew J. Reese, P.E in Proceedings for National Conference on Tools for Urban Water Resource Management and Protection (February 2000) Chicago, IL.

The author also states that based on his own experience working in over 100 communities, he estimates that comprehensive storm water programs that include advanced storm water quality programs cost between \$7 to \$20 per capita per year. That translates in LA County to a value of \$58 average cost per household at the highest end. In contrast, the cost data reported by the municipalities in LA County show a value of \$515 average cost per household at the highest end, with 24 cities (28% of the total number of permittees) well above the maximum average cost per household estimated by the author.

## **5.0 RESPONSE TO COMMENTS ON DRAFT REPORT**

We extend our appreciation to the municipalities who responded to our draft document released in August 2002 and provided comments that enabled us to present a more in-depth analysis. The analysis should provide a basis for further discussions and help in creating a framework for how to match budget estimates with the true implementation costs for purposes of transparency and accountability.

The following summarizes RB staff responses to comments received:

Base Year for Cost Analysis – A commenter suggested that using the 2000-2001 estimates as a basis for cost analysis is flawed, and instead to use the 2002-2003 estimates, which would be the first full year of implementation under the 2001 permit. Among RB staffs' purpose during the current analysis was to review some of the previous assumptions and estimates made under the 1996 permit term and determine if the estimates truly reflected the costs of program implementation. The analysis identified a number of discrepancies and errors, and as a consequence a number of permittees updated some of their previously submitted budget figures. This is not to say that there were no municipalities that went through a thorough analysis and attempted to come up with a budget estimate as accurate as possible. Such diligence was simply very difficult to discern.

Site Education Visit Analysis – Commenters challenged the cost analysis for the implementation of the site education visits program, but no one provided hard numbers or tangible figures to dispute the facts presented in the analysis. As it stands, the analysis showed that for the site education visits implementation program, permittees spent a combined \$15.5 million dollars during the second permit term. In contrast, the County of Los Angeles County estimates that under the 2001 permit, the total cost will be \$8 million for the industrial/commercial inspection program.

Inspection Cost Estimate - It was suggested that the unit cost of the site inspection should be closer to the \$400 per inspection estimated by the consultants performing inspections on behalf of the U.S. EPA and Regional Boards at industrial sites covered by the Industrial Storm Water General Permit. We note that there might be a significant reduction in unit cost for municipal

permittees because municipal inspectors are not required to review the Storm Water Pollution Prevention Plan (SWPPP) and monitoring data. In addition, the municipalities may have reduced overhead costs usually incurred by an outside contractor. The estimated cost range projected by the RB staff analysis is between \$100 to \$200 per site inspection and is a very reasonable assumption.

Equating big budgets to better compliance - It appears that some permittees infer that RB staff consider “the bigger the amount, the better the compliance” with permit requirements. A high budget estimate means a chance to “look good” on paper and not draw the attention during report review. There is a misconception that a small budget equates to a red flag indicating that the permittee is not allocating enough resources to program implementation. Quite the contrary, RB staff performed in-depth analysis. Any intentional budget inflation, when discovered through a program audit, may lead to Regional Board enforcement action.

Tiered compliance – Some permittees perceive that different tiers of efforts to comply are appropriate and acceptable even though the Maximum Extent Practicable (MEP) standard applies equally to all Permittees. Some commenters noted that some cities are aggressive in implementation and therefore spend more, and others spend excessively because of previous lawsuits. The rest, who spend significantly less, should not be compared with the former groups, simply because their effort is less aggressive, or because they were never challenged with a lawsuit. As far as the RB staff is concerned MEP applies equally to all permittees. A tiering of effort does not constitute compliance with the MEP standard.

Pre-existing Programs - One commenter suggested that the idea of pre-existing programs does not make sense any more, since the new permit carries over most of the programs established under the 1996 permit. Therefore, the true comparison should be made between pre-existing programs under the 1996 permit, and the new requirements under the new permit. We note that in surveying Phase I municipalities, to prepare its *Report to Congress on the Phase I Storm Water Regulations*, the U.S. EPA sent out a survey form to Phase 1 NPDES Municipal Storm Water permittees. The survey’s purpose was to determine the costs of storm water regulations and their financial impact on Phase 2 municipalities. One of the questions on the survey was:

“6) Please estimate (a) your agency’s cost of activities from before the Phase 1 program that you now include as part of your phase 1 permit (b) your agency’s new activities that you are now required to do as part of the phase 1 permit that you were not doing previously.”

It is clear that the U.S. EPA intends for MS4 permittees to distinguish between pre-existing program costs prior to the inception of the storm water permit and new costs incurred since, when reporting budgets.

Inclusion of the Cost of TMDL Implementation - Some commenters contended that the cost of TMDL implementation should be included in storm water budget reporting. However, except for the trash TMDL specifically mentioned in the 2001 permit, all the other TMDLs are not described in the permit provisions and therefore, the cost of implementation is unknown. When a particular TMDL becomes part of the LA County MS4 permit requirements, then it would be an

appropriate practice to include the cost of TMDL compliance with the particular TMDL in the storm water budget estimate.

## **6.0 FUTURE COMPLIANCE COSTS**

It is highly speculative to estimate what future permit compliance costs will be. However, future costs can be divided into two broad categories: 1) Compliance with direct permit costs and 2) compliance with receiving water limitations. The first category is specific to the costs associated with the prescriptive elements of the permit, excluding the receiving water limitations provision (Part 2 of the permit). This report has, in essence, focused on this quantifiable category of costs. Costs for compliance with the receiving water limitations have not been assessed or included in this report given that this provision of the permit has not yet been invoked and such costs, to the extent costs are incurred, will depend on the successive, iterative application of cost-effective BMPs designed to achieve water quality standards.

The “iterative process” is a mechanism by which compliance with the LA County MS4 permit’s receiving water limitation provision can be achieved over time. “Receiving Water” refers to that body of water into which the discharge of storm water from the municipal separate storm sewer system is placed, i.e., a river, stream, ocean or lake. The LA County MS4 permit’s receiving water limitations’ language is structured so that discharges of pollutants from the municipal storm sewer do not degrade the “receiving water” quality below the quality allowed by long-established water quality standards. The water quality standards are contained primarily in the Regional Board’s Basin Plan and reflect the level of water quality necessary to support aquatic life and safe human use of the water. The iterative process recognizes that degraded water quality from a storm water discharge sometimes cannot be restored to compliance with water quality standards through the application of a single round of BMPs. Rather, the concept is that a municipal permittee should develop a reasoned suite of BMPs, apply them, measure the water quality improvement achieved, and, if the original suite of BMPs have not, over time, achieved water quality standards, that they should be augmented with additional BMPs until water quality standards are achieved.

A key element of this process is the selection of BMPs by the permittees. Given that the selection of BMPs is both prospective and unknown at this time, a specific cost estimate for compliance cannot be developed. However, some general conclusions can be drawn as to the range of costs involved. Most importantly, the permit does not mandate any specific BMPs for use in the iterative process and, presumes that the most cost effective BMPs will be selected by the permittees.

Source control is one of the most important and cost effective strategies available to address storm water pollution. Clearly, if you have removed or dramatically reduced the presence of pollutants that can be discharged in storm water, the need for any downstream controls is either eliminated or dramatically reduced. Inspections of industrial sites to ensure compliance with municipal storm water ordinances (as provided in the LA County MS4 permit), therefore, becomes a very significant BMP that can reduce the presence of pollutants before they become entrained in storm water. Inspections are one of the most cost effective strategies that can be

used to reduce the presence of storm water pollutants, especially of toxic metals.

Some cost assessments have been or are being developed on the basis of applying sophisticated chemical and biological treatment to the entire flow of storm water during a major rain event. Storm water flows in Southern California produce very large volumes of water that can carry pollutants. As noted above, source control and other cost-effective BMPs can be effectively used to substantially reduce pollutant loadings in storm water and the Regional Board staff believes that these BMP approaches are the most appropriate to pursue. The collection and treatment of storm water flows in massive, high cost, and sophisticated treatment systems is not required by the LA County MS4 permit which presumes that source control and cost-effective BMPs will be effectively applied through the iterative process.

## **7.0 CONCLUSION**

1. It is essential to identify budget items separately as “costs of pre-existing programs” vs. “new costs” due to the implementation of the storm water program, in order to determine the incremental costs of the reissued 2001 permit. However, LA County cities have never accounted for the storm water program in their budgets in this manner.
2. The average combined household cost, based on the reported budgets is in the range of \$50 to \$63 per year. Using the assumption of segregating the budgets into pre-existing programs and expenditures to implement the storm water program, the average cost per household per year goes down to \$12.50 - \$18 for implementing the new programs required by the municipal permits.
3. The 2001 LA County MS4 permit costs may involve at most a 15% to 25% overall incremental increase over the cost to implement permit requirements in the second permit term (1996-2001) in terms of average annual costs per household. This is demonstrated by the educational site visits vs. inspection program comparison (the elevation from site visits to inspection program was considered the single largest increase in expenditures). If we accept the assumption presented previously that the actual total cost of implementing the site visits was \$6.5 million under the previous permit, the \$8 million estimate for site inspection in the new permit, represents a 23% increase. On a recent conversation with a knowledgeable municipal representative, it was confirmed that the assumption of 15% to 25% incremental increases in costs in upgrading from site educational visits to inspections seemed reasonable. In this particular instance, a city may already be performing regulatory inspections for other programs and the storm water inspections can be readily incorporated with the other activities for efficiency. Some municipalities have expressed their intent to integrate their storm water inspection activities with other existing inspection programs such as CUPA.
4. A closer look at the budget accounting practices of municipalities reveals that their claim of excessive financial burden to comply with the MS4 permit requirements is at best exaggerated. It is also apparent that until clear accounting and budget reporting guidelines are formulated, and

financial audits are performed, budget numbers reported by the cities will be difficult to compare, as there are widely varying ways of accounting for the costs of implementation. In the absence of clear guidelines, (See U.S. General Accounting Office Report: “WATER QUALITY – Better Data and Evaluation of Urban Runoff Programs Needed to Assess Effectiveness.” [2001],<sup>19</sup> it is difficult to determine with any certainty the cost the cities incur to implement the MS4 permit requirements and to differentiate costs between pre-existing programs and new expenditures.

5. RB staff recommends that a “Storm Water Budget Reporting Guidelines” workgroup be established. The objective of the workgroup would be to develop some generally accepted budget-reporting guidelines. The workgroup would assist in developing guidelines on how storm water budgets and costs should be reported so that its endusers, such as the public and environmental regulators, are able to determine implementation, progress, performance, and make across municipal program comparisons with a high level of confidence.

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<sup>19</sup> The report uses the LA County MS4 Program reported estimated budgets from FY 1999 to make national comparisons.